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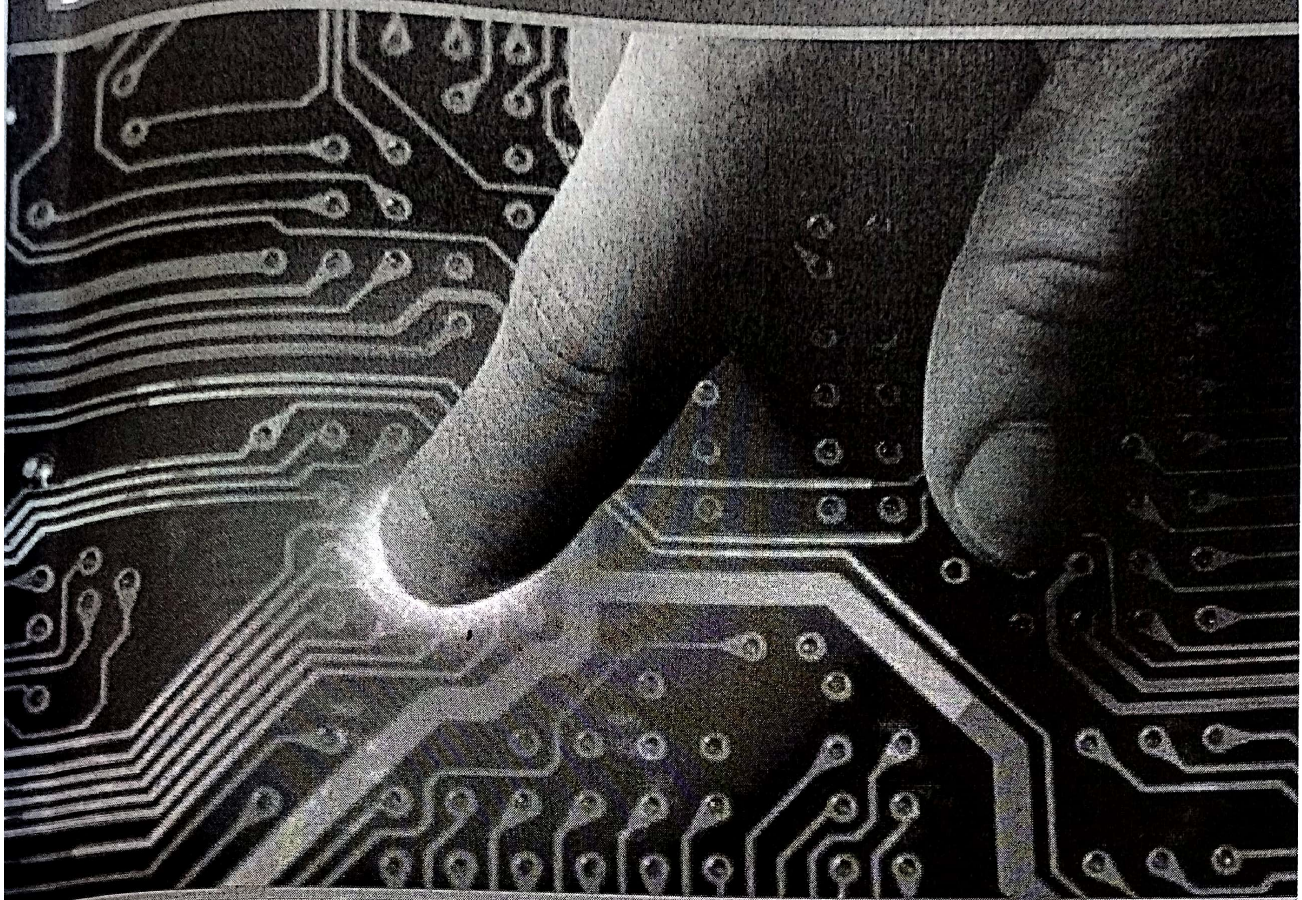
**DEPARTMENT OF
COMPUTER ENGINEERING**



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INDEX

No.	Name of Project
1	Hand Gesture recognition using Python and opencv
2	Zeus-AI assistant
3	IntelliHouse using IoT
4	lot based Ecg monitoring system
5	College Voting Portal
6	Flood Detection Using Aurdino
7	Parth Milk Collection Dairy
8	Avoid Flooding
9	weather monitoring system
10	SMART PLANT MONITORING SYSTEM
11	Hand Gesture recognition using Python and opencv
12	The Women Safety Application Using Android Technology
13	Breakout ball game
14	Fish warehouse inventory
15	MMGATE
16	obstracle avoiding robotic car
17	Alcohol detection and engine lock system
18	Parth milk collection dairy
19	Pratik Spices Management System
20	EV 24 ChatBot
21	Design of ALPINE INDUSTRIES Website
22	E commerce web application
23	Breakout Ball game
24	Real time sign language detection
25	Automated Drawing and Writing Machine
26	Obstacle avoiding robotic car
27	Online Transaction Fraud Detection
28	Gesture Mouse Cursor Control Using Open CV
29	Alcohol Sensing Machine Display with Alarm
30	Billing System
31	Locate Missing Children Using AI
32	AI Doctor Chatbot
33	Book Shop Inventory System
34	LPG gas detector with SMS alert
35	Air and Sound pollution monitoring system
36	KEYSPELLS HUMAN COMPUTER INTERACTION EMULATION USING CUSTOM HAND GESTURE RECOGNITION



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Weather Monitoring System

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ABSTRACT: In order to gather and analyse weather-related data in real-time, a weather monitoring system is a collection of hardware, equipment, and software tools. Sensors for detecting temperature, humidity, wind direction and speed, air pressure, and precipitation are generally part of these systems. Advanced algorithms and predictive models are used to process and analyse the acquired data in order to produce precise weather forecasts, alerts, and warnings. A wide range of applications, including aviation, transportation, agriculture, and emergency management, depend heavily on the weather monitoring system. These systems support decision-makers in making educated decisions, maximising resource use, and mitigating risks related to extreme weather events by providing accurate and timely meteorological information.

All things considered, weather monitoring systems are crucial tools for guaranteeing public safety, boosting economic output, and safeguarding the environment.

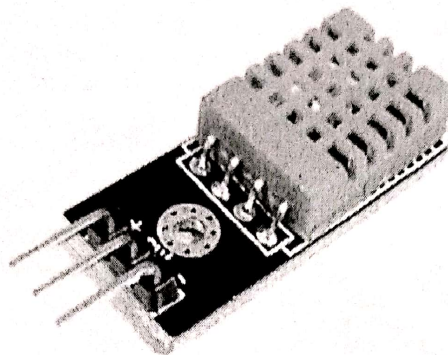
I. INTRODUCTION

IoT can transport temperature, humidity, and moisture measurements to the cloud for analysis. NodeMCU is the platform for the Internet of Things. Thing talk serves as the cloud server's platform. Giving the user ongoing plant monitoring is the main objective. The recommended smart plant management can be utilised to keep an eye on both domestic and small-scale agricultural plants. Commercial farming can benefit from using sophisticated sensors, and this model can be fortified to be more durable. Using this intelligent plant management system that uses IoT, the user will be able to continuously monitor the plant. The user can use the Blynk smartphone to activate the irrigation motor after receiving a notification anytime the soil moisture level falls below a certain threshold. Temperature, humidity, and moisture information can be sent via IoT to the cloud for analysis. The platform for the Internet of Things is NodeMCU. The cloud server's operating system is Thing Talk. The major goal is to provide the user with constant plant monitoring. Both home and small-scale agricultural plants can be monitored using the suggested smart plant management. The use of sophisticated sensors in commercial farming is advantageous, and this model can be strengthened to be more resilient. The user would be able to continuously monitor the plant using this IoT-based intelligent plant management system. Anytime the soil moisture level drops below a predetermined level, the user will receive a notification on their Blynk smartphone, which they can use to engage the irrigation motor.

II. FUNDAMENTALS AND BASICS

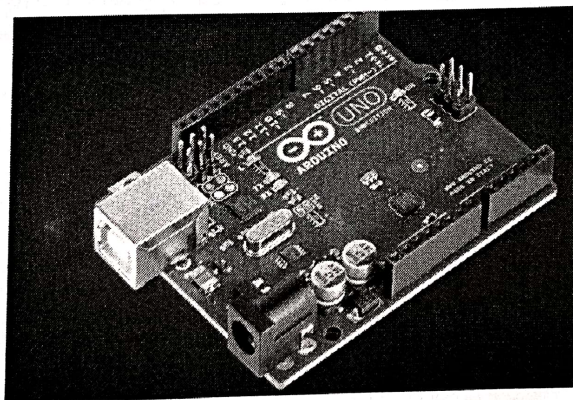
A. Digital Humidity and Temperature sensor

A DHT11 sensor is used to measure the temperature and relative humidity of the air. Its main advantage is that it is a low-cost digital sensor for monitoring temperature and relative humidity [5]. The relative humidity varies with temperature. When it is warmer outdoors than it is inside, the air is more humid, and vice versa. All microcontrollers, such as Arduino, NodeMCU, and others, are easily interfaced with. It has a capacitive sensing device for detecting humidity and a thermistor for determining temperature. The capacitance is made up of two electrodes. The moisture-controlling substrate acts as a dielectric between them. A change in capacitance will occur as the humidity changes. Based on the accompanying changes in resistance, a negative temperature coefficient thermometer can calculate the temperature. It is capable of being converted to digital form. As the temperature rises, the resistance will decrease. Temperatures range from 0 to 50 Celsius. The humidity fluctuation for this sensor is between 20 and 80%.



B. ARDUINO UNO

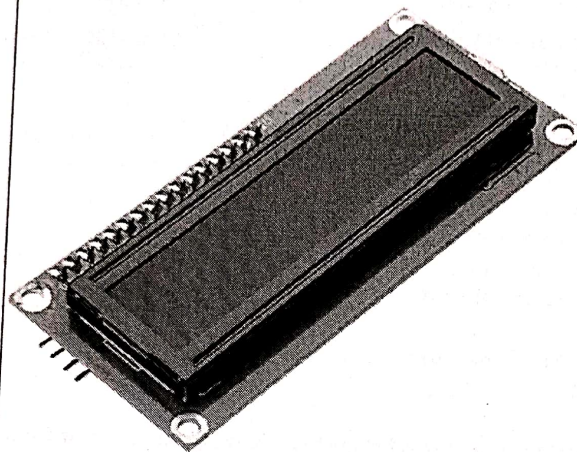
The Arduino Uno is an open-source microcontroller board created by Arduino.cc and first made available in 2010. It is based on the Microchip ATmega328P microprocessor.[2][3] Sets of digital and analogue input/output (I/O) pins are included on the board, allowing it to be interfaced with other expansion boards (shields) and other circuits.[1] The board contains 6 analogue I/O pins and 14 digital I/O pins, six of which can be used for PWM output. It can be programmed using the Arduino IDE (Integrated Development Environment) with a type B USB connector.[4] A barrel connector that can handle voltages between 7 and 20 volts, such as a square 9-volt battery, or a USB cable are both options for powering it. It resembles the Arduino Nano and Leonardo in certain ways.[5][6] A Creative Commons licence is used to distribute the hardware reference design.



C. LCD DISPLAY :

A flat-panel display or other electronically controlled optical device that makes use of polarizers and the light-modulating capabilities of liquid crystals is known as a liquid-crystal display (LCD). Liquid crystals don't directly emit light[1], instead creating colour or monochromatic pictures with a backlight or reflector.[2] There are LCDs that can show random images (like on a general-purpose computer display) or fixed displays with little information that can be seen or hidden. Examples of gadgets using these displays include preset words, figures, and seven-segment displays,

such as those seen in digital clocks. They both make use of the same fundamental technology, although some displays have larger components, whereas others employ a grid of tiny pixels to create random images. LCDs can be turned on regularly (positively) or off.



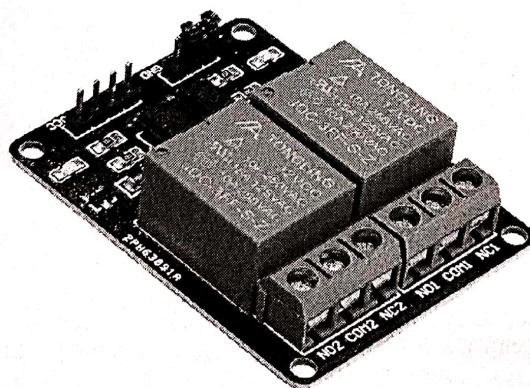
D. 2 CHANNEL RELAY :

Each channel on this LOW Level 5V 2-channel relay interface board requires a 15-20mA driver current. It can be used to operate a variety of high-current devices and appliances. It has high-current relays that operate at either AC250V or DC30V 10A. It features a common interface that a microcontroller may directly control.

Maximum output of the relay: DC 30V/10A and AC 250V/10A

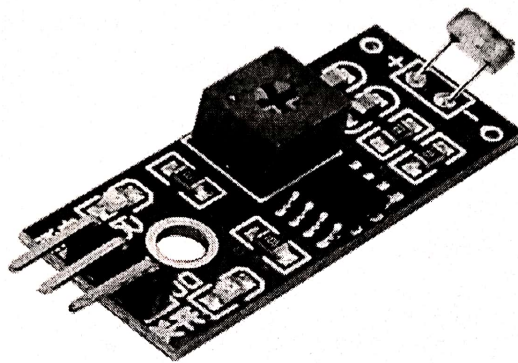
Relay Module with 2 Channels and Optocoupler The expansion board for the Arduino compatible LOW Level Trigger Standard interfaces that microcontrollers (8051, AVR, *PIC, DSP, ARM, ARM, MSP430, TTL logic) can directly control

Relay much excellent free music uses SPDT. Additionally, a common terminal, one generally closed terminal, one normally open terminal, a good anti-jamming VCC, and RY-VCC the relay module's power source. You can remove the jumper cap and connect an additional power source to RY-VCC when you need to supply a lot of power to a load.



E.LDR(LIGHT DEPENDANT RESISTORS):

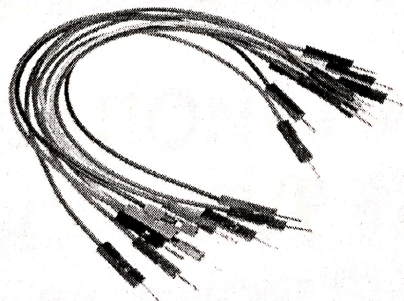
Photodetectors, also called photosensors, are sensors of light or other electromagnetic radiation.[1] There is a wide variety of photodetectors which may be classified by mechanism of detection, such as photoelectric or photochemical effects, or by various performance metrics, such as spectral response. Semiconductor-based photodetectors typically have a p-n junction that converts light photons into current. The absorbed photons make electron-hole pairs in the depletion region. Photodiodes and photo transistors are a few examples of photo detectors. Solar cells convert some of the light energy absorbed into electrical energy.



F.Relay NodeMCU

Relay is needed to regulate 230v AC and current of 10A because NodeMCU, which is operated at 5v, is unable to control higher voltage devices directly. Relay jqc3f-05vdc-c1t was used to control the circuit. Relays are switches that are used to turn circuits on and off. Where a few circuits are restricted by a single signal, it is frequently utilised. It uses a low power signal to control high power circuits. It consists of signal (S), negative (-), and positive (+) low voltage pins. '+', '-' are connected to the microcontroller's VCC and GND, respectively, while S is connected to one of the Node MCU's inputs to turn on the relay. It has three terminals that are utilised to link the external circuit (NC, NO, and C). Both normally closed (NC) and normally open (NO) are controlled by the same terminal, C. The external circuit is connected to the normally closed and common terminals when the relay is disengaged. The external circuit and the common terminal are connected when the relay is turned on.

G.Jumper Wires





Jumper wires are used to connect components on your breadboard to the header pins on your Arduino. Wire up all of your circuits with these. Simply said, jumper wires are wires with connector pins at either end that can be used to connect two places without soldering. With breadboards and other prototype tools, jumper wires are frequently used to make it simple to change a circuit as required. Fairly easy. Jumper wires are actually among the most elementary things there are. Male-to-male, male-to-female, and female-to-female jumper wires are the most common types. The wire's termination tip distinguishes each one from the other. While female ends do not have a protruding pin and are used to plug into items, male ends do. The most typical and frequently utilised jumper wires are male to male. A male-to-male wire is required to connect two ports on a breadboard.

III. ACKNOWLEDGEMENT

We have taken efforts in this project. However, it would not have been possible without the kind support and help of my group members and my teachers. I would like to extend my sincere thanks to all of them.

I am highly indebted Marathwada Mitra Mandals Polytechnic for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project. I would like to express my gratitude towards my parents & member of Marathwada Mitra Mandals Polytechnic for their kind co-operation and encouragement which help me in completion of this project. Their commitment to efficient inventory management and customer service has been an inspiration to us.

We want to express our gratitude to everyone who helped create this Smart Plant Monitoring System once more. This project would not be possible without your help and support.

IV. CONCLUSION

Maintaining a weather station in the environment for monitoring purposes allows the environment to protect itself. The environment's sensor devices must be used for data collection and processing in order to achieve this. We can make the environment more realistic by using sensor devices in it. The user will then have access to the gathered data and the analysis' findings over Wi-Fi. In this study, an effective, low-cost embedded system that monitors the surroundings is provided. Additionally, it uploaded the sensor parameters to the cloud. This information can be easily shared with other users and will be useful for upcoming analyses. This model can be enhanced to keep an eye on industrial zones and growing cities.

REFERENCES

1. <https://ieeexplore.ieee.org/document/9025847/>
2. <https://ieeexplore.ieee.org/document/9655818/>
3. <https://ieeexplore.ieee.org/document/8982713/>
4. <https://ieeexplore.ieee.org/document/8653691/>
5. <https://ieeexplore.ieee.org/document/6701797/>





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Abstract— Zeus is an AI assistant created to increase effectiveness and productivity across a variety of life areas. Zeus' sophisticated natural language processing capabilities enable conversational user interaction, making it simple to get individualised support in real time. Zeus has a wide range of functions, such as speech synthesis, voice recognition, and machine learning algorithms, which allow it to adapt to users' preferences and provide personalised recommendations. Users of Zeus can manage their schedules, create reminders, place calls, and get information while they're on the road. Zeus is an indispensable tool for anybody looking to streamline their daily

routine because to its user-friendly interface and proactive approach to job management.

1. INTRODUCTION

Introducing Zeus, a ground-breaking AI helper that will revolutionize how we work and live. Zeus is built on cutting-edge machine learning techniques and technology for natural language processing. Its goals are to increase productivity, streamline workflows, and give users insightful data-based information. Zeus is much more configurable and adaptive to individual needs and tastes than conventional digital assistants. It is a very potent tool for simplifying processes and

minimizing workload since it can learn from prior interactions and feedback and modify its reactions and recommendations accordingly. Introducing Zeus, a ground-breaking AI helper that will revolutionize how we work and live. Zeus is built on cutting-edge machine learning techniques and technology for natural language processing. Its goals are to increase productivity, streamline workflows, and give users insightful data-based information. Zeus is much more configurable and adaptive to individual needs and tastes than conventional digital assistants. It is a very potent tool for simplifying processes and minimizing workload since it can learn from prior interactions and feedback and modify its reactions and recommendations accordingly.

The capabilities of Zeus extend beyond simple commands, as it can perform tasks such as web searches, setting reminders, scheduling appointments, and much more.

This makes it a powerful tool for streamlining daily tasks and improving productivity.

Overall, this project demonstrates the potential of AI technology to enhance our daily lives and revolutionize the way we interact with the world around us.

➤ Functionalities of Zeus:

1. **Natural Language Processing:** Zeus has advanced natural language processing capabilities that allow it to understand and respond to user queries in a natural and intuitive way. Users can communicate with Zeus using voice commands or text inputs, and Zeus can parse and understand complex sentences, idiomatic expressions, and colloquialisms.

2. **Task Automation:** Zeus can automate routine tasks and workflows, such as scheduling appointments, sending emails, or setting reminders. Users can create custom workflows and automate repetitive tasks to save time and reduce workload.

3. **Data Insights:** Zeus can provide users with valuable insights based on their data, such as trends, patterns, and correlations. Users can integrate Zeus with various data sources, such as CRM systems or social media platforms, to gain deeper insights into their business or personal performance.

4. **Personalization:** Zeus can adapt to individual user preferences and behavior over time. By learning from previous interactions and user feedback, Zeus can tailor its responses and recommendations to suit the specific needs of each user.

➤ Working:

An AI assistant typically works by using natural language processing algorithms to interpret and understand user queries and commands. The AI assistant then uses machine learning algorithms to analyze data and provide responses or actions based on the user's request.

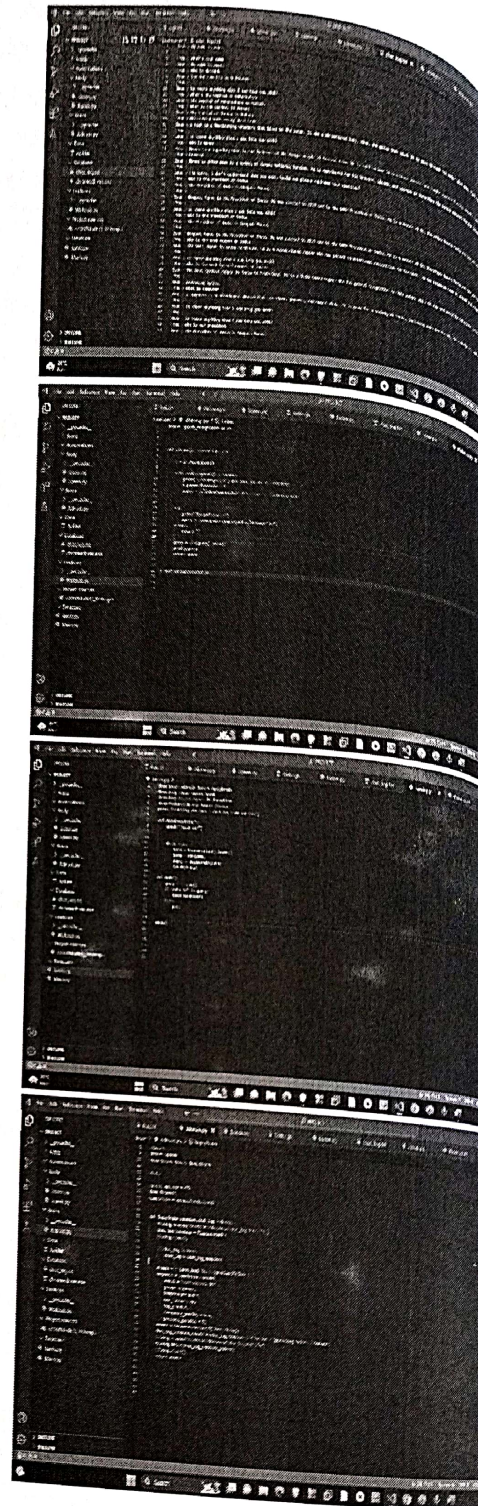
For example, if a user asks their AI assistant to schedule a meeting for next Tuesday at 2 pm, the AI assistant will use natural language processing to understand the request and machine learning algorithms to analyze the user's calendar and find an available time slot. The AI assistant will then send a meeting invite to the relevant participants and update the user's calendar accordingly.

AI assistants can also use predictive analytics to anticipate user needs and make proactive recommendations. For example, an AI assistant might suggest a list of tasks to complete based on the user's previous behavior or remind the user to take a break after an extended period of work. Overall, the working of an AI assistant involves using natural language processing, machine learning, and predictive analytics to understand and anticipate user needs and provide tailored responses and actions.

➤ Components:

1. **Natural Language Processing (NLP):** NLP is used to interpret and understand the user's queries and commands, which are typically expressed in natural language. NLP involves breaking down sentences and phrases into their constituent parts, such as words, phrases, and clauses, and analyzing the meaning of each part.
2. **Machine Learning (ML):** ML is used to analyze data and provide responses or actions based on the user's request. ML involves training algorithms on large datasets, allowing the algorithms to learn from the data and improve their accuracy over time.
3. **Knowledge Graphs:** A knowledge graph is a database that organizes information into a graph structure, allowing for more efficient and effective querying and analysis of the data. AI assistants can use knowledge graphs to store and access information, such as user preferences, past interactions, and relevant data sources.
4. **Application Programming Interfaces (APIs):** APIs are used to connect the AI assistant to various third-party tools and services, such as calendars, email, and messaging apps. APIs allow the AI assistant to access and integrate with these tools, providing users with a more centralized and streamlined workflow.
5. **User Interfaces:** User interfaces are used to allow users to interact with the AI assistant, typically through voice commands or text inputs. User interfaces can range from simple chatbots to more advanced virtual assistants with natural language processing capabilities.

➤ WORKING OF OUR ASSISTANT:



4. CONCLUSION;

IN CONCLUSION, ZEUS IS AN ADVANCED AI ASSISTANT THAT IS DESIGNED TO ENHANCE PRODUCTIVITY, STREAMLINE WORKFLOWS, AND PROVIDE VALUABLE INSIGHTS TO USERS. WITH ITS POWERFUL NATURAL LANGUAGE PROCESSING CAPABILITIES, MACHINE LEARNING ALGORITHMS, AND PERSONALIZED FEATURES, ZEUS REPRESENTS A SIGNIFICANT ADVANCEMENT IN THE FIELD OF DIGITAL ASSISTANTS.

ZEUS'S ABILITY TO LEARN FROM USER BEHAVIOR AND PREFERENCES ALLOWS IT TO PROVIDE TAILORED RESPONSES AND RECOMMENDATIONS, WHILE ITS INTEGRATIONS WITH VARIOUS THIRD-PARTY TOOLS AND SERVICES ALLOW USERS TO CENTRALIZE THEIR WORKFLOWS AND ACCESS ALL THEIR DATA AND TOOLS IN ONE PLACE.

MOREOVER, ZEUS'S PREDICTIVE ANALYTICS CAPABILITIES ENABLE IT TO ANTICIPATE USER NEEDS AND MAKE PROACTIVE RECOMMENDATIONS, FURTHER ENHANCING ITS USEFULNESS AS A PRODUCTIVITY TOOL.

OVERALL, ZEUS IS A POWERFUL TOOL FOR INDIVIDUALS AND BUSINESSES LOOKING TO IMPROVE THEIR PRODUCTIVITY, EFFICIENCY, AND INSIGHTS. WITH ITS ABILITY TO AUTOMATE ROUTINE TASKS, PROVIDE VALUABLE DATA INSIGHTS, AND PERSONALIZE ITS RESPONSES AND RECOMMENDATIONS, ZEUS CAN HELP USERS ACHIEVE THEIR GOALS AND TAKE THEIR WORK AND LIFE TO THE NEXT LEVEL.

5. REFERENCES;

- <https://www.ijert.org/voice-assistant-using-artificial-intelligence>
- <https://www.techtarget.com/searchcusatomerexperience/definition/virtual-assistant-AI-assistant>
- <https://www.capterra.com/virtual-assistant-software/s/windows/>

Chatbot for Healthcare System Using Artificial Intelligence

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Abstract- Healthcare is very important to lead a good life. However, it is very difficult to obtain the consultation with the doctor for every health problem. The idea is to create a medical chatbot using Artificial Intelligence that can diagnose the disease and provide basic details about the disease before consulting a doctor. This will help to reduce healthcare costs and improve accessibility to medical knowledge through medical chatbot. The chatbots are computer programs that use natural language to interact with users. The chatbot stores the data in the database to identify the sentence keywords and to make a query decision and answer the question. Ranking and sentence similarity calculation is performed using n-gram, TF-IDF and cosine similarity. The score will be obtained for each sentence from the given input sentence and more similar sentences will be obtained for the query given. The third party, the expert program, handles the question presented to the bot that is not understood or is not present in the database.

Keywords:- Chatbot, Healthcare, Artificial Intelligence, Virtual Assistance, TFID, N-gram

INTRODUCTION

Computers give us information; they engage us and help us in a lot of manners. A chatbot is a program intended to counterfeit smart communication on a text or speech. Yet, this paper concentrates only on text.

These systems can learn themselves and restore their knowledge using human assistance or using web resources. This application is incredibly fundamental since knowledge is stored in advance. The system application uses the question and answer protocol in the form of chatbot to answer user queries. This system is developed to reduce the healthcare cost and time of the users, as it is not possible for the users to visit the doctors or experts when immediately needed.

The response to the question will be replied based on the user query and knowledge base.

The significant keywords are fetched from the sentence and answer to those sentences. If the match is discovered or the significant, answer will be given or similar answers will be displayed.

The complex questions and answers present in the database are viewed and answered by an expert. Here the users can personally ask any questions regarding healthcare, as not much time will be wasted by the user for consulting a doctor. The input sentence of the chat pattern is stored in an Relational Database Management System (RDBMS).

PROPOSED SYSTEM

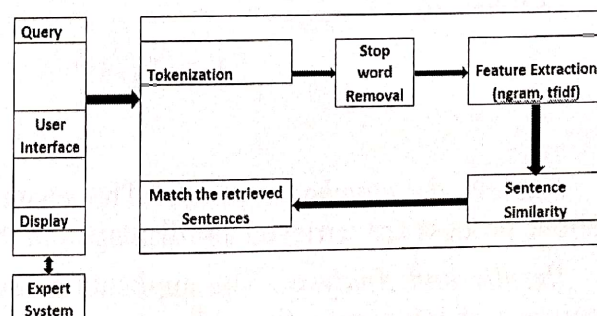
The chatbots are conversational virtual assistants which automate interactions with the users. Chatbots are powered by artificial intelligence using machine learning techniques to understand natural language. The main motive of the paper is to help the users regarding minor health information. Initially when the user's visits the website first registers themselves and later can ask the bot their queries. The system uses an expert system to answer the queries if the answer is not present in the database. Here the domain experts also should register themselves by giving various details. The data of the chatbot stored in the database in the form of pattern-template. Here SQL is used for handling the database.

SYSTEM ARCHITECTURE

Fig 1 is the system Architecture outline of chatbot healthcare application. The client inputs the question in the UI as the text. The UI gets the user query and after that sends it to the chatbot application. In the chatbot application, the literary experiences pre-processing steps incorporate tokenization where the words are tokenized, at that point the stop words are removed and feature extraction depends on n-gram, TF-IDF, and cosine likeness. The question answers are stored in the knowledge database to recover the retrieve the answer.

Tokenization: The words or sentences separated word by word for increased processing. It separates text into words at whatever point it experiences one of the rundowns of indicated character. All the words are separated from

sentences and the punctuation are disposed of. This implies the next steps.



Stop words removal: The stop words are removed from the sentences to extract important keyword. It is mainly employed to remove unnecessary things such as words

occurring too frequently in sentences. It is also used to delete words that are not important or the words with no specific meanings such as an, a, or the. This step is applied to reduce processing time or computational complexity.

Feature extraction based on N-gram TFIDF: Feature extraction is a characteristic decrease process in the document; it ranks the attributes as per the document. By doing this step it upgrades the speed and adequacy of the document. It is used to extract the set of keywords and frequency of the keywords in the document.

TF-IDF: Term frequency and Inverse document frequency is used to calculate the weight of each term in the sentence.

The term frequency is used to check how many times the term has been occurred in a particular sentence using the formula below.

$$tf = tf_i$$

Note: tf stands for term frequency.

IDF used to compute the weight of uncommon words over all reports in the document. The words that appear in a while in the document have a high IDF score. It is given by the condition underneath

N-gram: N-gram is an endeavour to expand N-gram models with variable length arrangements. A sequence can be a grouping of words, word class, grammatical feature or whatever a succession of something that the modeller thinks bearing significant language structure data. In this system, N-gram is used for text compression or reduce the data space in the document, to extract the relevant keywords from the database.

Sentence similarity: Cosine similarity is being used to check the similarity between two sentences. The similarity between the query and document is directly proportional to the number of query weights. The similarity calculation result of the two documents ranges from 0 to 1 since the term frequency cannot be negative. The formula for calculating cosine similarity is given below:

$$\text{similarity} = \cos(\theta) = \frac{\mathbf{A} \cdot \mathbf{B}}{\|\mathbf{A}\| \|\mathbf{B}\|} = \frac{\sum_{i=1}^n A_i B_i}{\sqrt{\sum_{i=1}^n A_i^2} \sqrt{\sum_{i=1}^n B_i^2}}$$

Retrieve the matched sentence: The answers for the query which are obtained from the above process are retrieved and displayed in the user interface.

Results and Analysis: The application uses a question and answers protocol where consists of login page figure 2, where the user needs to give the details to register in the application if you are a new user, figure 3. Figure 4 shows the answer for the query

available in the database or displays similar answers for the query, figure 5. Figure 6 is the expert answering page where experts answer directly to the user's question. The application uses n-gram for text compression using bigram and trigram for faster execution of the query. The N-gram, TF-IDF, and cosine similarity to convey the answers to the user

Chatbot For Healthcare System	
Username:	
Password:	
Logi n	

Fig. 2. Login page

User Registration Page	
Username:	Password:
Name:	Age:
City:	State:
Specialist: Choose an item.	
☐ Male	
☒ Female	
Gender:	
Problem:	
Email:	
Mobile Numeber:	
Submit	

Fig. 3. Registration page

Chatbot for Healthcare System	
Home Page Profile New Post	
Question:	How to get rid of a leg cramp?
Answer:	Drink plenty of water. Stretch the cramped muscle and gently rub it to help it relax. Use a warm towel or heating pad on tense or tight muscles. taking vitamin B complex supplements to help manage leg cramps.
Update	

Fig. 4. User inputs query

Home Page Profile New Post	
Questions	Answers
How to cure fever?	If you're uncomfortable, take acetaminophen (Tylenol, others), ibuprofen (Advil, Motrin IB, others) or aspirin. Read the label carefully for proper dosage, and be careful not to take more than one medication containing acetaminophen, such as some cough and cold medicines. Call the doctor if the fever doesn't respond to the medication, is consistently 103 F (39.4 C) or higher, or lasts longer than three days.
How to treat a cut?	Wash your hands. Stop the bleeding. Clean the wound. Apply an antibiotic or petroleum jelly. Apply a bandage, rolled gauze or gauze held in place with paper tape. Change the dressing at least once a day or whenever the bandage becomes wet or dirty. Get a tetanus shot if you haven't had one in the past five years and the wound is deep or dirty. See a doctor if you see signs of infection on the skin or near the wound, such as redness, increasing pain, drainage, warmth or swelling.

Post Answers Page
Expert Name: Divya
Question: For how many days can I wait for my cold to get cured?
Answer: we can wait for 3 to 4 days. If not cured, consult a doctor.

Post Answer

Fig. 6. Expert Answering Page

CONCLUSION

A Chatbot is a great tool for conversation. Here the application is developed to provide quality of answers in a short period of time. It removes the burden from the answer provider by directly delivering the answer to the user using an expert system. The project is developed for the user to save the user their time in consulting the doctors or experts for the healthcare solution. Here we developed the application using the N-gram, TF-IDF for extracting the keyword from the user query. Each keyword is weighed down to obtain the proper answer for the query. The Web- interface is developed for the users, to the input query. The application is improved with the security and effectiveness upgrades by ensuring user protection and characters and retrieving answers consequently for the questions

REFERENCES

- Rajapakse, T., & Amarasinghe, S. (2019). Development of an AI chatbot for healthcare advice. Proceedings of the 6th International Conference on Advances in Computing and ----- Technology (ICACT), Colombo, Sri Lanka.
- Afolabi, I. T., Afolabi, A. O., & Fagbola, T. (2020). Development of a health chatbot system using natural language processing. Journal of Healthcare Engineering, 2020, 1-8.
- Islam, M. R., Islam, M. M., & Hossain, M. A. (2021). Design and implementation of an AI-based chatbot for medical diagnosis and treatment recommendation. SN Computer Science, 2(2), 1-13.
- Suryawanshi, S. S., & Deshmukh, S. A. (2020). Design and implementation of a chatbot for healthcare services. International Journal of Engineering Research and Technology, 13(10), 580-584.
- Singh, N., Singh, N., & Kumar, A. (2020). Design and development of a medical chatbot for healthcare services. Proceedings of the 6th International Conference on Advanced Computing and Communication Systems (ICACCS), Coimbatore, India.

Avoid Flooding using Arduino Uno

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Abstract: - The Avoid Flood Hardware Project is a hardware-based method for identifying and warning individuals about possible flood dangers in their immediate surroundings. The hardware gadget uses sensors to keep track of the water levels in lakes, rivers, and other bodies of water. In order to produce precise measurements, the gadget is intended to be put in key spots along the water body.

The Avoid Flood Hardware Project gadget tracks changes in water level in real-time by combining pressure and ultrasonic sensors. The gadget has a rechargeable battery and may deliver notifications to cell phones through cellular or Wi-Fi networks.

The hardware is made to be tough and weatherproof, able to survive extreme weather conditions including torrential rain, powerful winds, and flooding.

1. Introduction

Flooding is a natural disaster that can cause significant damage to property and threaten the safety of individuals in affected areas. The increasing frequency and severity of flooding in recent years have prompted many communities to take action to reduce the risk of flooding and minimize its impact. This has led to the development of various flood mitigation projects, including flood barriers, stormwater management systems, and early warning systems.

India faces floods almost every year, in varying degrees of magnitude. The frequent occurrence of floods can be attributed to factors like wide variations in rainfall both in time and space with frequent departures from the normal pattern, inadequate carrying capacities of rivers, river bank erosion, degradation of hilly catchment and silting of river beds, landslides, poor natural drainage in flood prone areas, glacial lake outbursts, cloud burst, etc. The country suffers huge economic loss annually besides the loss of precious human lives due to floods. There are evidences of increasing

number of high intensity rainfall event in the recent years varying non-uniformly in space and time. Such events lead to flash floods. Urban flooding due to storm water drainage congestion (pluvial in nature) has also become common in towns/cities due to such extreme meteorological events

One critical aspect of flood mitigation is to raise awareness among the general public and encourage them to take proactive measures to protect themselves and their properties from flooding. This is where the "Avoid Flooding" project comes in. The goal of this project is to provide education and resources to individuals and communities on how to prepare for and respond to flooding.

The project will focus on several key areas, including understanding flood risks, creating emergency plans, building flood-resistant structures, and identifying warning signs of impending flooding. By providing comprehensive information and tools, the Avoid Flooding project aims to empower individuals to take an active role in mitigating the impact of flooding and protecting their communities.

Ultimately, this project has the potential to save lives and minimize the economic and environmental costs of flooding.

2. Future Work

(Background or literature Review)

- There are things used for anti-flood protection and it makes your house, yard and much more, safe and protected when a flood arrives. They can be used over and over again.
- In our project we are going to make a model of a house. We are going to install 4 bottles below the house to save it from flooding.
- That is, as soon as the water comes out of the house, the house will rise up and the people in the house will know that the water is coming into the house.
- And let's say if water enters the house, then we have installed a buzzer outside the house.
- Due to this, the members of the house will be alerted and come out of the house. Their lives will be saved.

3. Methodology

(Methods and Materials)

Relevant details should be given, including experimental design and the technique (s) used along with appropriate statistical methods used clearly along with the year of experimentation (field and laboratory). A mixed-method approach has been followed in order to answer the research questions. The qualitative methods include focus group discussion, interview and observation in the field. Besides, I conducted a quantitative survey applying semi-structured questionnaire with the household representatives in the study areas. The relevant stakeholders for the study are people living in the areas, governmental organizations including Water Development Board (WDB), Upazila Agricultural Office, Disaster Response and Rehabilitation office, non-governmental organizations working on disaster risk reduction and resilience in Bangladesh, academicians researching on flood risk management in Bangladesh. The following section will describe the methods and techniques in detail.

The methodology is conceptually represented in Fig. 1

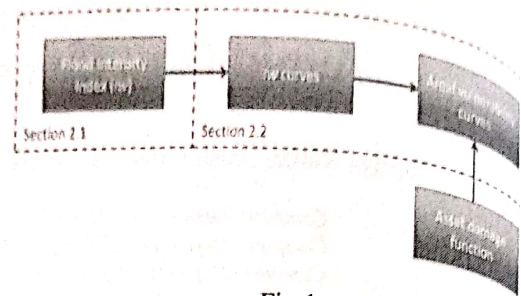


Fig.1

4. Proposed Approach/ Mathematical Model

Step 1: We first load the Arduino Code.

Step 2: set rainapin=A0

greenLED=6,

redLED=7;

Step 3: then we adjust the threshold

Value=800

Step 4: set LED light setup

Step 5: set serial wise setup

Step 6: read the input on analog pin

Step 7: use if else

5. REQUIRED HARDWARE

1. Arduino Uno

The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc and initially released in 2010. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board has 14 digital I/O pins (six capable of PWM output), 6 analog I/O pins, and is programmable with the Arduino IDE (Integrate

Development Environment), via a type B USB cable. It can be powered by a USB cable or a barrel connector that accepts voltages between 7 and 20 volts, such as a rectangular 9-volt battery. It is similar to the Arduino Nano and Leonardo. The hardware reference design is distributed under a Creative Commons Attribution Share-Alike 2.5 license and is available on the Arduino website.

2. Soil Moisture Sensor

A Soil Moisture Sensor is one kind of low-cost electronic sensor that is used to detect the moisture of the soil. This sensor can measure the volumetric content of water inside the soil. This sensor consists of mainly two parts, one is Sensing Probs and another one is the Sensor Module. The probes allow the current to pass through the soil and then it gets the resistance value according to moisture value in soil. The Sensor Module reads data from the sensor probes and processes the data and converts it into a digital/analog output. So, the Soil Moisture Sensor can provide both types of output Digital output (DO) and Analog output (AO). Pin Number Pin Name Description 1 VCC +5 v power supply 2 GND Ground (-) power supply 3 DO Digital Output (0 or 1) 4 AO Analog Output (range 0 to 1023)

3. Red LED

A RED light-emitting diode (LED) is a semiconductor light source. LEDs are used as indicator lamps in many devices and are increasingly used for other lighting. When a light-emitting diode is switched on, electrons are able to recombine with holes within the device, releasing energy in the form of photons. This effect is called electroluminescence and the color of the light (corresponding to the energy of the photon) is determined by the energy band gap of the semiconductor. An LED is often small in area (less than 1 mm²), and integrated optical components may be used to shape its radiation pattern. LEDs present many advantages over incandescent light sources including lower energy consumption, longer lifetime, improved physical robustness, smaller size, and faster switching. However, LEDs powerful enough for room lighting are relatively expensive and require more precise current and heat management than compact lamp sources of comparable output.

4. Jumper wires

The term "jumper wire" simply refers to a conducting wire that establishes an electrical connection between two points in

a circuit. You can use jumper wires to modify a circuit or to diagnose problems in a circuit. A jump wire (also known as jumper, jumper wire, DuPont wire) is an electrical wire, or group of them in a cable, with a connector or pin at each end (or sometimes without them – simply "tinned"), which is normally used to interconnect the components of a breadboard or other prototype or test circuit, internally or with other equipment or components, without soldering. Individual jump wires are fitted by inserting their "end connectors" into the slots provided in a breadboard, the header connector of a circuit board, or a piece of test equipment

5. 7.4v Battery

A battery is a source of electric power consisting of one or more electrochemical cells with external connections for powering electrical devices. When a battery is supplying power, its positive terminal is the cathode and its negative terminal is the anode. The terminal marked negative is the source of electrons that will flow through an external electric circuit to the positive terminal. When a battery is connected to an external electric load, a redox reaction converts high-energy reactants to lower-energy products, and the free-energy difference is delivered to the external circuit as electrical energy. Historically the term "battery" specifically referred to a device composed of multiple cells; however, the usage has evolved to include devices composed of a single cell.

6. Buzzer

A buzzer or beeper is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric (piezo for short). Typical uses of buzzers and beepers include alarm devices, timers, and confirmation of user input such as a mouse click or keystroke. An audio signaling device like a beeper or buzzer may be electromechanical or piezoelectric or mechanical type. The main function of this is to convert the signal from audio to sound. Generally, it is powered through DC voltage and used in timers, alarm devices, printers, alarms, computers, etc. Based on the various designs, it can generate different sounds like alarm, music, bell & siren. The pin configuration of the buzzer is shown below. It includes two pins namely positive and negative. The positive terminal of this is represented with the '+' symbol or a longer terminal. This terminal is powered through 6Volts whereas the negative terminal is represented with the '-' symbol or short terminal and it is connected to the GND terminal.

6. Circuit Working

1. In our project we are going to make a model of a house.
2. When there is a flood in your residence and when the water accumulates outside the house, the buzzer installed outside the house will sound.
3. After that the person in the family will not understand that the flood has come.
4. That is, as soon as the water comes out of the house, the house will rise up and the people in the house will know that the water is coming into the house.
5. Let's say if water enters the house, then we have installed a buzzer outside the house.
6. Due to this, the members of the house will be alerted and come out of the house. And their lives will be saved.

7. Conclusion

- Remain safe from floods you need to know when and how to deal with them.
- Lives could be saved by having more warnings of floods for places in threat.
- There are things used for anti-flood protection and it makes your house, yard and much more, safe and protected when a flood arrives. They can be used over and over again.

In conclusion, the Avoid Flood Hardware Project is an innovative solution that uses technology to address the challenges of flood detection and warning. With its accuracy, durability, and ease of use, the device is a valuable addition to flood monitoring systems. The Avoid Flood Hardware Project is a hardware-based solution designed to detect and alert people about potential flood threats in their

local areas. The project uses sensors to monitor water levels in rivers, lakes, and other water bodies. It aims to provide early flood warnings to help people take preventive measures and reduce flood damages.

7. References

- Impact of Flood Control and Damage Prevention Measures on Community Resilience in Bangladesh
- Smart Technique to Prevent Flood Disaster due to High Rainfall in Coastal Areas using IoT
- Water Irrigation and Flood Prevention using IOT
- A review of the flood management: from flood control to flood resilience

Keyword:
ball,
bricks,
paddle,
Intelijeldea
Score

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Reinforcement learning utilize real task experience management policy, are typical error learning techniques. The theory is a psychological perspective exert the most control over the. The primary distinction and reinforcement learning is events that were learnt is given gradually practices and develop rewards by becoming able to action through trial and error.

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Breakout Ball Game

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Abstract

Reinforcement learning (RL) algorithms, which utilize real task experience to generate a progressive management policy, are typically referred to as trial and error learning techniques. The reinforcement learning theory is a psychological perspective on how agents might exert the most control over their environment.

The primary distinction both supervised learning and reinforcement learning is that partial feedback on the events that were learnt is given to the learner. An RL agent gradually practices and develops a strategy for long-term rewards by becoming able to map states to the best route of action through trial and error.

I. Introduction

Reinforcement learning (RL) is the name given to focus on goals algorithms that discover how to carry out a particular task or how to optimize over multiple runs along a dimension; for instance, over numerous moves, they can optimize the number of points won in a game. Under the correct situations, RL algorithms are capable of superhuman performance from a starting point.

Such algorithms are reinforced when they choose the proper course of action and penalized when they choose the wrong one, much like a pet who is encouraged through correction and punishment. When the state action space is too big to be entirely known, RL performance suffers. In order to accomplish this, we are utilizing Deep Reinforcement Learning.

Better effectiveness.

Artificial neural networks and RL architecture are combined in deep reinforcement learning, which enables software-defined agents to discover the optimum behaviors in a virtual environment to accomplish their goals. We have trained a neural network on state-action space samples to learn to decide how essential those are in relation to our goal of boosting learning instead of utilizing a lookup table to store, index, and update all conceivable states and their values, which is challenging with very large situations.

A. Basic Definitions

Understanding the notions of agent, state, action, environment, and rewards can help us better understand reinforcement learning.

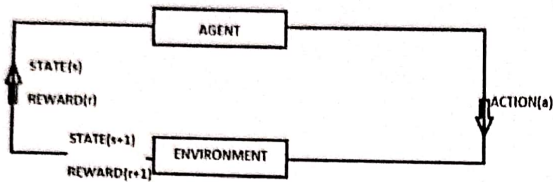


Figure 1 illustrates that the main elements of the reward learning process are the agent and the environment. An agent is a thing that acts (has a set of options for actions) in a context (a setting that the agent experiences and that reacts to it). A state is a situation that the agent is actually in right now, meaning it's a place or a point in time that determines how the agent's Q-value will change. A reward is also given to the agent, which we use to determine whether their action was successful or unsuccessful in each state, and it can be either positive or negative, which has an effect on the Q-value.

An agent responds to the environment by acting upon any given state, and the environment responds by returning the new state of the agent along with any incentives that may have been received. Rewards may be delayed or given right away.

In reality, they control the handler's behavior. Another word related to rewards is the discount factor, which can be calculated using future incentives that the agent has learned about in order to reduce the impact of such rewards on the agent's decision-making process.

Paddle acts as an agent in our bespoke breakout game setting, which also features a wall, bricks, and a ball. The agent (paddle) has three possible actions: moving the paddle left, moving the paddle right, or leaving the paddle idle. States of the game include whether it is in progress, lost, or won, as well as the ball's x and y coordinates, velocity, paddle's x position, array of the remaining bricks' coordinates, number of frames since the game began, and current score.

The items in our specially designed breakout space include a paddle, a ball, a wall, and a block made of bricks in various colors. A ball that strikes the paddle earns the agent 3 points; if it misses the paddle, the agent loses 3 points. Rewards are given to the agent in accordance with the color of the brick when a ball strikes it (blue=8, green=7, yellow=5, orange=4, red=3). Each (state, action) pair's Q-value will be given to the network, which will aid in learning. The action with the highest Q-value will be chosen to advance the game after obtaining Q-values for each unique (state, action) pair that will be kept in the network.

B. Asserting Theses

A crucial aspect of DQNs is the "memory" since, as was already mentioned, the trials are used to continuously train the model. However, we add the trials to memory and train them on a random sample of that memory rather than training on the trials as they come in.

This depreciated value for the anticipated future return of the state is reflected in the gamma factor. Value specified for but will range from 0 to 1. Since the paddle's behavior will be fully random and will eventually start to decrease with subsequent iterations, we have followed the Epsilon Greedy Search algorithm, in which the value of gamma starts out at 1 and decreases to 0.95. The DQN and DDQN algorithms will calculate the Q-value for each different (state, action) combination, and that Q-value will be utilised to determine the optimum action the paddle should do for the following state (velocity, ball coordinates).

Since the environment of Atari games is extremely uncertain when considering the states and actions connected to the environment, which makes it applicable to real-life situations, we decided to implement Deep Reinforcement Learning on Atari games.

II. PROBLEM DEFINITION

The goal of our project is to develop a virtual environment for the video game "Breakout" that can be demonstrated to be a near replication of the real-life world. The virtual environment will learn the real-life environment over time and will act accordingly. The environment must be appropriately learned in order to replicate a real-world setting and respond to changes. To do this, we will use the aforementioned Reinforcement Learning algorithms and demonstrate which one is more effective in such circumstances.

First, the issue that we looked into was reinforcement learning. A subset of machine learning called reinforcement learning is used to define and address the issue of how an agent interacts with its surroundings by developing learning techniques that maximize reward [1]. The Markov Decision Process (MDP), which is basically a process where an agent takes action to update its state to get reward and interact with environment, is a classic and standard model of reinforcement learning.

interact with your surroundings [2].

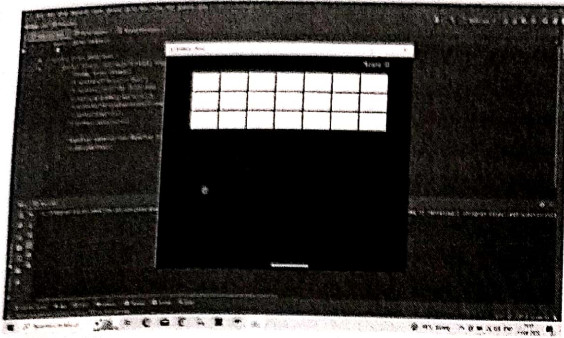
The game itself is the second issue. Our game is a parody of Breakout. A moving ball, a paddle and six rows of bricks are the game's building blocks. To hit the ball, the agent, or paddle, can move left or right. When the ball is struck, it will rebound and then smash the bricks to get the desired result. This game must be capable of responding to input and moving on to the following frame. If the ball is missed the game will finish, and the ball and paddle will then be placed back in their original locations.

After the ball touches the bricks, they will vanish. The ball and paddle are first positioned, and all six rows of bricks are loaded, at the start of the game. The total number of bricks damaged, the number of times the ball was missed and the hit rate of the ball are all displayed in the game.

The third issue is to construct a network structure that compares DQN with DDQN in terms of reward acquisition

loss at each epoch, and hit rate in our simulated Breakout environment in order to determine which method works better.

Design of Gui



III RELATED RESEARCH WORK

The introduction of TD-gammon can be traced back to reinforcement learning. In 1992, IBM researcher Gerald Tesauro created an algorithm called TD-Gammon that specializes in playing backgammon and uses time difference learning and neural networks.

A three-layer neural network is used in TD-gammon. There are 40–80 neurons in the middle hidden layer, and 198 units serve as the input representation for the backgammon position. An estimation of the value function is the output's neural form [3]. A multi-layer perceptron with one hidden layer was employed by TD-gammon to approximate the value function using a model-free reinforcement learning approach similar to Q-learning.

There was an accepted belief that the TD-gammon strategy only worked in backgammon as a result of the less successful attempts to implement TD-gammon into various other games. This might be the case because the value function is especially smooth thanks to the dice's randomization, which also aids in exploring the state space.

Series of studies [5] proposed the pairing of deep learning reinforcement learning methods, mostly using Q-learning. The deep reinforcement learning methodology has been shown to successfully handle difficult problems because it can learn from data at different levels of features, in contrast to previous reward learning approaches that relied on feature selection. Mnih was able to successfully train a deep RL agent using inputs with thousands of pixels from visual images. Through this method, it was able to play Atari games, play Alpha Go, and other games beyond the capabilities of humans.

The Deep Q network not only simulates human-like performance when playing Atari games by processing raw data using artificial neural networks. Later research by Hassel [7] enhanced the system by using double Q-Learning, which reduces overestimation and produces estimates that are more accurate.

Researchers showed that the deep Network agent has been able to surpass the efficiency of all prior algorithms and achieve a level equivalent to that of a skilled human games using the same algorithm, network architecture, and

hyper parameters across a variety of 49 different games in the paper "Human-level control through deep reinforcement learning" [5].

IV. METHODOLOGY

We chose to build our own environment to train the agent in, which imitates the environment of the OpenAI Atari game Breakout-ram-v0, in order to compare the performance of the AI agent in playing the breakout game based on different algorithms. Following environment setup, we constructed the networks for the DQN and Double DQN algorithms. These are the precise steps:

- 1) Setting up the Breakout environment, which includes the background, the paddle and the ball, defining bricks, controlling paddle movement, handling collisions, updating state and environment, and using turtle library, a Python graphics library that can be used to create a variety of objects and shapes and give them animations using the penup() function by varying the speed during object creation.
- 2) We have defined separate functions to define bricks, control paddle movement, handle collisions, update state and environment, and reset the environment if the paddle misses the ball. Other functions include next iteration(), which computes the parameters for the next state, move positive x(), which moves the paddle to the right, and move negative x(), which moves the paddle to the left.
- 3) Using the Breakout environment, create the DQN and Double DQN algorithms and tune hyper-parameters (such as the discount factor gamma, learning rate, and epsilon). employing software libraries such as random, numpy, keras, collections, matplotlib, and others.

V Acknowledgement

The professors in communication Jessie Stick gold-Sarah and Michael Trice, the TAs Devon Roster, Rishi Naidu, Pranav Kaundinya, and Luis Fernandez, as well as Prof. Gim Hom for his guidance and assistance during the semester are all acknowledged by Jemale and Jonathan.

The authors appreciate the crucial support and direction provided by their project's directors, Alessio Russo and Dominos Tranos.

VI Conclusion

In summary, both Deep Q-learning and Double Deep Q-learning models performed better in terms of hit-rate when the game was run for the training phase using the hyper-parameters listed in Table III. This is shown in Figure 9. The ratio of the number of times the ball strikes the paddle to the total of the number of times the ball strikes the paddle and the number of times the ball misses the paddle, for the specified number of episodes, in this case 100, is the hit rate.

In order to replicate the outcome from [5], we construct a reinforcement learning algorithm in this paper. After some practice, our agent becomes just as good at Breakout as the

average person, scoring an average of 20 as opposed to the human score of 31, and achieving a score of 168.

We explore and assign a few likely causes—most notably uncertainties in the network setup of [5]—to this disparity. An iterative and experimental method was not feasible due to the significant computational burden of training the agent.

Finally, we talk about potential enhancements that could be made to the agent. We outline many potential methods from current research: Q-learning twice, experience prioritized

Reference

1. The Use of Reinforcement Learning in Gaming: The Breakout Game Case Study
2. Improved robustness of reinforcement learning policies upon conversion to spiking neuronal network platforms applied to Atari Breakout game
3. A Cooperative Breakout Game
4. Game design research
5. Breakout ball game using Java

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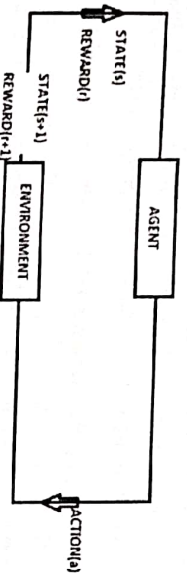


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Since the environment of Atari games is extremely uncertain when considering the states and actions connected to the environment, which makes it applicable to real-life situations, we decided to implement Deep Reinforcement Learning on Atari games.

II. PROBLEM DEFINITION

The goal of our project is to develop a virtual environment for the video game "Breakout" that can be demonstrated to be a near replication of the real-life world. The virtual environment will learn the real-life environment over time and will act accordingly. The environment must be appropriately learned in order to replicate a real-world setting and respond to changes. To do this, we will use the aforementioned Reinforcement Learning algorithms and demonstrate which one is more effective in such circumstances.

First, the issue that we looked into was reinforcement learning. A subset of machine learning called reinforcement learning is used to define and address the issue of how an agent interacts with its surroundings by developing learning techniques that maximize reward [1]. The Markov Decision Process (MDP), which is basically a process where an agent takes action to update its state to get reward and interact with environment, is a classic and standard model of reinforcement learning.

interact with your surroundings [2].

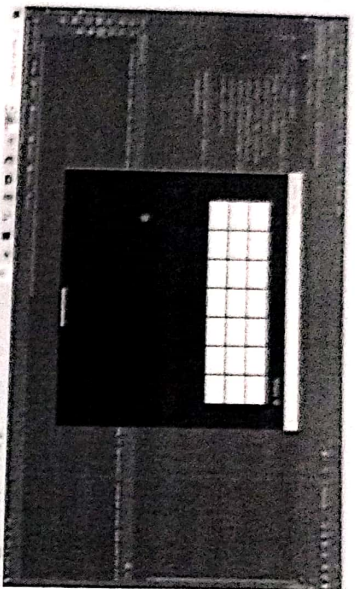
The game itself is the second issue. Our game is a parody of Breakout. A moving ball, a paddle and six rows of bricks are the game's building blocks. To hit the ball, the agent, or paddle, can move left or right. When the ball is struck, it will rebound and then smash the bricks to get the desired result. This game must be capable of responding to input and moving on to the following frame. If the ball is missed, the game will finish, and the ball and paddle will then be placed back in their original locations.

After the ball touches the bricks, they will vanish. The ball and paddle are first positioned, and all six rows of bricks are loaded, at the start of the game. The total number of bricks damaged, the number of times the ball was missed, and the hit rate of the ball are all displayed in the game.

The third issue is to construct a network structure that compares DQN with DDQN in terms of reward acquisition,

loss at each epoch, and hit rate in our simulated Breakout environment in order to determine which method works better.

Design of Gail



III RELATED RESEARCH WORK

The introduction of TD-gammon can be traced back to reinforcement learning. In 1992, IBM researcher Gerald Tesauro created an algorithm called TD-Gammon that specializes in playing backgammon and uses time difference learning and neural networks.

A three-layer neural network is used in TD-gammon. There are 40–80 neurons in the middle hidden layer, and 198 units serve as the input representation for the backgammon position. An estimation of the value function is the output's final form [3]. A multi-layer perceptron with one hidden layer was employed by TD-gammon to approximate the value function using a model-free reinforcement learning approach similar to Q-learning.

There was an accepted belief that the TD-gammon strategy only worked in backgammon as a result of the less board games. This might be the case because the value function is especially smooth thanks to the dice's randomization, which also aids in exploring the state space.

A series of studies [5] proposed the pairing of deep learning and reinforcement learning methods, mostly using Q learning. The deep reinforcement learning methodology was shown to successfully handle difficult problems because it can learn from data at different levels of features, in contrast to previous reward learning approaches that struggled with feature selection. Mnih was able to successfully train a deep RL agent using inputs with thousands of pixels from visual images. Through this method, it was able to play Atari games, play Alpha Go, and other games beyond the capabilities of humans.

Mnih's Deep Q network bot simulates human-like performance when playing Atari games by processing sensory data using artificial neural networks. Later research by Van Hassel [7] enhanced the system by using double deep Q-learning, which reduces overestimation and produces estimates that are more accurate.

Researchers showed that the deep Network agent has been able to surpass the efficiency of all prior algorithms and reach a level equivalent to that of a skilled human games tester using the same algorithm, network architecture, and

hyper parameters across a variety of 49 different games. The paper "Human-level control through deep reinforcement learning" [5].

IV. METHODOLOGY

We chose to build our own environment to train the game Breakout-ram-v0, in order to compare the performance of the AI agent in playing the game based on different algorithms. Following the breakout setup, we constructed the networks for the Double DQN algorithms. These are the precise steps:

- 1) Setting up the Breakout environment, which includes the background, the paddle and the ball, the bricks, controlling paddle movement, the collisions, updating state and environment, the turtle library, a Python graphics library that is used to create a variety of objects and shapes and them animations using the penup() function by the speed during object creation.
- 2) We have defined separate functions to define the control paddle movement, handle collisions, the state and environment, and reset the environment, the paddle misses the ball. Other functions include iteration(), which computes the parameters for the state, move positive x(), which moves the paddle to the right, and move negative x(), which moves the paddle to the left.
- 3) Using the Breakout environment, create the Double DQN algorithms and tune the parameters (such as the discount factor γ , learning rate, and epsilon), employing software libraries such as random, numpy, keras, collections, and others.

V Acknowledgement

The professors in communication Jessic Stick gold-Sa and Michael Trice, the TAs Devon Roster, Rishi Naid Pranav Kaundinya, and Luis Fernandez, as well as Pro Gim Hon for his guidance and assistance during the semester are all acknowledged by Jemal and Jonathan. The authors appreciate the crucial support and direction provided by their project's directors, Alessio Russo and Dominos Tranos.

VI Conclusion

In summary, both Deep Q-learning and Double DQN learning models performed better in terms of hit-rate the game was run for the training phase using the parameters listed in Table III. This is shown in Fig. The ratio of the number of times the ball strikes the paddle to the total of the number of times the ball strike paddle and the number of times the ball misses the paddle for the specified number of episodes, in this case 100, hit rate.

In order to replicate the outcome from [5], we constructed reinforcement learning algorithm in this paper. After practice, our agent becomes just as good at Breakout as

average person, scoring an average of 20 as opposed to the human score of 31, and achieving a score of 168.

We explore and assign a few likely causes—most notably uncertainties in the network setup of [5]—to this disparity. An iterative and experimental method was not feasible due to the significant computational burden of training the agent.

Finally, we talk about potential enhancements that could be made to the agent. We outline many potential methods from current research: Q-learning twice, experience prioritized

Reference

1. The Use of Reinforcement Learning in Gaming: The Breakout Game Case Study
2. Improved robustness of reinforcement learning policies upon conversion to spiking neuronal network platforms applied to Atari Breakout game
3. A Cooperative Breakout Game
4. Game design research
5. Breakout ball game using Java

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KEYSPELLS HUMAN COMPUTER INTERACTION EMULATION USING CUSTOM HAND GESTURE RECOGNITION

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ABSTRACT

This paper introduces KeySpells, a software programme created to simulate human-computer interaction through personalised hand gesture detection. Accurate hand gesture recognition is playing a significant role in the field of human computer interaction[1]. With KeySpells, users may teach an AI model using custom hand gestures that are then translated into keyboard commands. Input from the user is captured using a webcam, and the Mediapipe library is used to identify the hand and create a skeleton. With a focus on users with impairments or those who prefer gesture-based control, this research aims to offer an alternate computer interaction approach that is simple to use and convenient. Results show that the programme is proficient at decoding unique gestures and translating them to certain keyboard commands. KeySpells may be used to improve accessibility and user experience in a number of computer-based operations, according to interpretation and conclusion. Overall, KeySpells shows how custom hand gesture recognition has the potential to be a simple and effective means of human-computer interaction.

Keywords: KeySpells, Human-computer interaction, Personalized hand gesture detection, AI model, Accessibility, User experience.

I. INTRODUCTION

Gesture-controlled laptops and computers have recently gained a lot of traction[2]. KeySpells is a software that empowers its users to create personalized hand gestures and assign them to specific keyboard actions, resulting in increased productivity and streamlined workflows. By utilizing a webcam and the Mediapipe library, KeySpells can detect and classify hand gestures, allowing for a wide range of potential applications, including assisting people with disabilities and reducing the risk of repetitive strain injuries associated with typing. Hand gesture recognition technology has generated interest in various fields, such as human-computer interaction, virtual reality, and gaming. In this article, we will provide an overview of KeySpells' features and capabilities to enhance your workflow.

II. METHODOLOGY

Method and analysis which is performed in your research work should be written in this section. A simple strategy to follow is to use keywords from your title in first few sentences. KeySpells is a software application designed to enable human-computer interaction through personalized hand gesture detection. The application uses Mediapipe, a framework developed by Google for building multimedia pipelines, to detect the hands. The hand landmark detection process within KeySpells is accomplished by utilizing a convolutional neural network (CNN) model to detect the palm and then cropping it from the image. After the palm is detected, a much smaller, simpler model is run to extract the hand landmarks from the cropped frame. The extracted hand landmarks, along with their corresponding gesture label, are stored in a file. Subsequently, a final model is trained using this data to recognize the gestures. The CNN model used in KeySpells to detect the palm is based on a deep learning architecture that has been trained on a large dataset of real-world images, along with several synthetic hand models. This model is capable of detecting the location of the palm with a high degree of accuracy, which enables the software to crop the image around the hand region.

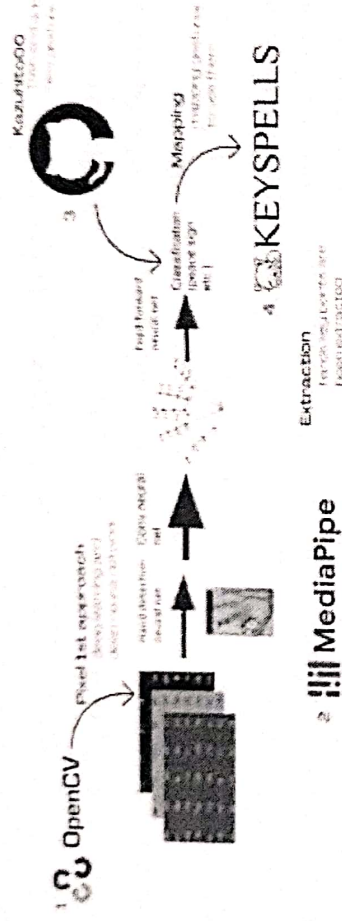


Figure 1: KeySpells Architecture

Once the hand region has been cropped, the hand landmarks detection model is applied to extract the coordinates of 21 key points on the hand, which represent the landmarks. These points are then used to generate a hand skeleton that can be used to recognize custom hand gestures. The extracted hand landmarks are stored in a file along with their corresponding gesture label. The gesture label represents the action that the gesture is intended to trigger, such as scrolling or clicking. Finally, a gesture recognition model is trained using this data to recognize the gestures. Overall, KeySpells utilizes advanced machine learning techniques and Mediapipe to detect and recognize custom hand gestures, thereby enabling a simple and effective means of human-computer interaction.

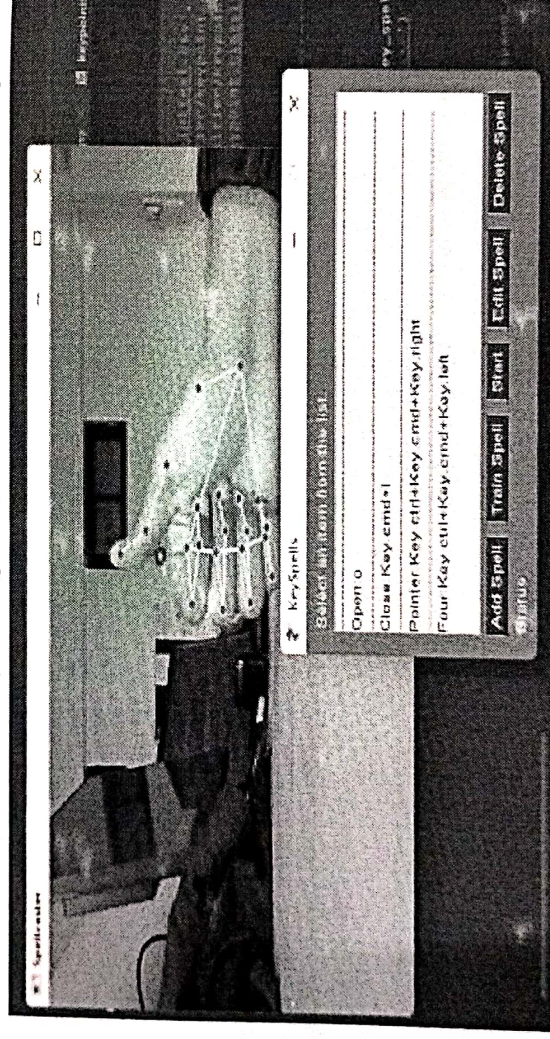


Figure 2: KeySpells User Interface

III. CONCLUSION

Since the traditional human computer interactive way may become a bottleneck in the effective utilization of available information, people have been pursuing a new efficient and natural way to substitute for it [3]. In conclusion, KeySpells is a promising software application that uses custom hand gestures to enable human-computer interaction. The application utilizes state-of-the-art machine learning techniques, such as convolutional neural networks, to detect and recognize custom hand gestures. The hand landmark detection process is achieved by using Mediapipe, a popular multimedia framework developed by Google, to detect the hands and extract the hand landmarks. The results of our study show that KeySpells is proficient in detecting and recognizing custom hand gestures with a high degree of accuracy. The software has the potential to significantly improve accessibility and user experience for individuals with physical impairments or those who prefer gesture-based control. The ability to customize the gestures and map them to keyboard actions enables users to tailor the software to their specific needs and preferences.

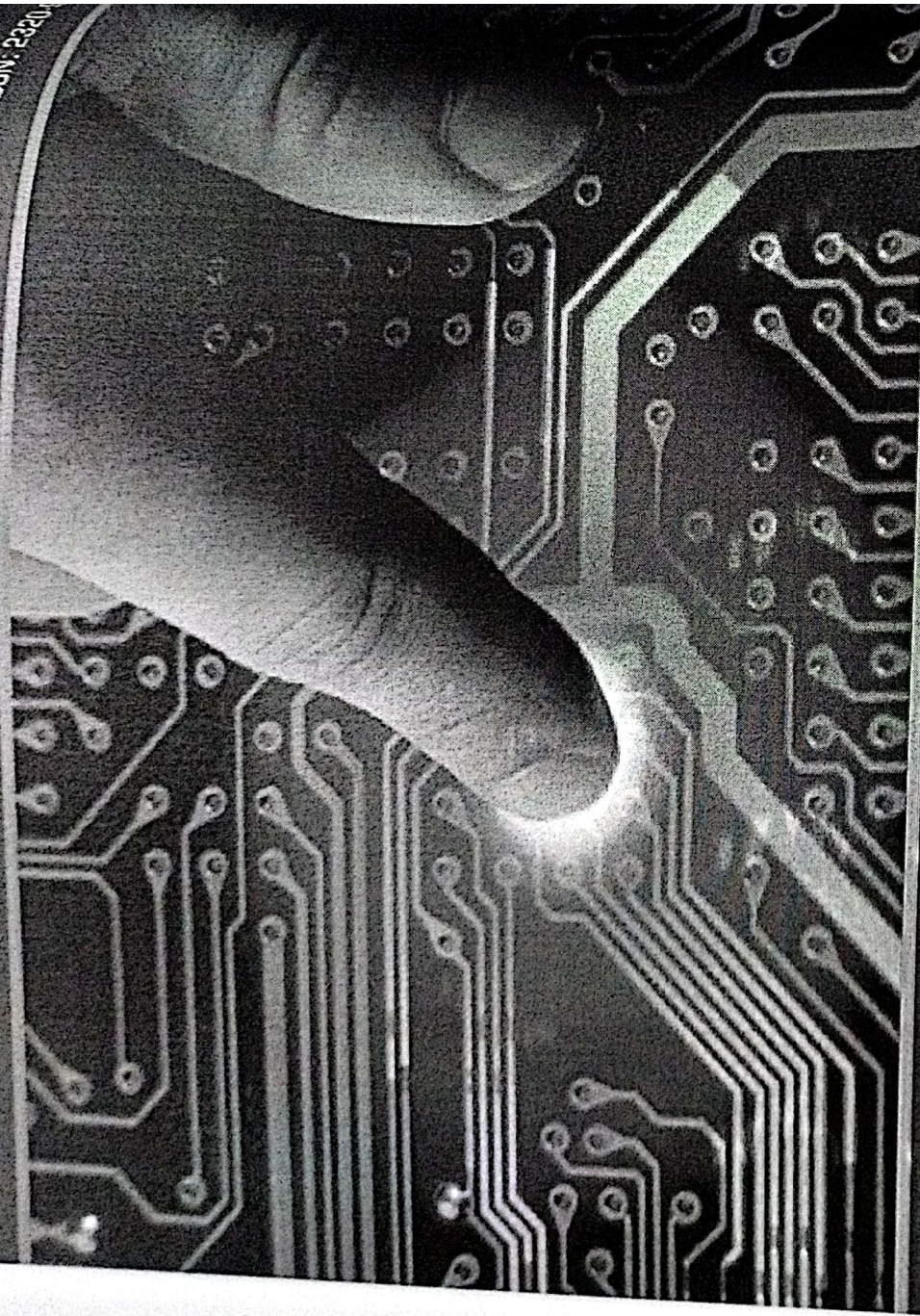
IV. REFERENCES

- [1] Jiaqing Liu; Kotaro Furusawa; Tomoko Tateyama; Yutaro Iwamoto; Yen-Wei Chen, "An Improved Hand Gesture Recognition with Two-Stage Convolution Neural Networks Using a Hand Color Image and its Pseudo-Depth Image"
- [2] Roshnee Matlani; Roshan Dadlani; Sharv Dumbre; Shruti Mishra; Abha Tewari, "Virtual Mouse using Hand Gestures"
- [3] V.I. Pavlovic, R Sharma, T.S. Huang, "Visual interpretation of hand gestures for human-computer interaction: a review"



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IOT-Based ECG Monitoring System

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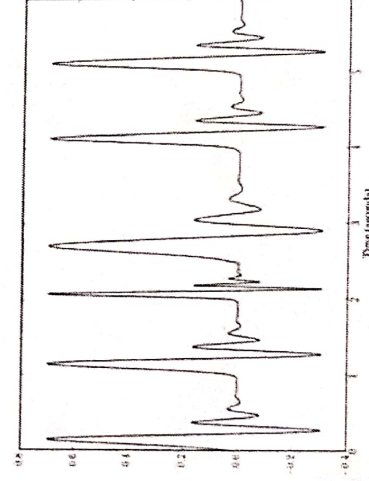
Student, Computer Department, Marathwada Mitra Mandal Polytechnic, Thergoan, Pune, India

ABSTRACT: An electrocardiogram is usually used to determine heart-related activities. Heart-related issues are increasing day by day a sudden or unexpected death of people are occurring. By using this health monitoring we can suddenly find out the malfunction conditions of the heart. Nowadays Distance between the doctor and patients is the main barrier which causing the trouble with health examine . So this Iot based project will be helpful to examine or to determine the electrical activities of the heart. So we are using Arduino Nano Noard and ECG sensor

KEYWORDS: Electrocardiogram , Arduionano ,Ecg Sensor

I. INTRODUCTION

Heart Disease is the term that includes types of heart-related problem. Heart Disease is the leading problem all over the world. This Heart disease affects the heart and blood vessels of the human being .The heart disease are increasing rapidly. Word Health Organization also research and shows that most of elder and older people are dying due to this problem . The heart disease may be increases due to unhealthy food , smoking , high blood pressure ,lack of exercise and more things are affecting . So we cannot take this problem lightly . Day by day this problem is increasing and most of them are affect by this .To overcome this issues most of health monitoring system are available but by using ECG signal it will become easy to prevented this problem .An electrodiogram is also known as ECG or EKG it simple use to record the heart activity This ECG technique is commonly painless and easy to detect the heart related problem.Ecg machine are often use in hospital or clinic room . Now this IOT based system will simple record the activity within our heart .Through its electrical properties we will get information of the intracardiac conducting tissue and reflects the cardiac disease if it is present . An electrode sensor will attach to the body to record the activity . This electrodes of ecg sensor will helps us to conversion of heart beat to signal which is electric signal . This sensor are where light weight and easy to use . This electrical signal or activity of the patient will be display on the monitor screen.



II.MOTIVATION

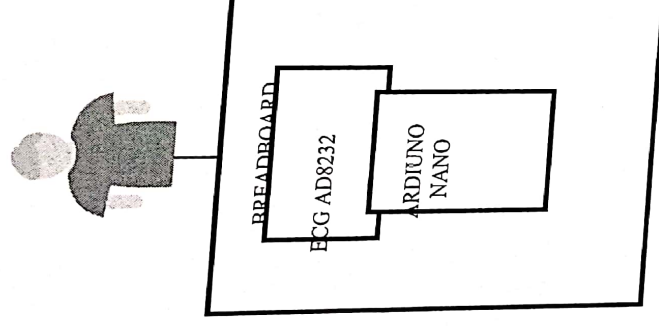
Traditional Ecg machine was very large and stationary equipment in professional medical institution's. This kind of machine usually requires twelve electrodes to collect the ECG data . Moreover, these devices are more expensive for home use, and that's why patients would be frequently visiting the hospital. So our main goal is to develop and to provide maximum convenience to patient during ECG Measurement. There will be three electrodes use in this system which will use to measure the heart rate of patients and that will display on the screen or monitor of system. It will require a short time to display the result on the screen.

III SYSTEM DESCRIPTION

The Complete information of the proposed system will be explained below. Figure 1 is the block diagram of the system which will tell the whole flow or working of the system. The components used in the ECG system will be divided in two parts : Hardware part and Software part.

Now we will give the briefly information of each components use in this system and also the working of the System. Now following figure is giving the or showing the architecture of Iot Based ECG Monitoring system. The components used in this system is Arduino Nano , C++ Language and ECG AD8232 Sensor.

PATIENT



1 . ECG AD8232 Sensor

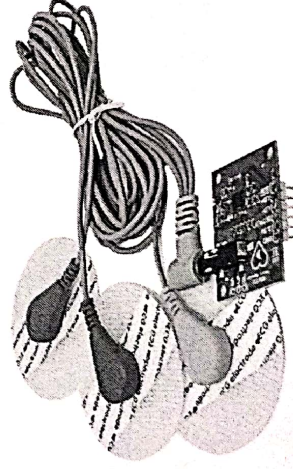


Figure - 2

The AD8232 sensor is the little chip which will be used to measure the electrical signal . The electrical activity will be chart on the monitor in form of analog signal . This AD8232 will be the easy way to obtain the clear signal from the PK and

QR intervals . It is the integrated signal conditioning block for the ECG . The AD8232 module as nine connections from the IC that is been solder , pins , wires or the other connector to SDN , LO + , LO - , OUTPUT , 303V , and GND provides essential pins on the breadboard. Also, it provides the Right Arm, left Arm, and Right leg. This AD8232 ECG sensor is commonly used and it is easy available and affordable component . This is three lead module other ECG module requires or have five and ten leads Placing the electrodes on a body is show by following figure - 2

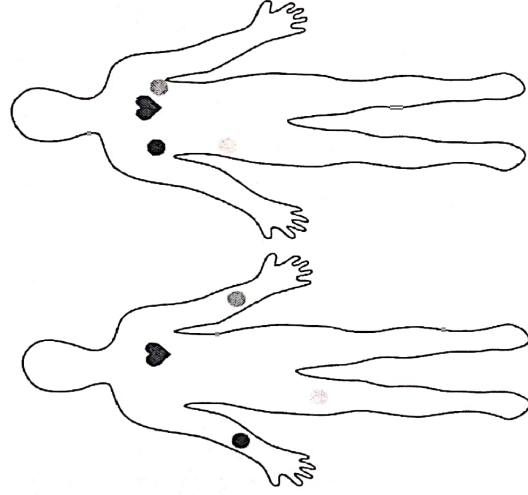


Figure – 3

2 . Arduino Nano

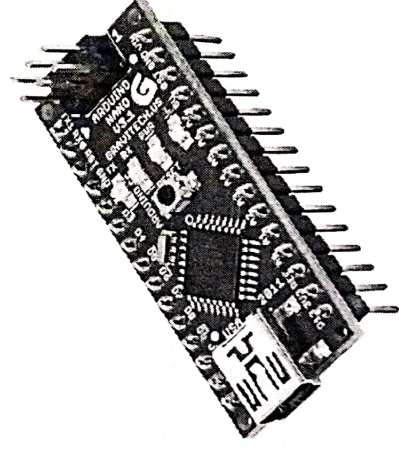


Figure - 4

The Arduino Nano is a small board which is based on ATmega328P Microcontroller . Its connectivity is same like the Arduino Uno . Its size is small compared to the Arduino Uno . It is organized by the Arduino (IDE) , which can be run on any platforms . The Arduino (IDE) is need to be install on the Laptop or Desktop to upload the code from Computer to board of Arduino Nano Board . The Arduino Nano includes an I/O pins and set of 14 digital pins and 8 analog pins. It also includes 6 power pins and two reset pins .

Now , programming for Arduionano we will use Arduino IDE software this program will runs both online and offline. To run it this Arduino IDE should be install on your computer device or we can say on your desktop . Then we need USB Cable to connect the Arduionano board to the desktop . The Serial monitor is added to the Arduino IDE which will be used to transmit the textual data to or from the board . This Arduino is software will be used for carrying out serial communication between the computer and board . A part from

serial communication, this board also support the I2c and spi communication. The wire library inside this software used to support the I2C bus.

II. PSEUDO CODE

- Step 1 : Step 1 is to place the electrodes on the patient .
- Step 2 : Once the electrodes is place on patient body the AD8232 will convert the electrical signal into analog output
- Step 3 : Then upload the code to arduino .
- Step 4 : Start the serial monitor on Arduino IDE Software .
- Step 5 : It start to show the eeg waves of the patient to whom the electrodes is attach .
- Step 6 : This become easy for the doctor to detect the disease and prevent those disease .

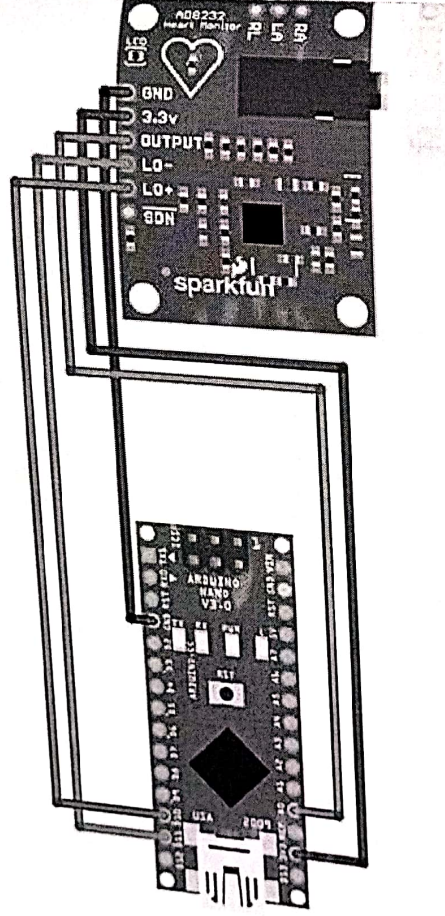


Fig. ECG Monitoring system Circuit Diagram

III. SIMULATION RESULTS

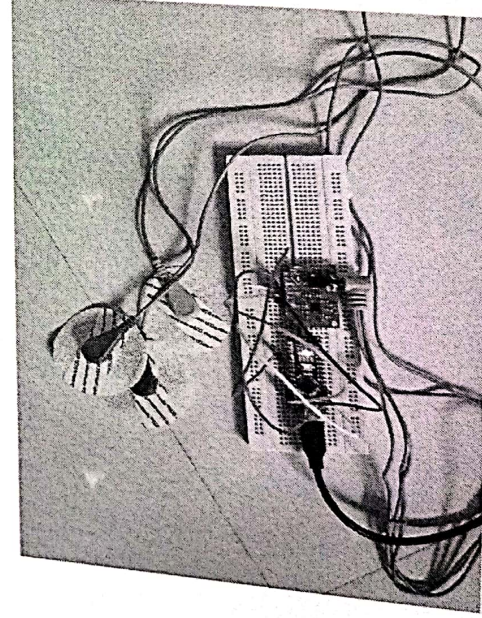


Figure - 5

This is the ECG Monitoring system connection between the electrodes and arduino nano board as show in Figure – 5 and this hardware is connected to desktop by using the USB Cable . Also the data received by the System is show in figure – 6

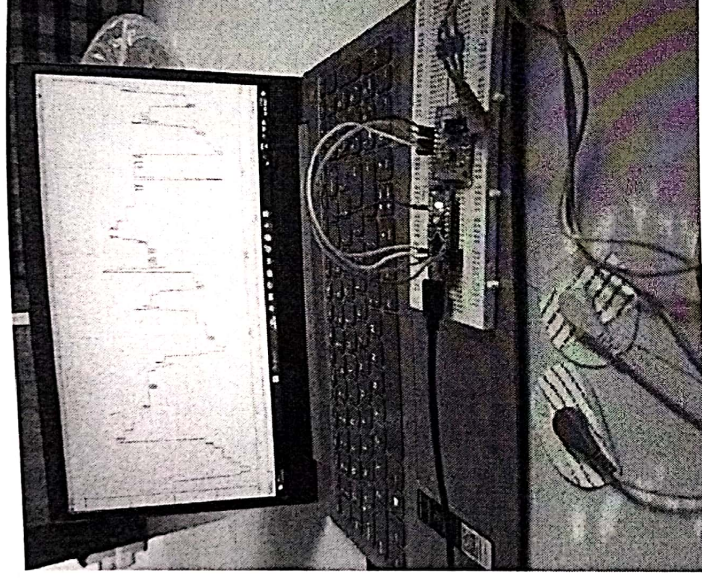


Figure - 6

IV. CONCLUSION AND FUTURE WORK

This paper show the working and the implementation of ECG Monitoring system and also its measure the heart of the patient and also this system is beneficial for the patient and act as the virtual Doctor for the patient . With use of device patient can regularly measure there Ecg and avoid the regularly visiting to the Hospital . And also this device is low cost , time saving and easy to use . More modification can be done in this system and more accuracy will be build . Then we can also use wireless system to measure the heart rate also we can use the finger tip rather than using the electrodes . Also more update we be in system we can measure plus , temperature and BP .

REFERENCES

- Chai, J. (n.d.). The design of mobile ECG monitoring system. Retrieved from <https://ieeexplore.ieee.org/document/6835474/authors>.
- Mohamed Adel Serhani I, H. T. (n.d.). ECG Monitoring Systems: Review, Architecture, Processes, and Key Challenges. Retrieved from PMC article: <https://pubmed.ncbi.nlm.nih.gov/32213969/>.
- Ozkan, H., Ozhan, O., Karadana, Y., Guleu, M., Macit, S., & Husain, F. (2019, 03 20). A Portable Wearable Tele-ECG Monitoring System. Retrieved from <https://ieeexplore.ieee.org/document/8672078>.
- J Wang, J. J. (2022, 03 30). Design of Portable ECG Monitoring System Based on STM32 Single Chip Microcomputer. Retrieved from https://link.springer.com/chapter/10.1007/978-981-19-0390-8_40
- Chhabra*, M. (2017, 8). Real Time ECG monitoring system based on Internet of. Retrieved from <https://www.ijstrp.org/research-paper-0817/ijstrp-p6865.pdf>
- Kristine Joyce P. Ortiz*, J. P. (2020, 02 28). IoT: Electrocardiogram (ECG) Monitoring System. Retrieved from Indonesian Journal of Electrical Engineering and Computer Science: IoT Electrocardiogram_ECG_Monitoring_System
- Mohamed Adel Serhani I, * T. (2023, 03 24). ECG Monitoring Systems: Review, Architecture, Processes, and



- Key Challenges. Retrieved from <https://www.mdpi.com/1424-8220/20/6/1796>
6. Wang, J. J. (n.d.). Design of Portable ECG Monitoring System Based on STM32 Single Chip Microcomputer. Retrieved from https://link.springer.com/chapter/10.1007/978-981-19-0386-1_17
 7. Somkuwar2, P. N. (n.d.). IOT-BASED PORTABLE ECG MONITORING SYSTEM. Retrieved from <https://www.ijarst.in/public/uploads/paper/952051625312480.pdf>



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HAND GESTURE RECOGNITION USING PYTHON AND OPEN

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ABSTRACT

Hand gesture recognition is one of the system that can detect the gesture of hand in a real time video. The gesture of hand is classify within a certain area of interest. In this study, designing of the hand gesture recognition is one of the complicated job that involves two major problem. Firstly is the detection of hand. Another problem is to create the sign that is suitable to be used for one hand in a time. This project concentrates on how a system could detect, recognize and interpret the hand gesture recognition through computer vision with the challenging factors which variability in pose, orientation, location and scale. To perform well for developing this project, different types of gestures such as numbers and sign languages need to be created in this system. The image taken from the real time video is analysed via Haar-cascaded Classifier to the gesture of hand before the image processing is done or in the other word to detect the

appearance of hand in a frame. In project, the detection of hand will be using the theories of Region of Interest (ROI) via Python programming. explanation of the results will be found on the simulation part since the difficulty for the hardware implementation source code to read the real-time video. The developing of hand gesture recognition using Python and OpenCV can be implemented by applying theories of hand segmentation and hand detection system which use the cascade classifier.

INTRODUCTION

In a day-to-day life, hand gesture recognition is one of the system that detect the gesture of hand in a real time video. The gesture of hand is classified within a certain area of interest. Designing a system for hand gesture recognition is one of the goal of achieving the objective

this project. The task of recognizing hand gestures is one of the main and important issues in computer vision.

With the latest advances in information and media technology, human computer interaction (HCI) systems that involve hand processing tasks such as hand detection and hand gesture recognition.

The first step in any hand processing system is to detect and locate the hand in the real-time video from the webcam. In the process of detection of hand, according to hand gesture recognition generally involves multiple levels such as image acquisition, pre-processing, feature extraction and gesture recognition. Image acquisition involve capturing image in the video frame by frame using a webcam. This study comprises on how to implement a complete system that can detect, recognizing and interpreting the hand by using Python and OpenCV in any intensity of light, pose or orientation of hand.

REQUIREMENTS

Python – 3.x (we used Python 3.8.8 in this project)

2. OpenCV – 4.5

Run “pip install opencv-python” to install OpenCV.

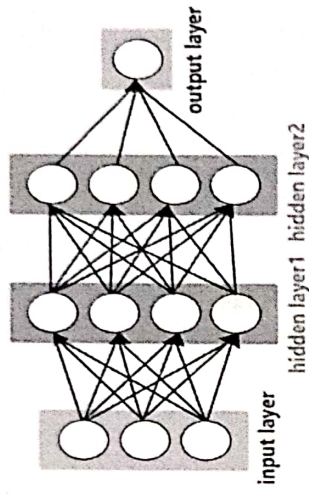
3. MediaPipe – 0.8.5

Run “pip install mediapipe” to install MediaPipe.

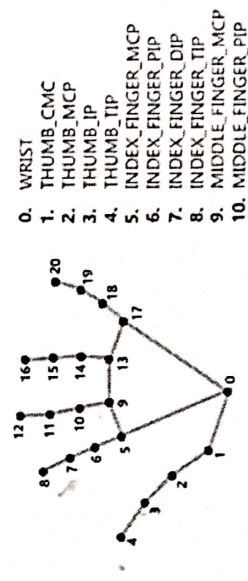
4. Tensorflow – 2.5.0

Run “pip install tensorflow” to install the tensorflow module.

5. Numpy – 1.19.3



We’ll first use MediaPipe to recognize the hand and the hand key points. MediaPipe returns a total of 21 key points for each detected hand.



Steps to solve the project:

- Import necessary packages.
- Initialize models.
- Read frames from a webcam.
- Detect hand keypoints.
- Recognize hand gestures.

ACKNOWLEDGEMENT

Perseverance, Inspiration &

Motivation have always played a key role in the success of any venture.

At this level of understanding it is difficult to understand the wide spectrum of knowledge without proper guidance and advice, Hence we take this o to express our sincere gratitude to our respected Project Guide who as a guide evolved an interest in us to work and select an entirely new idea for project work. He has been keenly co-operative and helpful to us in sorting out all the difficulties.

My deep sense of gratitude to Matrathwada MitraMandal's Polytechnic for their timely advice and encouragement in our project development.

I would also thank my Institution and my faculty members without whom this project would have been a distant reality.

CONCLUSION

As a conclusion based on the result of the project, it can be seen that developing the hand gesture recognition using Python and OpenCV can be implemented by applying the theories of hand segmentation and the hand detection system which use the Haar-cascade classifier. To summarize it, this system has accomplished several objective in this project manage to establish a complete system for detecting, recognizing

and interpreting hand gesture recognition through computer vision using Python, OpenCV, and able to create the number and sign languages of hand gesture shown in the system that will meets the name of the project.

REFERENCES

- [1] M. M. Roomi, R. J. Priya, and H. Jayalakshmi 2014 Hand Gesture Recognition for Human-Computer Interaction (J. Comput. Science vol. 6) no. 9 pp. 1002-1008.
- [2] S. N. Karishma and V. Lathasree 2014 Fusion of Skin Color Detection and Background Subtraction for Hand Gesture Segmentation (International Journal of Engineering Research & Technology) vol. 3 no 1 pp 13-18.
- [3] A. Dhawan and V. Honrao 2013 Implementation of Hand Detection based Techniques for Human-Computer Interaction (International Journal of Computer Applications) vol. 72 no. 17 pp 6- 13
- [4] C. Von Hardenberg and F. Bérard 2001 Bare hand human-computer interaction (Proceedings of the workshop on Perceptive user interfaces) pp 1-8.
- [5] K. Nickel and R. Stiefelwagen 2007 Recognition of pointing gestures for human-robot interaction (Proceedings of the 2007 IEEE International Conference on Robotics and Automation) pp 1-6.



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EV24 Chat Bot Using Python

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ABSTRACT: In recent years, the use of electric vehicles (EVs) has been on the rise. However, the adoption of EVs has been slow due to various factors, one of which is the lack of infrastructure such as charging points and service centers. To address this issue, an EV chatbot has been developed using Python programming language. The chatbot has been designed to assist EV drivers by providing them with useful information on their journeys.

The EV chatbot has several features that make it a valuable tool for EV drivers. One of these features is the ability to show nearby charging points. The chatbot uses location data to identify the nearest charging points and provides the driver with directions on how to get there. This feature helps to reduce the anxiety that EV drivers may feel about running out of battery power.

Another useful feature of the EV chatbot is the ability to show nearby service centers. The chatbot provides drivers with information on the closest service centers and their contact details. This feature helps drivers to quickly and easily find assistance in case of any issues with their EVs.

In addition to charging points and service centers, the EV chatbot also provides information on emergency services. In the event of an accident or breakdown, the chatbot can provide drivers with information on nearby hospitals, police stations, and towing services.

The chatbot has been designed to be easy to use and accessible to all EV drivers. It can be accessed through various platforms, including websites, social media platforms, and messaging apps. The chatbot also has a simple and intuitive interface that allows drivers to quickly access the information they need.

I. INTRODUCTION

The EV chat bot in python is an ai-based conversational program designed to provide assistance and answer questions related to electric vehicles. One of the key features of this chatbot is its ability to show nearby charging points, service stations, and emergency numbers.

The EV chat bot uses gps location tracking to determine the user's location and then provides information about nearby charging stations, service stations, and emergency numbers. Users can ask the bot for information on charging stations within a specified radius, and the bot will provide them with a list of the nearest available charging points.

In addition to providing information about charging stations, the EV chat bot can also provide information about nearby service stations. If the user needs assistance with their electric vehicle, they can ask the bot for information on nearby service stations. The bot will provide them with a list of the nearest available service stations, along with contact information.

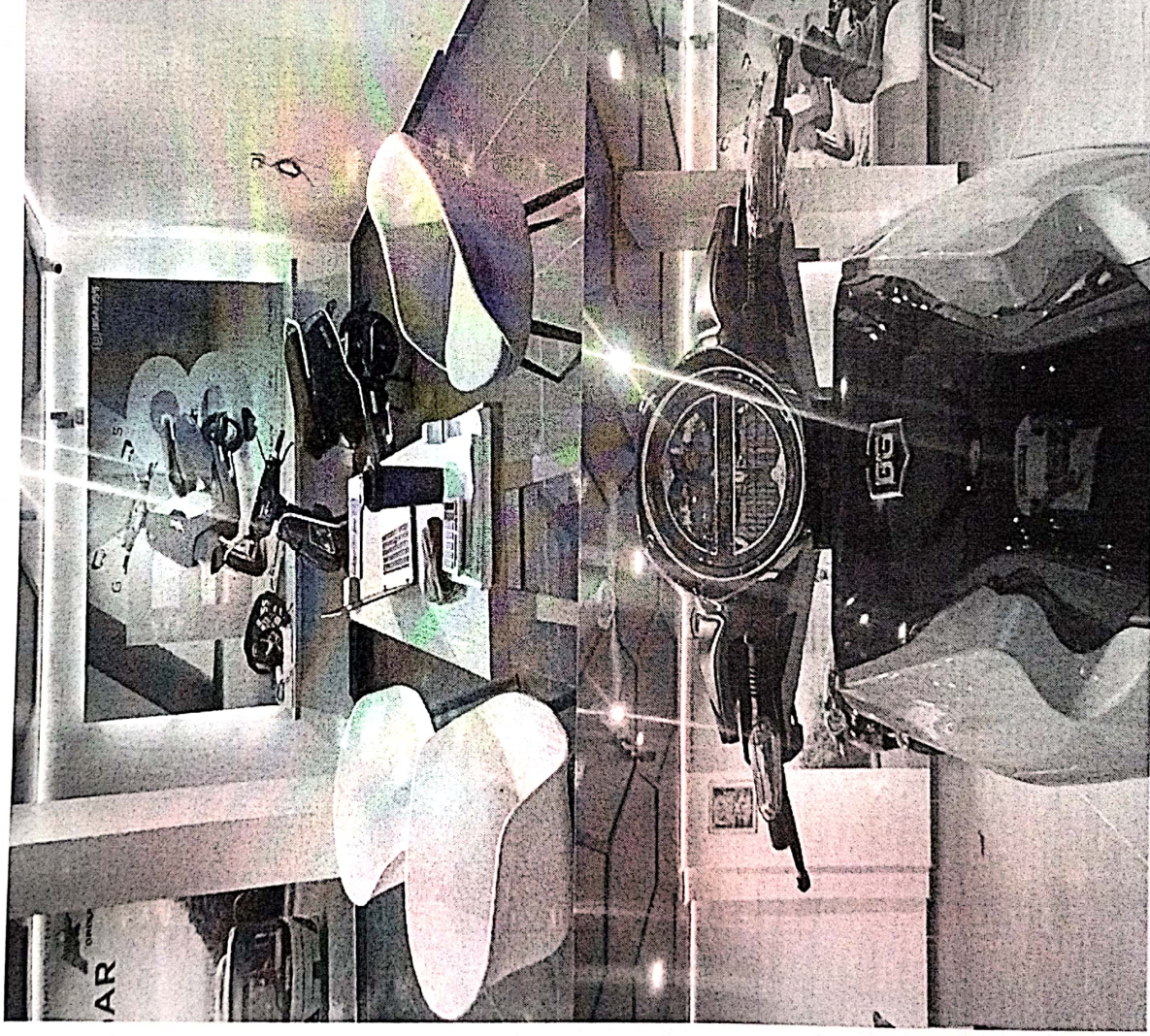
Another important feature of the EV chat bot is its ability to provide emergency numbers. If the user is in an emergency, they can ask the bot for assistance. The bot will provide them with the relevant emergency numbers for their location, such as the police, fire department, or medical services.

Overall, the EV chat bot in python is a useful tool for electric vehicle owners and enthusiasts. Its ability to show nearby charging points, service stations, and emergency numbers can make life easier and more convenient for users, while also promoting the use of electric vehicles.

II.MARKET SURVEY

The use of electric vehicles (EVs) is increasing rapidly, and so is the need for convenient and reliable charging infrastructure. To address this need, an EV chatbot can be developed using Python that incorporates features such as showing nearby charging points, service centers, and emergency services.

The EV chatbot can leverage location-based services and machine learning algorithms to provide users with up-to-date and accurate information on the nearest charging stations, service centers, and emergency services. This will enable EV owners to plan their trips better and avoid the inconvenience of running out of charge or facing unexpected breakdowns.



III.SOFTWARE REQUIRED

- Python programming language: Python is a popular programming language that is widely used for building chatbots.



- **Chatbot development framework:** You can use a chatbot development framework like Flask, Django, or FastAPI to build the chatbot.
- **NLP:** You would need to integrate NLP to fetch the necessary data for changing points, service status, and emergency location. Some popular NLP for this purpose include Google Cloud API, OpenAI GPT-3 API, and Microsoft Azure.
- **Natural Language Processing (NLP) libraries:** To implement and process the user's queries and responses, you would need to use NLP libraries like NLTK or spaCy.
- **Database:** You would need to store the data related to changing points, service status, and emergency location in a database like MySQL or MongoDB.
- **Deployment platform:** You can deploy your chatbot on cloud platforms like AWS or Heroku for easy access and scalability.
- **User interface:** You can create a simple user interface using HTML, CSS, and JavaScript to allow users to interact with the chatbot. Alternatively, you can integrate the chatbot with messaging platforms like Facebook Messenger or Telegram to make it more accessible to users.

IV. SYSTEM SPECIFICATIONS

4.1 DESIGN MODEL

The EV chatbot using Python with features like changing points, changing points, service status, and emergency services will consist of several modules working together. The user interface module will handle user input, validation, error handling, and chatbot design and layout. The location module will be responsible for receiving the user's current location and detecting when the user enters a valid EV charging station or service center. The changing points module will retrieve data on nearby changing points using an external API and display this information to the user, while the service status module will retrieve data on nearby service centers and display this information to the user. Finally, the emergency services module will provide information about nearby emergency services and allow users to contact emergency services directly through the chatbot. These modules will work together to provide a comprehensive and user-friendly experience for EV owners.

4.2 HARDWARE

Since the "EV CHATBOT using Python" is a software-based system, there are no specific hardware requirements beyond those required to run the Python programming language itself.

4.3 SOFTWARE

1. **Python:** Python is the primary language used to develop the chatbot. A recent version of Python 3 should be installed on the development machine.
2. **Python Libraries:** The following Python libraries are essential for the development of an EV chatbot: Flask (for building the web application), Requests (for making HTTP requests to APIs), and NLTK (for parsing NLP data).

- Chatbot development framework: You can use a chatbot development framework like Flask, Tkinter, or FastAPI to build the chatbot.
- APIs: You would need to integrate APIs to fetch the necessary data for charging points, service stations, and emergency numbers. Some popular APIs for this purpose include Google Maps API, OpenChargeMap API, and MapQuest API.
- Natural Language Processing (NLP) libraries: To understand and process the user's queries and responses, you would need to use NLP libraries like NLTK or spaCy.
- Database: You would need to store the data related to charging points, service stations, and emergency numbers in a database like SQLite or MySQL.
- Deployment platform: You can deploy your chatbot on cloud platforms like AWS or Heroku for easy access and scalability.
- User interface: You can create a simple user interface using HTML, CSS, and JavaScript to allow users to interact with the chatbot. Alternatively, you can integrate the chatbot with messaging platforms like Facebook Messenger or Telegram to make it more accessible to users.

IV.SYSTEM SPECIFICATION

4.1 DESIGN MODULE

The EV chatbot using Python with features like showing nearby charging points, service centers, and emergency services will consist of several modules working together. The user interface module will handle user input validation, error handling, and chatbot design and layout. The location module will be responsible for retrieving the user's current location and detecting when the user enters or exits an EV charging station or service center. The charging points module will retrieve data on nearby charging points using an external API and display this information to the user, while the service centers module will retrieve data on nearby service centers and display this information to the user. Finally, the emergency services module will provide information about nearby emergency services and allow users to contact emergency services directly through the chatbot. These modules will work together to provide a comprehensive and user-friendly experience for EV owners.

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V.SYSTEM MODELLING

5.1 Activity Diagram

An activity diagram visually presents a series of actions or flow of control in a system similar to a flowchart or a data flow diagram. Activity diagrams are often used in business process modeling. They can also describe the steps in a use case diagram. Activities modeled can be sequential and concurrent.

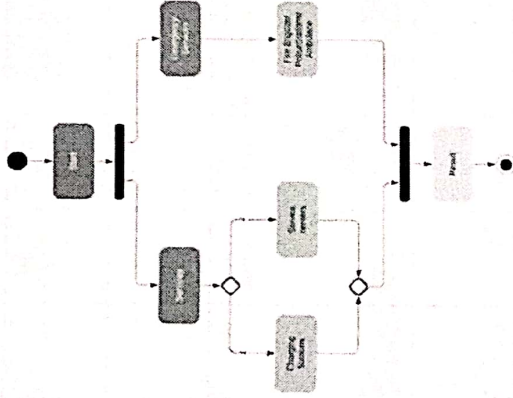
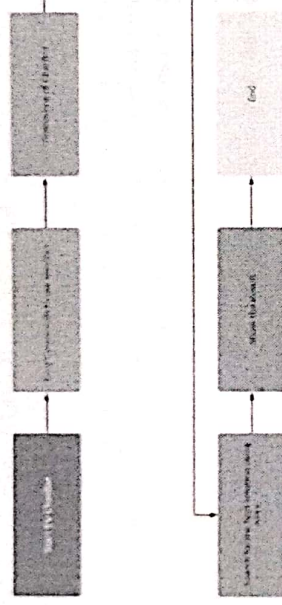


Fig 4 | EV CHATBOT Activity diagram

1. **APIs:** External APIs will be needed to retrieve information about nearby charging points, service centers, and emergency services. The APIs used should be reliable, up-to-date, and provide the required information in a structured format.
2. **Web server:** A web server is required to host the chatbot application. Popular web servers for hosting Flask applications include Apache and Nginx.
3. **Database:** A database may be needed to store user data, such as user preferences for charging stations or service centers. SQLite is a lightweight database that can be easily integrated into a Python application.
4. **Development Environment:** An Integrated Development Environment (IDE) is recommended to facilitate the development process. Popular IDEs for Python development include PyCharm and Visual Studio Code.
5. **Version Control System:** A version control system is recommended to manage the codebase and track changes. Git is a popular version control system used by many development teams.

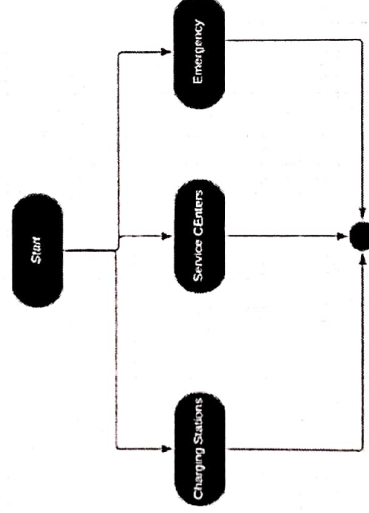
5.2 Sequence Diagram

UML Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration. Sequence Diagrams are time focus and they show the order of the interaction visually by using the vertical axis of the diagram to represent time what messages are sent and when



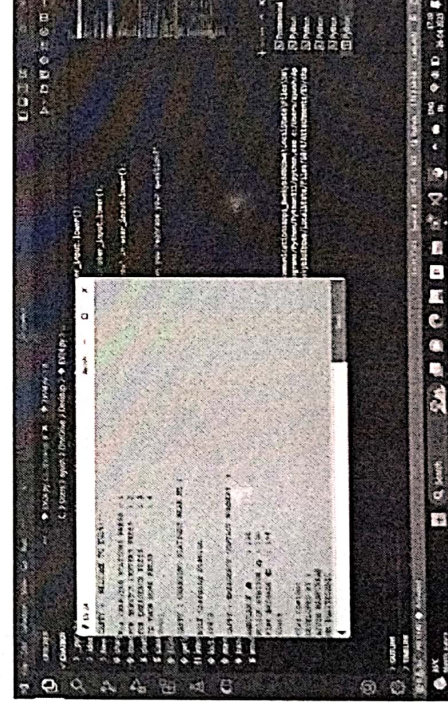
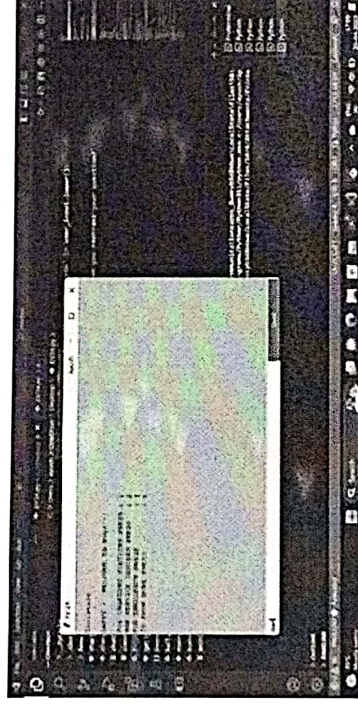
5.3 State Diagram

Specifically, a state diagram describes the behavior of a single object in response to a series of events in a system. Sometimes it's also known as a Harrell state chart or a state machine diagram. This UML diagram models the dynamic flow of control from state to state of a particular object within a system.



6. APIs: External APIs will be needed to retrieve information about nearby charging points, service centers, and emergency services. The APIs used should be reliable, up-to-date, and provide the required information in a structured format.
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VI.RESULTS



VII.CONCLUSION

Chatbots have become increasingly popular in recent years, as they offer a cost-effective and efficient way to provide customer service and support. In the automotive industry, chatbots are being used to provide assistance with vehicle maintenance, repairs, and diagnostics. They are also being used to provide information on vehicle specifications, prices, and availability. Chatbots can be programmed to respond to user queries in natural language, making them more user-

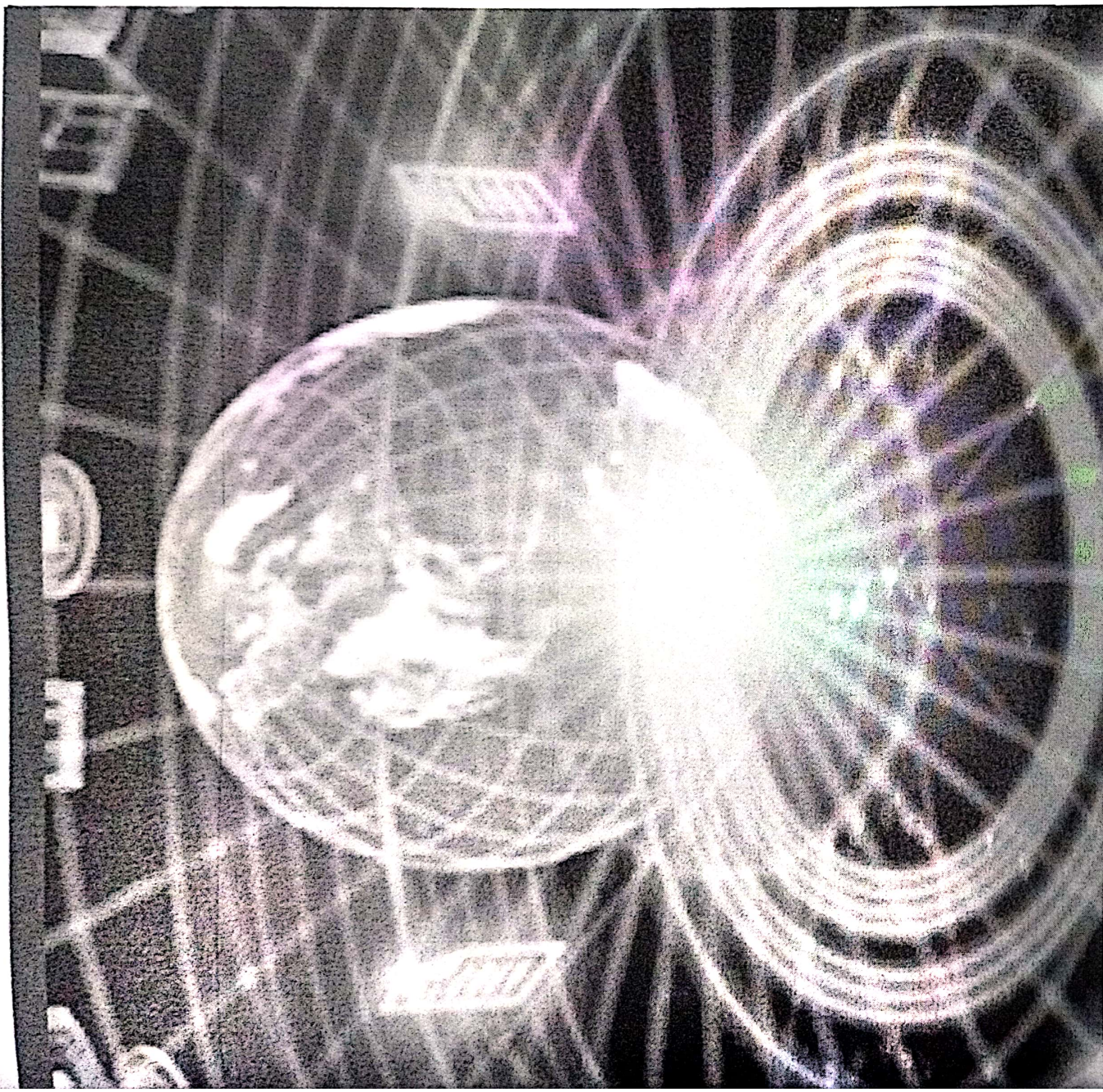
friendly than traditional interfaces. They can also be integrated with other technologies, such as voice assistants and machine learning algorithms, to provide more personalized and accurate responses.

VIII.FUTURE WORK

Integration with more APIs: Currently, the chatbot is using Google Maps API and OpenChargeMap API to retrieve information about charging points and service stations. However, there are many other APIs that provide similar information, such as PlugShare, ChargePoint, and EVgo. Integration with these APIs can provide more comprehensive and accurate information to users.Improved natural language processing: The chatbot could be improved by incorporating more advanced natural language processing (NLP) techniques, such as sentiment analysis, intent recognition, and context awareness. This could improve the chatbot's ability to understand and respond to user queries more accurately. Multi-lingual support: The chatbot could be expanded to support multiple languages, which would make it accessible to a wider audience. This would require the integration of additional NLP libraries and translation APIs.Personalization and user profiling: The chatbot could be improved by incorporating personalization features, such as user profiling and preferences. This would allow the chatbot to provide more customized and relevant information to users based on their location, vehicle type, and other preferences.Integration with social media platforms: The chatbot could be integrated with social media platforms such as Facebook Messenger and Twitter, which would allow users to access the chatbot from within those platforms.Voice assistant integration: The chatbot could be integrated with voice assistants such as Amazon Alexa and Google Assistant, which would allow users to access the chatbot using voice commands.Improved user interface: The chatbot could be improved by providing a more user-friendly interface, such as a mobile app or a web interface. This would make it easier for users to access and use the chatbot.Real-time updates: The chatbot could be improved by providing real-time updates on the availability of charging points and service stations. This would require the integration of additional APIs or data sources, and the implementation of real-time data processing and visualization.

REFERENCES

1. https://botpress.com/docs/getting_started/quick_start.
2. <https://cloud.google.com/dialogflow/docs>.
3. <https://rasa.com/docs/>.
4. <https://www.udemy.com/course/building-chatbots-with-google-dialogflow/>.
5. <https://www.udemy.com/course/building-a-chatbot-with-rasa/>.
6. <https://www.udemy.com/course/botpress-the-ultimate-guide/>.



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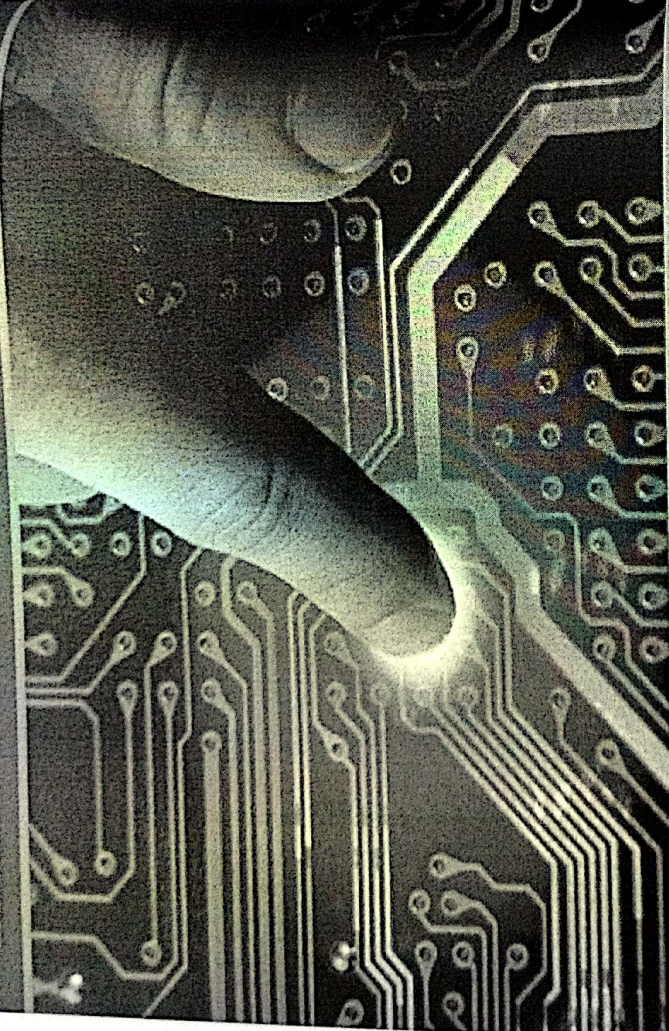
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ABSTRACT: -The only aim is to keep the having fear of using hard technologies in the who has less knowledge can easily use this sour due to the hot climate and delay in the unit. This is a huge drain on the society, as entire lot if found to be of low quality. Till now the village people use the old tradit and every day data and also time consumin

Emphasis is always placed on the use of doubt that these technologies contribute improved technologies do not find equal they require expensive inputs and are dif change practices to suit their farming. traditional and modern methods. However practices. The traditional system has ma prevailing among the farmers, there is a or innovations, which can increase the understanding of EPS becomes imper background, a study was undertaken to by dairy farmers. About 20.5 million pe income of small farm households as ag two-third of rural community. Milk innumerable health benefits accredited both the Government and the Dairy adulterantshave hazardous health effect

The milk from a farmer who draws it in fodder to the cows or even the wea food among all the animal products N milk from several group members is to centres or markets. Basic role of dair to food in order to prevent the item f to old age. There are innumerable he cause of concern for both the Gover cows can vary in quality due to vari or the duration of lactation of indivi Account Book. We entered data and their requirement. They can get dat paid amount, and many more get ir additional fat milk or any other thin

Parth Milk Collection Dairy

Pranali Vishnu Darkunde, Srushti Rajesh Naphade.

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ABSTRACT:- The only aim is to keep the record of milk collection and sale. As due to less knowledge or some people having fear of using hard technologies in their work so this website is for that people. As it is simple to use so the people who has less knowledge can easily use this website and make that daily work easy. At times some of the milk becomes sour due to the hot climate and delay in the time taken for the milk to be collected in the centre and it to, reach the chilling unit. This is a huge drain on the society, as the District Union does the quality check at its receiving point and rejects the entire lot if found to be of low quality.

Till now the village people use the old traditional method of "book and pen" which in this time is difficult to store each and every day data and also time consuming so for that this website is useful and comfortable

I. INTRODUCTION

Emphasis is always placed on the use of modern scientific technology in dairy development programmes. There is no doubt that these technologies contribute to increase the productivity of cattle and increase the net profit, but some improved technologies do not find equal place in all places, because many factors differ in conditions. At the same time they require expensive inputs and are difficult for small farmers to understand and practice. In many cases dairy farmers change practices to suit their farming. Hence at any given time the Existing Practice System (EPS) includes both traditional and modern methods. However, in most cases the balance of existing practices is tipped towards traditional practices. The traditional system has many good points from the farmers' point of view and depending on the conditions prevailing among the farmers, there is a great demand for some external system intervention in terms of new technologies or innovations, which can increase the productivity and increase the income of the farmers. In this competition, an understanding of EPS becomes imperative to design and deliver the right product technology. Against the above background, a study was undertaken to gain an in-depth understanding of the existing dairy farming practices followed by dairy farmers. About 20.5 million people depend upon livestock for their livelihood. Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. Livestock provides livelihood to two-third of rural community. Milk is an indispensable food for human beings from infancy to old age. There are innumerable health benefits accredited to milk and milk products. Adulteration in milk has been a cause of concern for both the Government and the Dairy Industry. The Indian Council of Medical Research has reported that milk adulterants have hazardous health effects.

The milk from a farmer who draws it from the same cows can vary in quality due to various conditions including change in fodder to the cows or even the weather condition or the duration of lactation of individual cows. Milk is a wholesome food among all the animal products. Milk collection is often one of the first activities of milk producer groups. Once the milk from several group members is collected in a central location, the milk can be processed or transported to processing centres or markets. Basic role of dairy packaging, as well as for any other food product, is to provide a physical barrier to food in order to prevent the item from different damage. Milk is an indispensable food for human beings from infancy to old age. There are innumerable health benefits accredited to milk and milk products. Adulteration in milk has been a cause of concern for both the Government and the Dairy Industry. The milk from a farmer who draws it from the same cows can vary in quality due to various conditions including change in fodder to the cows or even the weather condition or the duration of lactation of individual cows. We are providing 4 registers that are Buy Book Sell Book, Bill Book and Account Book. We entered data and stored it in database for perfect management of data and display information as per their requirement. They can get data as per fields provided such as pending payments, name of customers, rate of milk, paid amount, and many more get include as per requirement. We are also providing some fields if they want to edit rates, additional fat milk or any other things.

intense. Another problem is that most of the systems are not centralized and do not provide financial transparency among the entities. Using an integrated system will eliminate almost all the manual work making the process easy and effortless. It will optimize the process and make the system centralized, secure and efficient. The Smart Dairy ERP system will not only be used by the Dairy administrators and employees but also by the farmers and milk collectors that supply milk to the dairies. Having an integrated system in any industry is a must and Smart Dairy ERP system will automate most of the process, reducing the labour, give more control to the administrators and most importantly provide financial transparency among farmers, milk collectors and administrators. Smart Dairy ERP System is designed for farmers, collection centers, and milk processing units (dairies). This ERP software ensures efficient collaboration between farmers, collection center owners, and administrators, thus giving a sustainable competitive advantage. The main purpose of the Smart Dairy ERP Project is to facilitate communication between farmers/local milk sellers and the milk factory. This software will help the administrators to register all the suppliers, buyer details, sales details, etc. It will also allow the farmers and milk collection center owners to track their day-to-day transactions. It is an integrated system that provides relevant information across the Dairy thus resulting in better management and transparency. The Smart Dairy ERP system supports the optimization of processes like procurement including milk entry and milk payment statement, transparent traceability across all value-adding stages from farmer to administrator, automation and centralized control.

II. FUTURE WORK

(Background or literature Review)

- The use of automation in milk collection dairy can help reduce labor costs and improve efficiency. Automated milking machines, for example, can milk cows without human intervention, and sensors can be used to monitor milk quality and quantity. In our project we are going to make a model of a house. We are going to install 4 bottles below the house to save it from flooding.
- Ensuring the quality of milk is essential for maintaining consumer trust and complying with regulations. Future work could focus on developing more advanced sensors and analysis tools to monitor milk quality in real-time, allowing for faster detection and correction of quality issues. And let's say if water enters the house, then we have installed a buzzer outside the house. Sustainability is becoming an increasingly important issue in the dairy industry, and milk collection is no exception. Future work could focus on developing more sustainable milk collection practices, such as reducing the carbon footprint of milk transport and exploring alternative energy sources for milk collection vehicles.

III. METHODOLOGY

User Interface (GUI)

Here the user (the farmer or the PC operator) enters specific information about cows. The application is a windows form application and has a rich user interface. The interface is very simple to use. When the user finishes entering the data and clicks the Save button, the application reads the information entered by the user from the specific controls. At this stage the system validates all information from the controls. (For mandatory fields, the range of numeric fields is validated). If validation fails, the user will be informed and should fix all problems by clicking the Save button again. After validation is completed (all the required information is completed correctly), the system will send the data entered by the user to the Business Logic Layer (BLI).



Business Logic Layer (BLI).

Business Logic Layer is the module that contains all the logic of the application. In the classes included in this module there will be logic for specific formulas. The module performs all the logic validation and if validation fails, the control will be sent back to the GUI module, and the user will be informed about all errors that occur. After all the logic validation has been performed, and all specific calculations have been made, the result will be sent to Data Access Layer (DAL).



Data Access Layer (DAL).

This module is used to make specific requests to Data Base Server. The request to select, insert, update or delete information from DB will be sent by this module directly to Data Base Server. When Data Base Server has shown the result, the data will be sent to the BLI module, and then the data will be sent to the GUI (to the user).



DATA BASE SERVER



IV. LITERATURE SURVEY

1. In our project we are going to make a database of the farmers.
2. Due to this project the farmer can easily store his data without much efforts.
3. In this project the data is secure.
4. As this project is design as lesseducated the person can also access.

V. CONCLUSION

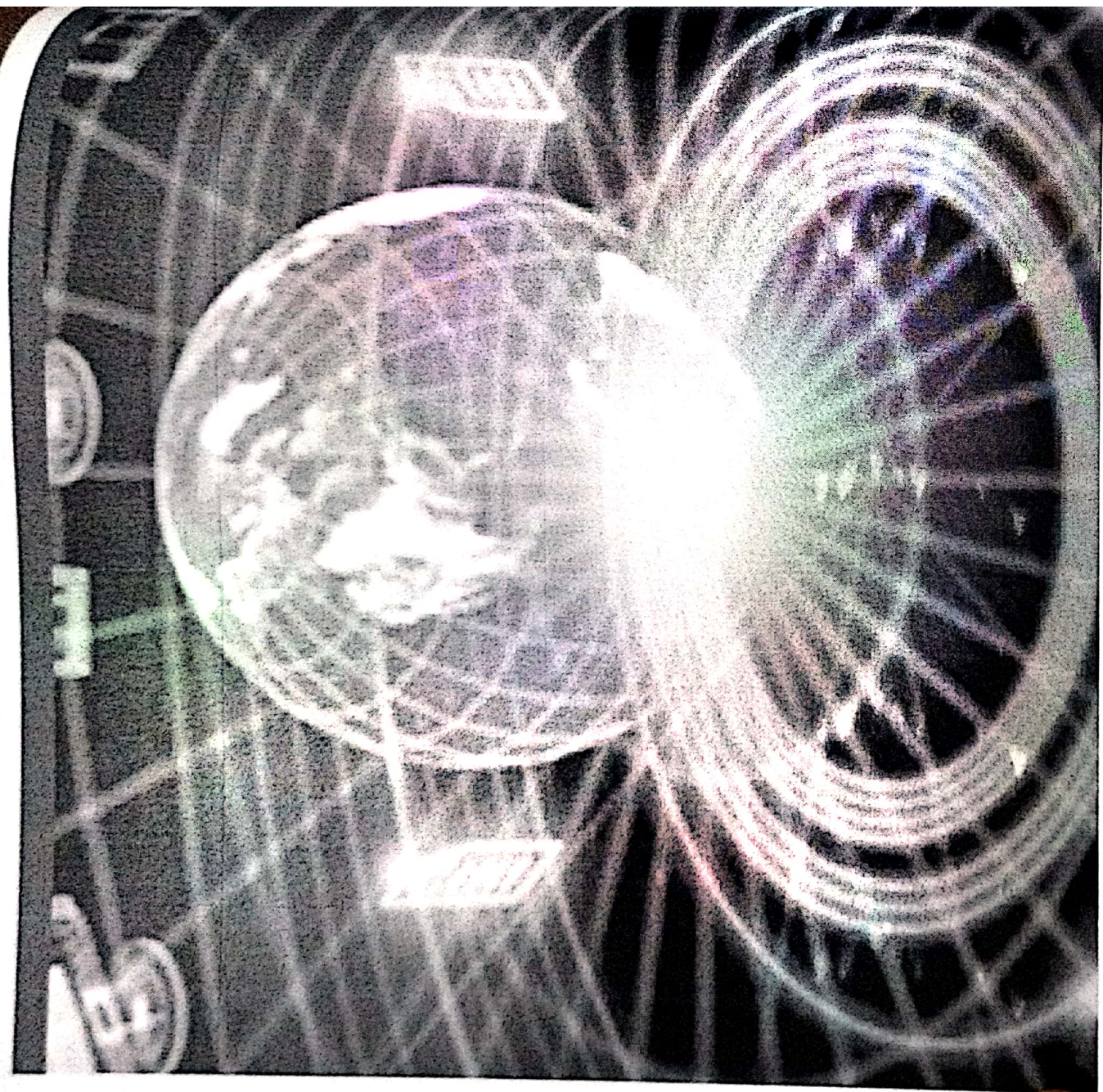
Dairy farming is a challenging and dynamic business, whether the farm in question is a small family farm or a large corporation. Effective business management requires both farm production and financial information, to be used separately for some purposes and in combination for others. The responsibilities of a dairy farm manager and the principles of sound management are common to all types of dairy farms. However, the specific applications will depend on individual farm factors and the external business environment, including the rules and regulations imposed by government. The principles summarized here are well established and additional information and support are available in most parts of the world.

VI. ACKNOWLEDGMENT

We would like to sincerely thank each and every one of the people and groups who helped to create this list of milk dairy. We want to thank the dairy personnel first and foremost for giving us the knowledge and assistance we needed while conducting the inventory. The success of this initiative was greatly aided by their collaboration and commitment to keeping correct inventory records. We also like to express our gratitude to our colleagues who shared with us their knowledge and experience about milk dairy collection management. Their knowledge assisted us

References

1. Abd El-Ghani S. 1993 On the bacteriological quality of raw market milk in rural areas of Giza Province. Egyptian Journal of Food Science 21: 73-77
2. Aboul-Khier F.A., El-Bassiony T. & Gad-El-Rab H. 1986 Incidence of coliform organisms in raw milk in Sohag City. Assuit Veterinary Medical Journal 15: 129-133
3. Adesiyun A.A. 1994 Bacteriological quality and associated public health risk of preprocessed bovine milk in Trinidad. International Journal of Food Microbiology 21: 253-261
4. Adesiyun A.A., Webb L. & Rahaman S. 1995 Microbiological quality of raw cow's milk at collection centres in Trinidad. Journal of Food Protection 58: 139-146
5. Angelidis A.S., Farver T.B. & Cullor J.S. 1999 Evaluation of the Delvo-X-Press assay for detecting antibiotic residues in milk samples from individual cows. Journal of Food Protection 62: 1183-1190
6. Antila V. 1982 The effect of the bacteriological quality of raw milk on the quality of milk products. Kieler Milchwirtschaftliche Forschungsberichte 34: 170-173
7. Asperger H. 1994 Staphylococcus aureus. In: Monograph on the significance of pathogenic microorganisms in raw milk, International Dairy Federation, Brussels: 24-42
8. Barrett N.J. 1986 Communicable disease associated with milk and dairy products in England and Wales: 1983-1984. Journal of Infection 12: 265-272
9. Bester B.H., Groeneveld H.T. & Lombard S.H. 1986 Prediction of the keeping quality of refrigerated raw milk. South African Journal of Dairy Science 18: 11-16



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Energy Efficient Routing Algorithm for Maximizing Network Lifetime of MANETs

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ABSTRACT: Nodes in Mobile Ad Hoc Networks (MANETs) are limited battery powered. That's why energy efficient routing has become an important optimization criterion in MANETs. The conventional routing protocols do not consider energy of the nodes while selecting routes which leads to early exhaustion of nodes and partitioning of the network. This paper attempts to provide an energy aware routing algorithm. The proposed algorithm finds the transmission energy between the nodes relative to the distance and the performance of the algorithm is analyzed between two metrics Total Transmission energy of a route and Maximum Number of Hops. The proposed algorithm shows efficient energy utilization and increased network lifetime with total transmission energy metric.

KEYWORDS: Energy efficient algorithm; Manets; total transmission energy; maximum number of hops; network lifetime

I. INTRODUCTION

Mobile Ad Hoc Networks (MANETs) consists of a collection of mobile nodes which are not bounded in any infrastructure. Nodes in MANET can communicate with each other and can move anywhere without restriction. This non-restricted mobility and easy deployment characteristics of MANETs make them very popular and highly suitable for emergencies, natural disaster and military operations.

Nodes in MANET have limited battery power and these batteries cannot be replaced or recharged in complex scenarios. To prolong or maximize the network lifetime these batteries should be used efficiently. The energy consumption of each node varies according to its communication state: transmitting, receiving, listening or sleeping modes. Researchers and industries both are working on the mechanism to prolong the lifetime of the node's battery. But routing algorithms plays an important role in energy efficiency because routing algorithm will decide which node has to be selected for communication.

The main purpose of energy efficient algorithm is to maximize the network lifetime. These algorithms are not just related to maximize the total energy consumption of the route but also to maximize the life time of each node in the network to increase the network lifetime. Energy efficient algorithms can be based on the two metrics: i) Minimizing total transmission energy ii) maximizing network lifetime. The first metric focuses on the total transmission energy used to send the packets from source to destination by selecting the large number of hops criteria. Second metric focuses on the residual battery energy level of entire network or individual battery energy of a node [1].

II. RELATED WORK

In [2] authors used average residual battery level of the entire network and it was calculated by adding two fields to the RREQ packet header of a on-demand routing algorithm i) average residual battery energy of the nodes on the path ii) number of hops that the RREQ packet has passed through. According to their equation retransmission time is proportional to residual battery energy. Those nodes having more battery energy than the average energy will be selected because its retransmission time will be less. Small hop count is selected at the stage when most of the nodes have same retransmission time. Individual battery power of a node is considered as a metric to prolong the network lifetime in [3]. Authors used an optimization function which considers nature of the packet, size of the packet and distance between the nodes, number of hops and transmission time are also considered for optimization. In [4] initial population for Genetic Algorithm has been computed from the multicast group which has a set of paths from source to destination and the calculated lifetime of each path. Lifetime of the path is used as a fitness function. Fitness function will select the highest chromosomes which is having highest lifetime. Cross over and mutation operators are used to enhance the selection. In [5] authors improved AODV protocol by implementing a balanced energy consumption idea into route discovery process. RREQ message will be forwarded when the nodes have sufficient amount of energy to transmit the message otherwise message will be dropped. This condition will be checked with threshold value which is dynamically changing. It allows a node with over used battery to refuse to route the traffic in order to prolong the

network life. In [6] Authors had modified the route table of AODV adding power factor field. Only active nodes can take part in route selection and remaining nodes can be idle. The lifetime of a node is calculated and transmitted along with Hello packets. In [7] authors considered the individual battery power of the node and number of hops, as the large number of hops will help in reducing the range of the transmission power. Route discovery has been done in the same way as being done in on-demand routing algorithms. After packet has been reached to the destination, destination will wait for time δt and collects all the packets. After time δt it calls the optimization function to select the path and send RREP. Optimization function uses the individual node's battery energy; if node is having low energy level then optimization function will not use that node.

III. PROPOSED ALGORITHM

A. Design Considerations:

- Initial battery energy (IBE) is 50Jules for each node.
- Nodes are able to calculate its residual battery energy (RBE).
- Keeping track of previously used paths.
- Considered all possible paths at beginning.
- Receiving energy is not considered.
- The time when no path is available to transmit the packet is considered as the network lifetime.

B. Description of the Proposed Algorithm:

Aim of the proposed algorithm is to maximize the network life by minimizing the total transmission energy using energy efficient routes to transmit the packet. The proposed algorithm consists of three main steps.

Step 1: Calculating Transmission Energy:

The transmission energy (TE_{node}) of each node relative to its distance with another node is calculated by using eq.(1)[8].

$$\begin{aligned} TE_{node} &\propto d^n \\ TE_{node} &= k d^n \end{aligned}$$

eq. (1)

where k is constant and n is path loss factor which is generally between (2-4) [8].

Step 2: Selection Criteria:

Node should have more residual battery energy (RBE) than the required transmission energy (TE_{node}) to transmit the packet to the next node in the route. All the nodes in the route will be checked with this condition even if one node of a route is not satisfying this condition then that route will not be considered as a feasible solution. All the other routes having all the nodes with sufficient amount of energy are considered as the feasible solution. And those nodes having equal RBE than (TE_{node}) are made to go into sleep mode. This selecting criterion helped to prolong the network life by avoiding the link breakage. We tried to avoid the repeated use of the path. But at one stage we have to compromise with energy efficiency when we have a route with less energy consumption but it is already being used and a route with maximum consumption of energy which is not used. So till this point we avoided repeated use of the paths and tried to increase the network life. Transmission energy of a node to node in a route is calculated according to the distance and the total transmission energy (TTE_R) for that route is calculated using eq. (2).

$$TTE_R = \sum_{i=1}^m TE \quad \text{eq. (2)}$$

where m is the number of hops in the route, $TE = TE_{node}$ is the transmission energy between the nodes. The route having minimum total transmission energy i.e. $\min(TTE_R)$ will be selected as energy efficient route.

Step 3: Calculating Residual Battery Energy (RBE):

After transmitting the packet, residual battery energy for each node of the route is calculated using eq. (3) with parameters initial battery energy (IBE) and TE_{node} .

$$RBE = IBE - TE_{node} \quad \text{eq. (3)}$$

IV. PSEUDO CODE

```

Step 1: Generate all the possible routes.
Step 2: Calculate the  $TE_{node}$  for each node of each route using eq. (1).
Step 3: Check the below condition for each route till no route is available to transmit the packet.
        if ( $RBE \leq TE_{node}$ )
            Make the node into sleep mode.
        else
            Select all the routes which have active nodes
        end
Step 4: Calculate the total transmission energy for all the selected routes using eq. (2).
Step 5: Select the energy efficient route on the basis of minimum total transmission energy of the route.
Step 6: Calculate the RBE for each node of the selected route using eq. (3).
Step 7: go to step 3.
Step 8: End.
    
```

V. SIMULATION RESULTS

The simulation studies involve the deterministic small network topology with 5 nodes as shown in Fig.1. The proposed energy efficient algorithm is implemented with MATLAB. We transmitted same size of data packets through source node 1 to destination node 5. Proposed algorithm is compared between two metrics Total Transmission Energy consumed by each node. We considered the simulation time as a network lifetime and network lifetime is a time when no route is available to transmit the packet. Simulation time is calculated through the CPUTIME function of MATLAB. Our results shows that the metric total transmission energy performs better than the maximum number of hops in terms of network lifetime, energy consumption and total number of packets transmitted through the network.

The network showed in Fig. 1 is able to transmit 22 packets if total transmission energy metric is used and 17 packets if used maximum number of hops metric. And the network lifetime is also more for total transmission energy. It clearly shows in Fig. 2 that the metric total transmission energy consumes less energy than maximum number of hops. As the network is MANET means nodes are mobile and they change their locations. After nodes have changed their location the new topology is shown in Fig. 3 and energy consumption of each node is shown in Fig. 4. Our results shows that the metric total transmission energy performs better than the maximum number of hops in terms of network lifetime, energy consumption and total number of packets transmitted through the network.

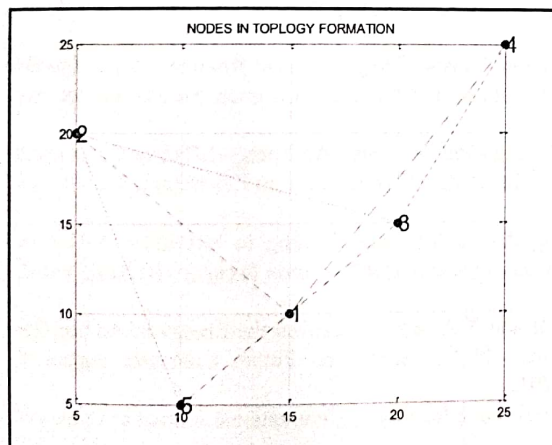


Fig.1. Ad Hoc Network of 5 Nodes

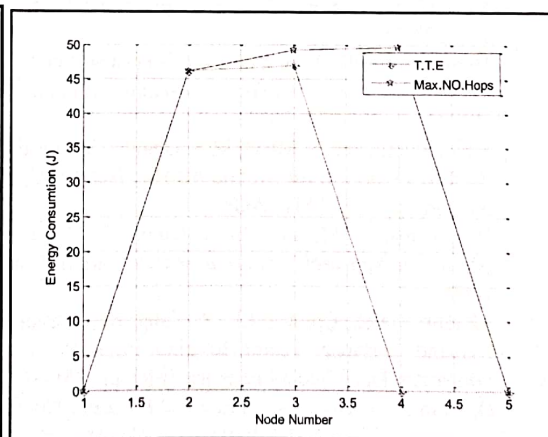


Fig. 2. Energy Consumption by Each Node

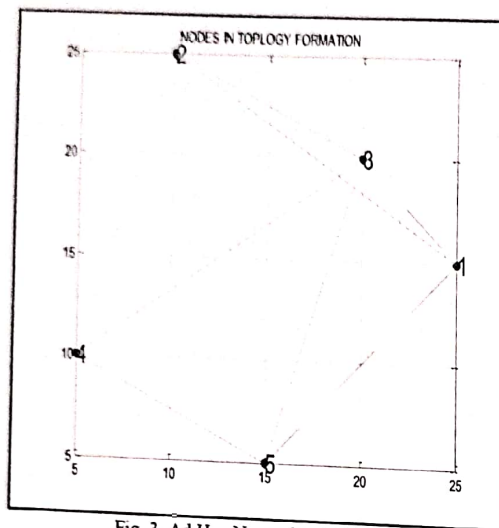


Fig. 3. Ad Hoc Network of 5 Nodes

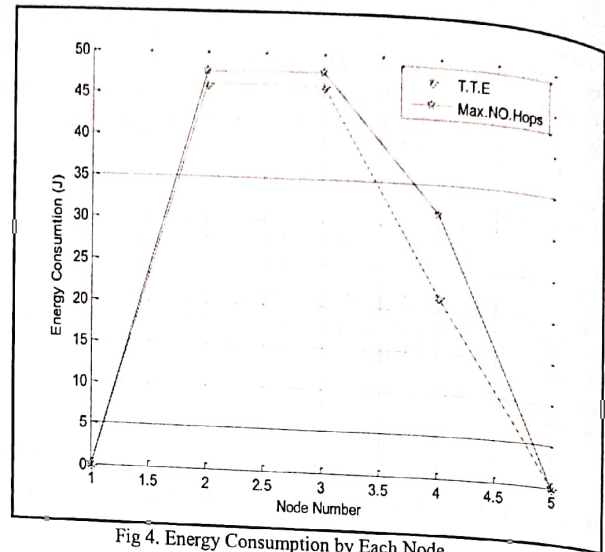


Fig. 4. Energy Consumption by Each Node

VI. CONCLUSION AND FUTURE WORK

The simulation results showed that the proposed algorithm performs better with the total transmission energy metric than the maximum number of hops metric. The proposed algorithm provides energy efficient path for data transmission and maximizes the lifetime of entire network. As the performance of the proposed algorithm is analyzed between two metrics in future with some modifications in design considerations the performance of the proposed algorithm can be compared with other energy efficient algorithm. We have used very small network of 5 nodes, as number of nodes increases the complexity will increase. We can increase the number of nodes and analyze the performance.

REFERENCES

1. Anjum Asma and Giham Nagib, 'Energy Efficient Routing Algorithms for Mobile Ad Hoc Networks-A Survey', International Journal of Emerging Trends & Technology in computer Science, Vol.3, Issue 1, pp. 218-223, 2012.
2. Hong-ryeol Gill, Joon Yoo1 and Jong-won Lee2, 'An On-demand Energy-efficient Routing Algorithm for Wireless Ad hoc Networks', Proceedings of the 2nd International Conference on Human. Society and Internet HSI'03, pp. 302-311, 2003.
3. S.K. Dhurandher, S. Misra, M.S. Obaidat, V. Basal, P. Singh and V. Punia, 'An Energy-Efficient On Demand Routing algorithm for Mobile Ad-Hoc Networks', 15th International conference on Electronics, Circuits and Systems, pp. 958-9618, 2008.
4. DilipKumar S. M. and Vijaya Kumar B. P., 'Energy-Aware Multicast Routing in MANETs: A Genetic Algorithm Approach', International Journal of Computer Science and Information Security (IJCSIS), Vol. 2, 2009.
5. AlGabri Malek, Chunlin LI, Z. Yang, Naji Hasan.A.H and X.Zhang, 'Improved the Energy of Ad hoc On-Demand Distance Vector Routing Protocol', International Conference on Future Computer Supported Education, Published by Elsevier, IERI, pp. 355-361, 2012.
6. D.Shama and A.kush, 'GPS Enabled E Energy Efficient Routing for Manet', International Journal of Computer Networks (IJCN), Vol.3, Issue 3, pp. 159-166, 2011.
7. Shilpa jain and Sourabh jain, 'Energy Efficient Maximum Lifetime Ad-Hoc Routing (EEMLAR)', international Journal of Computer Networks and Wireless Communications, Vol.2, Issue 4, pp. 450-455, 2012.
8. Vadivel, R and V. Murali Bhaskaran, 'Energy Efficient with Secured Reliable Routing Protocol (EESRRP) for Mobile Ad-Hoc Networks', Procedia Technology 4, pp. 703- 707, 2012.
9. Nobuo Ezaki, Marius Bulacu Lambert, Schomaker, "Text Detection from Natural Scene Images: Towards a System for Visually Impaired Persons", Proc. of 17th Int. Conf. on Pattern Recognition (ICPR), IEEE Computer Society, pp. 683-686, vol. II, 2004



10. Mr. Rajesh H. Davda1, Mr. Noor Mohammed, “ Text Detection, Removal and Region Filling Using Image Inpainting”, International Journal of Futuristic Science Engineering and Technology, vol. 1 Issue 2, ISSN 2320 – 4486, 2013
11. Uday Modha, Preeti Dave, “ Image Inpainting-Automatic Detection and Removal of Text From Images”, International Journal of Engineering Research and Applications (IJERA), ISSN: 2248-9622 Vol. 2, Issue 2, 2012.
12. Muthukumar S, Dr.Krishnan .N, Pasupathi.P, Deepa. S, “Analysis of Image Inpainting Techniques with Exemplar, Poisson, Successive Elimination and 8 Pixel Neighborhood Methods”, International Journal of Computer Applications (0975 – 8887), Volume 9, No.11, 2010

BIOGRAPHY

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Billing System

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ABSTRACT :

This project is developed to manage the bill submission process in big organization. Using this system user can submit their bill online and check the status of their bill. In this system employee can submit their bill to their manager online. After submitting the bill concerned manager gets the notification. Manager review the bill and approve the bill or disapprove. Employee can check the status of the bill any time after login the system.

Employee can submit bill of various amount. An email will be sent to the concerned people to let them know about the status of the bill. The main propose of this bill management system project is developing a system that automate the bill submission and bill approval task. In big organization bill submission is very tiresome work and maintaining the record of bill is very difficult and time consuming. In present system, user have to work manually to maintain bill records and it is very difficult to know the status of the submitted bill.

In present manual system, submitting the bills to their corresponding managers is a time consuming process and we have to maintain records manually. Some times in manual process, there is a possibility to get errors. To overcome all these problem we have developed this bill management system.

Keyword – Php, Billing System

INTRODUCTION

The project "Billing system" is an application to automate the process of ordering and billing of a "Departmental store". This based on Software. The Power Billing System Project Report basically deals with the billing system. Since it's Software application the problems of single tier could be solved using this Software Application Name: Billing system

Paper bills are now the primary channel of communication between companies and their customers. However, their potential for personalization is limited, and they are not interactive. If a customer wants to react to something in his paper bill for example, to make a customer service inquiry or to order a new service – he must make a telephone call. Internet Billing promises far more than a new and inexpensive way to deliver billing information. Industry experts predict that Internet Billing will fundamentally change the way companies interact with their customers. Eventually, the Internet Bill will be an interactive entry to a host of additional services including customer self-care, automated sales one-to-one marketing. The Internet Bill will become the gateway through which customers and companies have electronic one to one dialogs.

PHP is a popular server-side scripting language that is commonly used for web development. It is particularly useful for creating dynamic web pages and web applications. PHP is often used in conjunction with a database management system, such as MySQL. MySQL is a popular open-source relational database management system. It is commonly used for web applications and is particularly well-suited for web development because it is fast, reliable, and easy to use. A billing system is an important component of many businesses, as it helps them keep track of their financial transactions, invoicing, and payments. In PHP and MySQL, you can create a billing system by following these steps: Design your database: Create a database with tables to store information such as customer details, products or services offered, and transaction information.

Develop the backend: Use PHP to create the server-side code that interacts with the database, handles requests from the client-side, and generates invoices.

Create the frontend: Develop the user interface using HTML, CSS, and JavaScript to enable users to input and view data, such as customer information, products, and invoices.

Implement security measures: Make sure to implement proper security measures to protect sensitive data, such as encryption of user passwords and input validation.

Test and deploy: Test the system thoroughly to ensure it works as intended, and deploy it to a production environment for users to access.

Here are some specific steps you can follow to implement a billing system in PHP and MySQL:

1. Create a database: Use a tool like phpMyAdmin or MySQL Workbench to create a new database and add tables to store the necessary data.
2. Define the database schema: Determine the structure of the tables in your database, including the fields, data types, and relationships between them.
3. Write PHP code: Use PHP to write the code that will interact with the database, such as inserting new customer information or generating invoices.
4. Create the user interface: Develop the frontend using HTML, CSS, and JavaScript to enable users to input and view data.
5. Test the system: Thoroughly test the system to ensure it works as intended and that all data is being properly stored in the database.
6. Deploy the system: Deploy the system to a production environment where it can be accessed by users.

A bill is a record of statement, and transaction of themoney. Bill is used to keep record of business when aperson buys some goods or any valuable things. To track of the all the products sold to the customer andhow much products was there in their reserve. Theyneed to write down all the records in a record bookmanually [3]. The bill is not just for keeping the recordof transaction, the bill is used for so many otherpurposes. They use the data from the bills to controlthe extra expenditure and spend on what is neededand also use it to improve their businesses. track of the all the products sold to the customer andhow much products was there in their reserve. Theyneed to write down all the records in a record bookmanually [3]. The bill is not just for keeping the recordof transaction, the bill is used for so many otherpurposes. They use the data from the bills to controlthe extra expenditure and spend on what is neededand also use it to improve their businesses.

As the technology came into the picture the writtenbill management started turning into digital. Initially,they introduced a simple billing management system. Software was used on computers to generate and printhe bill. The administrator only is allowed to recordand bill the all the purchased goods, employee detailsand modify the prices with the aid of a databasefunctions. The goods are arranged in categories in thedatabase [1]. Software was designed to handle the timeand bill tracking as well as keeping customersinformed of their purchase of services and goods. Billing software can track the hours worked byemployees, the number of the goods, as well asexpenses related with projects or customers. Most billing software applications are capable ofcreating billing reports. These reports can displayinformation such as hours worked, expenses incurred,how much to bill customers, and which customersowe how much money for which goods, totalinvestment, and total income of the month. .Few examples of the billing management systems :

1. Sage Timeslips2.
2. Intuit QuickBooks Time3.
3. Billing Tracker and kBilling

LITERATURE REVIEW

PHP is a widely-used server-side scripting language that can be used to develop web applications, including billing systems. PHP billing systems offer a range of features, including invoicing, payment processing, account management, and reporting. They can be used by businesses of all sizes and industries to manage their billing processes efficiently. In a study conducted by Moniruzzaman and Hossain (2013), they developed a web-based billing system using PHP and MySQL. The system was designed to automate the billing process of a small business. The system was found to be efficient in managing the billing process, reducing the time and effort required for manual billing. Similarly, in a study by Al-Hilfy and Al-Jobouri (2016), they developed a web-based billing system using PHP and MySQL. The system was designed to be used by a small retail business to manage their billing and invoicing processes. The system was found to be effective in reducing the time and effort required for billing and improving the accuracy of invoicing. Furthermore, in a study conducted by Raja and Mohamed (2016), they developed a billing system using PHP and MySQL for a small medical clinic. The system was designed to manage patient billing, appointment scheduling, and medical records. The system was found to be effective in improving the efficiency of the clinic's billing process and reducing the time and effort required for manual billing. In conclusion, PHP billing systems offer a range of benefits for businesses looking to automate and streamline their billing processes. The studies reviewed demonstrate that PHP billing systems can be effective in reducing the time and effort required for manual billing and improving the accuracy and efficiency of invoicing and payment processing. However, it is important to ensure that the system is properly designed, configured, and maintained to ensure its effectiveness and reliability.

IMPLEMENTATION

This project is based on the sales transaction and billing of items in a supermarket. The first activity is based on adding the items to the system along with the rate which are present in the supermarket and the name of the items which the supermarket will agree to sell [2]. The models provide four basic types of functionality, that is, create, read, update, and delete the resources. This is often referred to as CRUD by computer scientists. A model should have the ability to perform all these four functions in order to be complete. If an action cannot be described by one of these four operations, then it should be contained in a model of its own. The CRUD paradigm is commonly used to construct web applications, as it provides a memorable framework for reminding developers of how to construct complete, usable models. We use python to build the functionality of the application and graphics user interface (GUI). We use the SQLite database to store the application data and transaction data. Using this database, we add, up date, delete, and keep track of the transactions. We make use of different libraries of Python, like Tkinter, qrcode, pyzbar, Sqlite to build the application.

FEATURES OF BILLING SYSTEM

1. PRODUCT/ITEMS

Items are the products that you sell to various clients and can be purchased from various vendors in a business. There are two type of item. One is to track inventory and other one for customer items which do not include to inventory. General settings (name, code, descriptions, category, item tax, image) Sales pricing (Set Sales pricing for Inventory Item) Purchase pricing(Set Purchase pricing for Inventory Item)

Transaction:Shows each transaction history of an item with date and quantity)

2.Status (When user create an item, it will shows stock status for all location for this company with quantity of item available.) 2. SALES: You can use the complete sales process or just the steps you require depending on your operation. The menu options below are annotated with suggestions as to which Department would use them Invoices Payment.

3. PURCHASES: A purchase order is an official document that you issue to your vendors, indicating relevant information about what you want to buy, the quantity, the price agreed for that particular product or service.

- Select a Supplier
- Select a store location
- Reference number will generate automatically.
- select items, supply quantity and click Add Item
- Submit your order.

4. CUSTOMERS: Admin has permission of add, edit and delete customers. This is to manage all customers who are purchasing items/products from this selected company. There are two different way to create new customer. Admin can create customer by both manually and by uploading CSV files. For manually adding new customer there is a customer create form which needs customer's name, email, address and phone number.

5. SUPPLIERS: This is almost similar to customers. Admin can create suppliers for his/her company by inputting supplier's name, email, address and phone number. There are two different way to create new supplier. Admin can create supplier by both manually and by uploading CSV files. For manually adding new supplier there is a supplier create form which needs supplier's name, email, address and phone number.

6. REPORTS: Various reports are generated as they are given below.

- Inventory stock on Hand
- Sales Report
- Purchase Report
- Expense Report
- Team Member Report

OBJECTIVES

The 'smart billing software' helps in maintaining records and products. It also provides the economic/financial report to the owner monthly, weekly and yearly. The purpose is to fulfil the requirements of small and medium scale industries by maintaining stock and providing efficient billing system. User can also use USB barcode readers to record the stock and generate invoices.

SYSTEM ARCHITECTURE

The system defines a two tier architecture i.e., client-server architecture in which server hosts, deliver and manages most of the resources and services to be consumed by the client. [4] It has one or more client computers connected to a central server over a network. Client and server communicate over a computer network on separate hardware, but both reside in the same system. [5] A client requests a server's content or service function and therefore initiates the communication session with servers. The below fig shows the representation of system architecture. Here the user make a data entry and send the details to the server in order to generate the bill. This request is received by the server which checks for items entered, their quantity and finally do the calculations including GST and respond for the client.

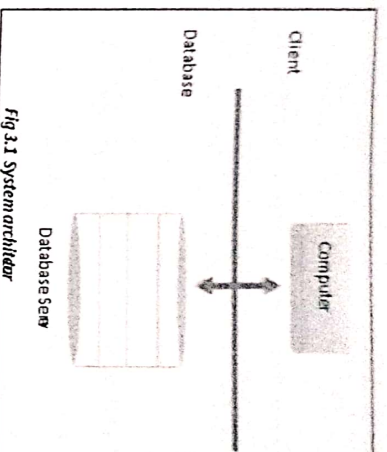


Fig 3.1 System architector

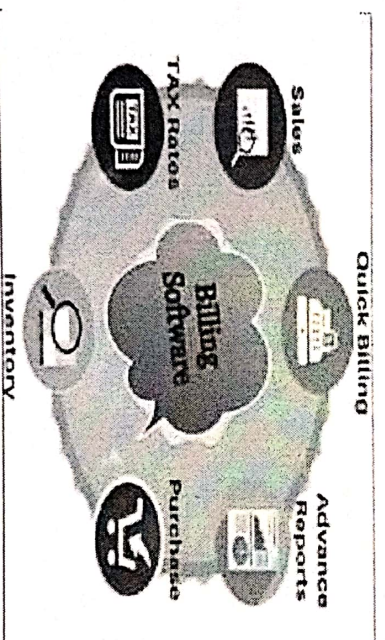
Processing systems have become computerized for great ease and accuracy [6]. A billing system is a combination of hardware and software that receives purchase details and service usage information, groups this for specific accounts or customers produces invoices, creates reports for employee or an administrator.

The word 'billing' can refer to both the total amount of goods and the act of counting them. Medical billing system [7] involves a healthcare provider submitting following up on, claims with health insurance in order to receive payment for services. It discuss the purpose of medical record documentation and various forms and the patient's accounts, order entry, charge capture, billing and accounts [www.coursewareobjects.com]. 'Billing plus' [8] is the admin plus module to manage student billing – from invoicing and online bill payments to tuition plans, financial reporting and record keeping. Designed for use by private and public schools.

'Telecommunication billing software' is the group of processes of communications service providers that are responsible to collect consumption data, calculate charging and billing information, produce bills to customers, process their payments and manage collection[9]. 'Electronic billing' is when a company, organization, or group sends its bills over the internet, and customers pay the bills electronically [10].

METHODOLOGY

A software development methodology is the basic framework using which software developers can plan, structure and control the overall process of developing a software or information system. Software project methodologies are especially important, since it makes system user-friendly. This project includes crystal reports, Crystal Reports is a business intelligence application used to create custom reports from a variety of data sources. The package includes the major features needed for a business to create a database reporting environment, such as data access, report design/formatting, report viewing and application integration. The figure 5.1 explains the basic process involved in the methodology which includes purchase, inventory, tax rates, sales, quick billing, advance reports.



In accounting, purchases is the amount of goods a shop bought throughout a periodic time. It also refers to information as to the kind, quality, quantity, and cost of goods bought that should be maintained. They are added to inventory. Here purchasing can be seen in 2 forms one is by the owner who buy goods and store them another one is by the customer who wants to take particular items from the shop. Inventory is the collection of unsold products waiting to be sold. It is listed as a current asset on an enterprise's balance sheet. Inventory is a key component of calculating cost of goods sold (COGS) and is a key driver of profit, total assets, and tax liability. Many financial ratios, such as inventory turnover, incorporate inventory values to measure certain aspects of the health of a business. Once a customer purchases the items corresponding value is deducted from the inventory and amount of tax along with the GST is calculated. Further sales are done, bills are generated and proper report is maintained.

BILLING SOFTWARE

We are making the billing software smart enough to get the customer order details .In this software we implement smart workiogy.This billing system connect each other through intmt.In this billing System have many features that's are Empolyce can access any wear .

Please Sign in

Username: jushvin

Password: PASSWORD

Sign in

Fig of sign in page

Create Invoice

Customer Name: JUSHVIN

Address: DURGAM CHOWD

Date: 2023-05-01

Name: JUSHVIN

Amount: 10000

Services: 10000

Sub Total: 10000

GST: 1000

Gross Total: 11000

Expenses: 0

Net Total: 11000

Payment Type: CASH

Payment Mode: CASH

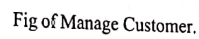
Country: INDIA

Fig of Create invoice

Generate Invoice

Invoice No.	Invoice Date	Invoice Name	Customer	Invoice Total
10000001	2023-05-01	JUSHVIN	JUSHVIN	11000
10000002	2023-05-01	JUSHVIN	JUSHVIN	11000
10000003	2023-05-01	JUSHVIN	JUSHVIN	11000
10000004	2023-05-01	JUSHVIN	JUSHVIN	11000
10000005	2023-05-01	JUSHVIN	JUSHVIN	11000

Fig of Genraete invoice



CONCLUSION

Today man getting change according to the technology and he always finds a new way to explore the things. Of course there may be many billing softwares but no small and medium scale shops are using them. "Billing System" project will help the common people to know about how the things are done automatically and even how they can use their mobiles for these types of work too.

Billing system provides a complete view of user's stock inventory, periodic reports, and also it gives full of security and protection. It mainly focus on making the system user-friendly.

A smart billing system can provide numerous benefits to businesses, including increased efficiency, accuracy, and cost savings. By automating the billing process, businesses can reduce errors, minimize manual labor, and ensure timely and accurate billing. Smart billing systems can also help businesses track customer payment histories, identify trends, and forecast future revenue streams.

REFERENCES

- [1] <http://www.codeproject.com/Articles/10824/Billing-system>
- [2] <http://www.researchgate.net/publication/31385888>
- [3] [9_GST_bill%27_2016](#)
- [4] <http://www.phptpoint.com/gst-billing-software/>
- [5] https://en.m.wikipedia.org/wiki/Client%E2%80%99server_model
- [6] [3server_model](#)
- [7] <https://www.techopedia.com/definition/438/clientserverarchitecture>
- [8] <http://www.studymode.com/subjects/review-literaturebilling-system-page1.html>

GESTURE MOUSE CURSOR CONTROL USING OPEN CV

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ABSTRACT

In this paper we present an approach for Human computer Interaction (HCI), where we have tried to control the mouse cursor movement and click events of the mouse using hand gestures. Hand gestures were acquired using a camera based on colour detection technique. This method mainly focuses on the use of a Web Camera to develop a virtual human computer interaction device in a cost effective manner.

The proposed system uses nothing more than a low resolution webcam that acts as a sensor and it is able to track the users hand bearing colour caps in two dimensions. The system will be implemented using the python and OpenCV. The hand gesture is the most effortless and natural way of communication. The output of the camera will be displayed on the monitor. Shape and position information about the gesture will be gathered using detection of colour. The file transferring scheme is implemented by using the python server programming.

I. INTRODUCTION

The most efficient and expressive way of human communication is through hand gesture, which is a universally accepted language. It is pretty much expressive such that the dumb and deaf people could understand it. In this work, real-time hand gesture system is proposed. Experimental setup of the system uses fixed position low-cost web camera high definition recording feature mounted on the top of monitor of computer or a fixed camera on a laptop, which captures snapshot using Red Green Blue [RGB] colour space from fixed distance. This work is divided into four stages such as image pre-processing, region extraction, feature extraction, feature matching. Recognition and the interpretation of sign language is one of the major issues for the communication with dumb and deaf people. In this project an effective hand gesture segmentation technique has been proposed based on the pre-processing, background subtraction and edge detection techniques. Pre-processing is defined as procedure of formulating data for another process. The main objective of the pre-processing process is to transform the data into a form that can be more effectively and effortlessly processed. In the proposed work, the pre-processing techniques are created on the basis of different types of combinations from the subsequent hand gesture image processing operations such as capturing image, removing noise, background subtraction, and edge detection and these image processing methods are discussed initially, the hand gesture images are captured from the vision based camera, The hand gestures can be observed with the different kind of interfaces like "data gloves" that accurately records every abduction angles and digit's and position sensors for wrists and optical orientation or electromagnetic, requiring the user to wear trackers or gloves. Habitually, the glove-based interfaces even need the user to be hitched to the computer, all minimizing time to user comfort and interface, conversely, vision based interfaces offer unencumbered interaction with human. By this paper we are aiming in creating a cost free hand recognition software for laptops and PCs with a web-cam support. The project covers as a hand recognition tool which could be used to move the mouse pointer, perform simple operations like clicking and other hand gesture operations like moving file from computer to computer through delicate socket programming and performing simple but fascinating operations that could be covered with the hand recognition.

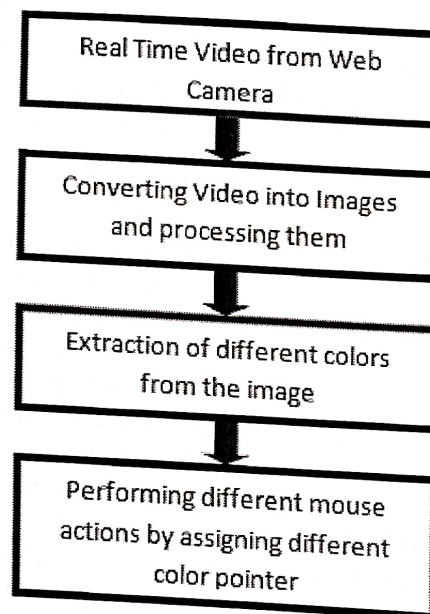
II. LITERATURE SURVEY

[1] Erden et al have used camera and computer vision technology, such as image segmentation and gesture recognition, to control mouse tasks.

- [2] Hojoon Park Our project was inspired by a paper of Hojoon Park where he used Computer vision technology and Web camera to control mouse movements. However, he used fingertips to control the mouse cursor and the angle between the thumb and index finger was used to perform clicking actions.
- [3] Chu-Feng Lien used an intuitive method to detect hand motion by its Motion History Images (MHI). In this approach only fingertip was used to control both the cursor and mouse click. In his approach the user needs to hold the mouse cursor on the desired spot for a specific period of time for clicking operation.
- [4] Kamran Niyazi used a Web camera to detect color tapes for cursor movement. The clicking actions were performed by calculating the distance between two colored tapes in the fingers.
- [5] K N Shah have represented some of the innovative methods of the finger tracking used to interact with a computer system using computer vision. They have divided the approaches used in Human Computer Interaction (HCI) in two categories: 1. HCI without using interface and 2.HCI using interface. Moreover, they have mentioned some useful applications using finger tracking through computer vision.

Our Proposed Approach

FLOW CHART



III. WORKING

Capturing the real time video:

For the system to work we need a sensor to detect the hand movements of the user. The webcam of the computer is used as a sensor. The webcam captures the real time video at a fixed frame rate and resolution which is determined by the hardware of the camera. The frame rate and resolution can be changed in the system if required.

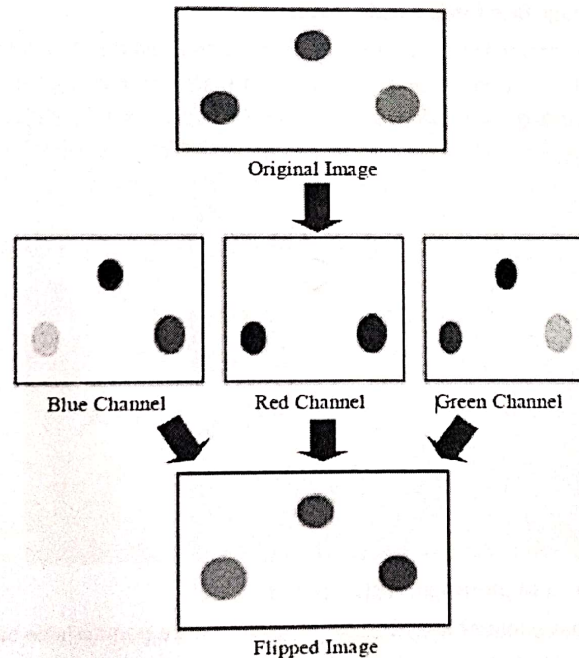
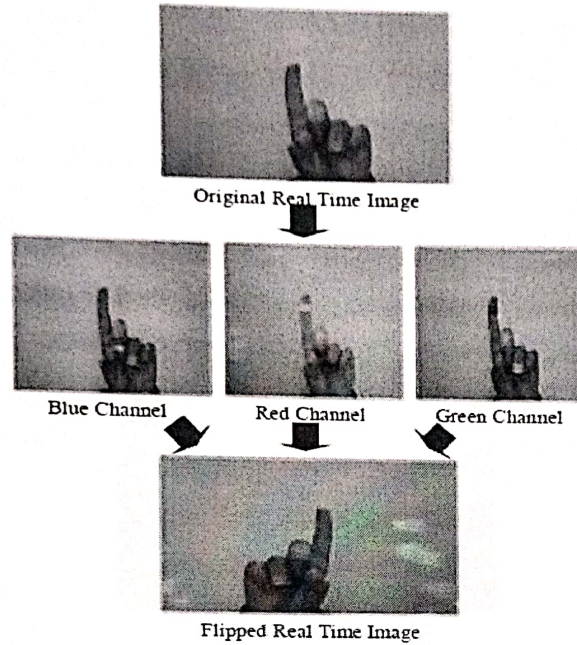
- Computer Webcam is used to capture the Real Time Video
- Video is divided into Image frames based on the FPS (Frames per second) of the camera
- Processing of individual Frames

Flipping of Images:

When the camera captures an image, it is inverted. This means that if we move the colour pointer towards the left, the image of the pointer moves towards the right and vice-versa. It's similar to an image obtained when we stand in front of a mirror (Left is detected as right and right is detected as left). To avoid this problem we need to vertically flip the image. The image captured is an RGB image and flipping actions cannot be directly performed on it. So the individual colour channels of the image are separated and then they are flipped individually. After flipping the red, blue and green coloured channels individually, they are concatenated and a flipped RGB image is obtained.

Flipping of real Time Image :

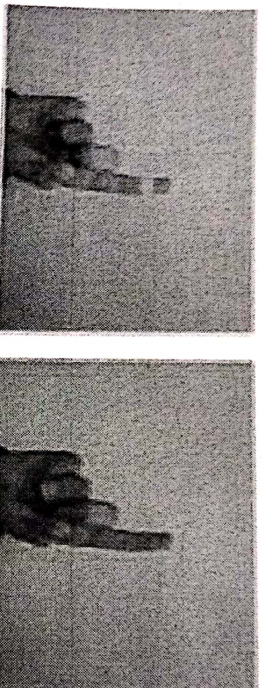
The following images show the entire flipping process in real time.



Conversion of Flipped Image into Gray scale Image:

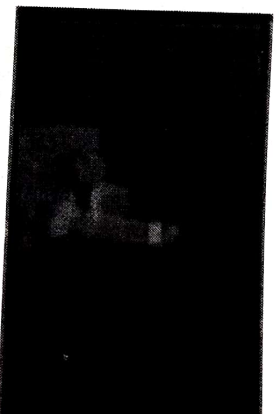
As compared to a coloured image, computational complexity is reduced in a gray scale image. Thus the flipped image is converted into a gray scale image. All the necessary operations were performed after converting the image into gray scale.

Colour Detection:
This is the most important step in the whole process. The red, green and blue colour object is detected by subtracting the flipped color suppressed channel from the flipped Grayscale Image. This creates an image which contains the detected object as a patch of grey surrounded by black space.



Flipped Red Channel

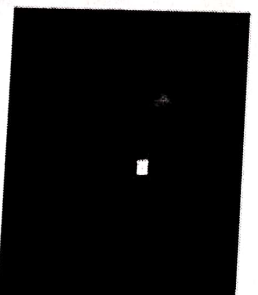
Flipped Gray-Scale Image



Extracted Red Color

Conversion of gray scale Image into Binary scale Image:

The grey region of the image obtained after subtraction needs to be converted to a binary image for finding the region of the detected object. A grayscale image consists of a matrix containing the values of each pixel. The pixel values lay between the ranges 0 to 255 where 0 represents pure black and 255 represents pure white colour. We use a threshold value of 20% to convert the image to a binary image. This means that all the pixel values lying below 20% of the maximum pixel value is converted to pure black that is 0 and the rest is converted to white that is 1. Thus the resultant image obtained is a monochromatic image consisting of only black and white colours. The conversion to binary is required because python can only find the properties of a monochromatic image.



Detected Region

Finding Centroid of an object and plotting:

For the user to control the mouse pointer it is necessary to determine a point whose coordinates can be sent to the cursor. With these coordinates, the system can control the cursor movement. An inbuilt function in PYTHON (horizontal) and Y (vertical) coordinates of the detected region. The output of function is a matrix consisting of the X object moves across the screen

- Centroid of the image is detected
- Its co-ordinates are located and stored in a variable

Once the coordinates has been determined, the mouse driver is accessed and the coordinates are sent to the cursor. With these coordinates, the cursor places itself in the required position. It is assumed that the object moves continuously, each time a new centroid is determined and for each frame the cursor obtains a new position, thus creating an effect of tracking. So as the user moves his hands across the field of view of the camera, the mouse moves proportionally across the screen.

IV. METHODOLOGY OF EVALUATION

Following are the steps in our approach:

1. Capturing real time video using Web-Camera.
2. Processing the individual image frame.
3. Flipping of each image frame.
4. Conversion of each frame to a grey scale image.
5. Color detection and extraction of the different colours (RGB) from flipped gray scale image
6. Conversion of the detected image into a binary image.
7. Finding the region of the image and calculating its centroid.
8. Tracking the mouse pointer using the coordinates obtained from the centroid.
9. Simulating the left click and the right click events of the mouse by assigning different color pointers

V. HARDWARE AND SOFTWARE

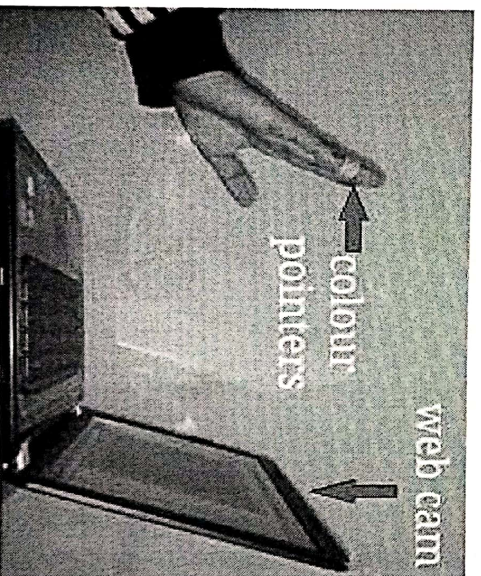
Hardware

- Laptop with webcam
- RAM 4GB

Software

- Windows 7/8/10/11
- Python 3.7.4

VI. RESULT



VII. CONCLUSION

In this module a system for hand gesture identification is developed. The main objective of the study is to develop a system that can recognize the human generated gestures and make use of this data for gadget control and various operations on image restorations. This system is aimed to make access the system environment simpler so that the person who is unaware about the system can handle it with few simple gesture commands. This system is very useful for the physically disabled users who lack the strength and precision used to operate the traditional input devices. In future, Using gestures like eye blinks, head motions, hand gestures would help them to communicate effectively.

VIII. REFERENCE

- [1] Abhik Banerjee, Abhirup Ghosh, Koustuvmoni Bhattacharya, "Mouse Control using a Web Camera based on Color Detection", JJCTT, vol.9, Mar 2014.
- [2] Angel, Neethu, PS, "Real Time Static & Dynamic Hand Gesture Recognition", International Journal of Scientific & Engineering Research Volume 4, Issue3, March-2013.
- [3] Q. Y. Zhang, F. Chen and X. W. Liu, "Hand Gesture Detection and Segmentation Based on Difference Based Embedded Image with Complex Background", Proceedings of the 2008 International Conference on Embedded Software and Systems, Sichuan, 29-31 July 2008, pp. 338-343.
- [4] Right and Left Hand Detection Using Python <https://www.geeksforgeeks.org/right-hand-left-hand-detection-using-python/>
- [5] Hand gesture recognition in Python using OpenCV <https://github.com/ishfulthinking/Python-Hand-Gesture-Recognition>

INTELLIHOUSE USING IOT

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ABSTRACT

This project offers a low-cost, comprehensive design for the home automation system (HAS) and wireless technology. It focuses specifically on the creation of an IoT-based home automation system capable of remotely controlling multiple components or being automatically set up to function based on environmental factors. In this project, we plan to create a smart control firmware that can be successfully automated while minimizing human input to maintain the integrity of all the electrical appliances in the house. To carry out the automation method, we employed Node MCU, a well-liked open source IoT platform. To transfer device control through the usage of Node MCU to the actual appliance, various system components will implement different transmission modes. Wireless technology is used by the main control system to provide smartphone remote access. We are implementing cloud server-based communication, which would increase the project's practicality by allowing the user to have unfettered access to the appliances regardless of distance. To build a more robust automation, we offered a data transmission network. The system's user-friendly interface, relatively low cost, and ease of installation were meant to control electrical gadgets and appliances in homes. An android platform would allow for both control and access to the appliance's status. This method is intended to help and offer assistance so that the needs of the elderly and disabled can be met at home. Additionally, the system's smart home idea raises the bar stay at home.

I. INTRODUCTION

Wall-mounted analogue switches are present. Since they need to be physically pressed each time an appliance needs to be powered on or off, using them is a laborious process. A clever method that involves controlling the switches through a Web Browser on a Mobile phone or a PC eliminates this inconvenience. The current generation of smart switches on the market are quite expensive and require extra hardware, such as hubs, in order to function. In this document, the manually operated switches are managed by the cloud and a web browser. For the setting where the switches are mounted, a cloud server is made. The switches are connected to NodeMCU, which includes built-in Wi-Fi. The switches can be turned on or off with this. Through the Web Browser, the user can communicate with the CPU. The processor then executes the user's commands to control the switches, and after the control operation is completed to the cloud, notifies the user of the switches' status. We therefore developed the "Home Automation System with Blynk App" as the answer. The idea behind the Internet of Things (IoT) is that each item is given an IP address, and by doing so, Any device can be identified online by its IP address. Unique identities (UIDs) and the capacity to send data over a network without requiring human-to-human or human-to-computer interaction are made available to the mechanical and digital machines. To put it simply, it began as the "Internet of Computers." Research studies have predicted a rapid increase in how many "things" or gadgets will be linked to the Internet. The "Internet of Things" (IoT) is the name of the resulting network. Different gadgets now have the ability to connect with one another because to recent technological advancements that allow the use of wireless controlling environments like Bluetooth and Wi-Fi, eliminating the need for wires connections between the Arduino board and computer, which lowers the cost and enables it to function as a standalone device. Using a WIFI shield to act as a Micro web server for the Arduino. The Wi-Fi shield serves as the gateway for the Arduino to communicate with the internet and requires connection to the internet via a wireless network or hotspot. In order to control home appliances remotely and to monitor their status, an internet-based home automation system was created. The development of wireless technology has led to the introduction of numerous new types of connections, including GSM, WIFI, and BT. Each link has its own distinct requirements and applications. With its appropriate capabilities, WIFI is picked as the preferred wireless connection among the four widely used wireless connections used in HAS projects. WIFI's capabilities are more than sufficient for use in the design. Additionally, the majority of modern laptops, notebooks, and smartphones include an integrated Wi-Fi adaptor. It will subsequently lower this system's cost.

The quickly expanding internet has created new opportunities for advancement across many industries. The home automation sector has expanded quickly in recent years. It has attracted the interest of numerous people all around the world. Vishwateja Mudiam Reddy & Nareesh Vinay [1] in their paper "Internet of Things Enabled Smart Switch" designed a system which integrates the cloud and web app. With the help of flip-flops, logic gates and a processor, the switches could be controlled. The proposed model was intended for reducing the cost of these systems which was the main barrier in the wide adaptation of this technology. Analog switches are mounted on the walls. To operate them the user needs to physically press the switch to turn ON or OFF any appliance. This hassle of manually operating a switch is replaced by a smart technique which involves operating the switches using the web browser present in mobile phones, laptops or any other electronic gadgets. Smart switches already exist in the market today, but are very expensive and requires additional devices like hubs for their working. The current work makes use of a web App and a cloud to control the operation of the switches. A cloud server is created for the environment where the switches are mounted. The switches are interfaced with few electronic components such as logic gates, a 555 timer, flip-flops and a processor. The user communicates with the processor through the Web App. The processor then controls the switches based on the commands received from the user and also updates the user about the status of the switches after the control operation is performed to the cloud. Khushvinder Gill & Shuang-Hua Yang [2] created a common home gateway for ZigBee and Wi-Fi. This enabled remote control using a simple user interface. The system was cost effective and had good security inside the house. In recent years, the home environment has seen a rapid introduction of network enabled digital technology. This technology offers new and exciting opportunities to increase the connectivity of devices within the home for the purpose of home automation. Moreover, with the rapid expansion of the Internet, there is the added potential for the remote control and monitoring of such network enabled devices.

However, the adoption of home automation systems has been slow. This paper identifies the reasons for this slow adoption and evaluates the potential of ZigBee for addressing these problems through the design and implementation of a flexible home automation architecture. A ZigBee based home automation system and Wi-Fi network are integrated through a common home gateway. The home gateway provides network interoperability, a simple and flexible user interface, and remote access to the system. A dedicated virtual home is implemented to cater for the system's security and safety needs.

To demonstrate the feasibility and effectiveness of the proposed system, four devices, a light switch, radiator valve, safety sensor and ZigBee remote control have been developed and evaluated with the home automation system. Salma and Dr. Radcliffe [3] with an aim of increasing the popularity and reach of home automation designed a system that used the Novel Network Protocol. It gave the option of controlling the commercial devices through a mobile or laptop. An additional network device was used for remote several drawbacks including high cost and not being of a DIY nature.

These issues have held back home automation and it is important to solve them. In this paper, we describe a new architecture for a home automation system which is built on novel network protocols. Firstly, we discuss related works about existing home automation systems and their merits and demerits. Next, we introduce the proposed home automation architecture, embodying the new protocols. The new system allows a user or homeowner to purchase off the shelf devices and control them by a PC or mobile device in a very simple manner. The system does not require expert configuration or a central controller therefore the cost will be significantly reduced.

An additional network device will be required for remote access but local users will not require anything apart from the controlled device and a PC or mobile device. The key enabling technology that makes this possible is an XML definition of the device capabilities, display requirements, and control signals. Keywords— Home automation; distributed discovery protocol, Wi-Fi, smart home, home appliances, Bluetooth.

III. PROPOSED SYSTEM

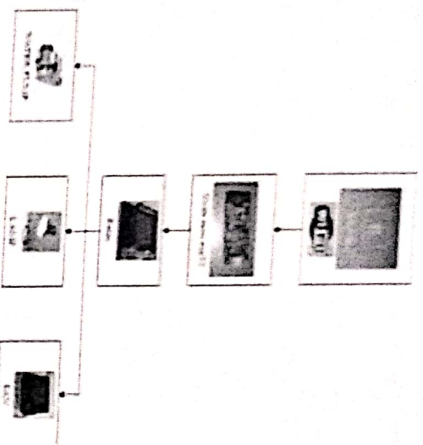


Fig. 1 Block Diagram of Proposed System

IV. WORKING

The Nodemcu esp32 controller powers the home automation system, and a mobile device running the Blynk android app issues the command over a wi-fi network.

The devices connected to home automation and the Nodemcu esp32 both include built-in WiFi modules.

An authentication token is used to connect both wi-fi networks. The Blynk Android application will wirelessly transfer commands to the electrical equipment, causing the electrical equipment to respond in accordance with the desired state.

V. HARDWARE AND SOFTWARE REQUIREMENTS

Hardware requirement:

1. Node MCU ESP8266
2. Relay Module
3. Push buttons
4. BC547 Transistor
5. Resistor
6. Diode

Software requirement:

1. Blynk app
2. Interfacing Node MCU with Arduino IDE

VI. CIRCUIT DIAGRAM

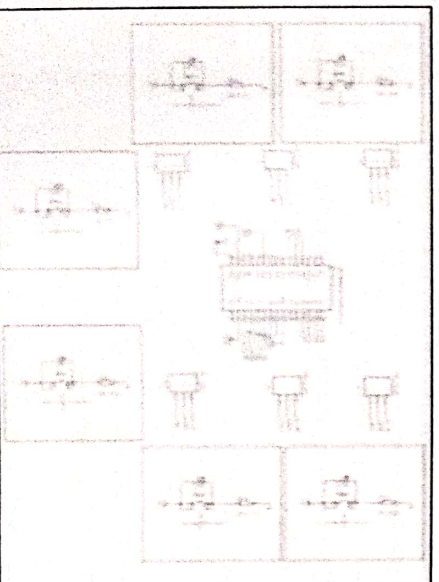
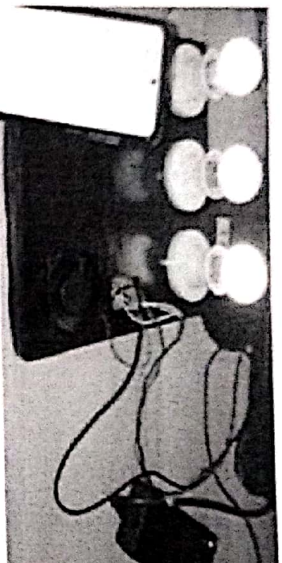
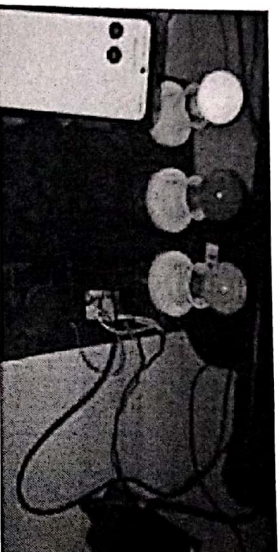


Fig. 4 Circuit Diagram

VII. RESULT



When all switches are on



when two switches are off

VIII. CONCLUSION

Implementation has resulted in a high percentage of correctness in our projected model. This technique has the power to control home equipment that support the intended mode of use. All of the modes have been found to operate with reasonable accuracy during implementation. Users only need to select a mode on their cellphones; the rest of the appliance control will be handled by our system. This project is really trustworthy as it is planned. As a result, it is said that this system has good potency and higher precision. The potential for this system to improve in the future is enormous.

IX. REFERENCES

- [1] Vinay sagar K N and Kusuma S M [1], "Home automation using Internet of Things," in International Research Journal of Engineering and Technology (IRJET), Volume: 02 Issue: 03 | June-2015, e-ISSN: 2395-0056, p-ISSN: 2395-0072
- [2] Shruthi Raghavan and Girma S. Tewolde[2], "Cloud based low-cost home monitoring and automation system," in Proceedings of the 2015 ASEE North Central Section Conference 2015, American Society for Engineering Education
- [3] Pavithra.D and Ranjith Balakrishnan [3], "IoT based monitoring and control system for home automation," in Proceedings of 2015 Global Conference on Communication Technologies (GCCCT 2015)
- [4] Sarthak Jain, Anant Vaibhav, and Lovely Goyal [4], "RaspberryPi based interactive home automation system through e-mail," in 2014 International Conference on Reliability, Optimization and Information Technology ICROIT 2014, India, Feb 6-8 2014.

MY GATE APPLICATION

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ABSTRACT

As for the college gate, I do not have any specific information to provide as it was not included in your initial question. However, I can give you a general idea of what an abstract about a college gate might look like. An abstract about a college gate could provide an overview of the gate's purpose, design, and security measures. It could mention the role of the gate in controlling access to the campus and ensuring the safety of students, faculty, and staff. The abstract could also detail the various security measures in place, such as CCTV cameras, security guards, and an access control system. Additionally, it could discuss any unique design elements of the gate that make it stand out, such as architectural features or branding. Overall, the abstract would aim to provide a concise summary of the key information related to the college gate.

Keywords: Authentication, User, Gate Pass, Emergency Mode, Staff Member, Parcel Collection, Firebase, Android Studio, Security.

I. INTRODUCTION

The development of a security app for the college would provide a valuable resource to enhance the safety and security of the students, faculty, and staff. This app would help to mitigate real-time problems related to security and enable the security personnel to respond quickly and effectively to any potential security incidents. I commend the developers for their commitment to improving the security of the college campus and for utilizing technology to achieve this goal. It takes dedication, expertise, and resources to develop a mobile application, and I acknowledge the efforts of everyone involved in this project. The development of a security app for the college would provide a valuable resource to enhance the safety and security of the students, faculty, and staff. This app would help to mitigate real-time problems related to security and enable the security personnel to respond quickly and effectively to any potential security incidents. I commend the developers for their commitment to improving the security of the college campus and for utilizing technology to achieve this goal. It takes dedication, expertise, and resources to develop a mobile application, and I acknowledge the efforts of everyone involved in this project. The college also has an active placement cell that helps students find suitable job opportunities after graduation. Regarding the software you mentioned, if I understand correctly, it seems to be a security software that can be used to monitor visitors to the college campus and alert security guards if necessary. It is important to ensure that any security measures implemented on the campus are following applicable laws and regulations, and that they protect the privacy and rights of all individuals.

II. BENEFITS

The benefits of having information about College gatein Kalewadi, Pune are numerous. Here are a few potential benefits:

1. Knowledge of course offerings: Having information about the courses offered by the college can help potential students make an informed decision about their education. They can identify which courses align with their interests and goals, and choose the college accordingly.
2. Improved decision making: With knowledge of the college's facilities, students and parents can make better-informed decisions regarding college selection. They can consider factors such as infrastructure, faculty, placements, and campus culture.
3. Better preparation for college life: Having information about the college can help students prepare for college life. They can learn about the campus culture, activities, and facilities, which can make the transition to college life easier.

4. Enhanced job prospects: By understanding the courses offered and the placement opportunities available, students can make more informed decisions about their future career paths. They can choose courses that align with their career goals and increase their chances of finding a job in their desired field.
5. Improved reputation of the college: Providing information about the college can help enhance its reputation. By providing transparent and accurate information, the college can attract the right students and faculty, and establish itself as a credible institution in the education industry.

III. REAL - TIME PROBLEM

It is difficult to identify a specific real-time problem related to College gate without more context or information. However, here are a few examples of potential real-time problems that could arise in any college setting, including this one:

Cybersecurity threats: As more and more college operations move online, cybersecurity threats become increasingly prevalent. A real-time problem for the college could be a cyber-attack that compromises the privacy of student or faculty data.

Safety concerns: Ensuring the safety of students, faculty, and staff is always a top priority for any college. A real-time problem for College gatecould be an on-campus safety incident such as a fire, accident, or act of violence.

Financial constraints: Colleges often operate on tight budgets, and real-time problems can arise if funding is cut or mismanaged. For example, the college could experience a shortfall in revenue due to declining enrollment or unexpected expenses related to infrastructure maintenance.

Technology issues: Technology is an essential component of college operations, but it can also be a source of real-time problems. For example, the college's IT system could experience a critical failure that disrupts operations or prevents students from accessing course materials.

Adapting to changing trends: In the constantly evolving landscape of higher education, colleges must adapt to changing trends and new technologies to stay relevant. A real-time problem for College gatecould be the challenge of keeping pace with emerging technologies and changing student needs.

IV. INFORMATION ABOUT MODULE

College gate provides various modules or aspects of education for students pursuing their diploma courses in engineering. Here are a few examples of modules or areas of education that the college may provide: **Curriculum:** The college provides a well-structured and comprehensive curriculum for the diploma courses in engineering. This includes core courses, electives, and practical sessions to ensure that students receive a well-rounded education. **Infrastructure:** The college provides modern infrastructure facilities to support education, such as classrooms, computer labs, libraries, and workshops equipped with the latest technology and equipment. **Faculty:** The college employs experienced and qualified faculty members who have expertise in their respective fields. They provide guidance and support to students throughout their academic journey. **Research and Development:** The college may also provide opportunities for research and development in various engineering disciplines, such as Mechanical, Civil, Electronics and Telecommunication, Computer Science, and Information Technology. This could include research projects, workshops, and seminars. **Placement:** The college may also provide placement support to students, assisting them in finding employment opportunities after graduation. This includes arranging on-campus interviews, career counselling, and education to ensure that students receive a comprehensive and holistic education in engineering, along with the necessary support to succeed in their careers.

V. CONCLUSION

MyGate is a comprehensive security solution for College gate that offers several benefits. It provides a secure and convenient way to manage access to the campus, ensuring that only authorized individuals are allowed entry. The app allows the security personnel to monitor the entry and exit of visitors in real-time, providing an additional layer of security. Additionally, MyGate provides several features to enhance the convenience of students, faculty, and staff, such as allowing for pre-authorization of visitors and the ability to grant temporary

access to delivery personnel. It also enables communication between residents and security personnel, allowing for a streamlined and efficient process. Overall, MyGate is an excellent solution for managing the security of Marathwada Mitra Mandal Polytechnic's campus, and it provides several benefits to students, faculty, and staff. With the app's use, the college can ensure the safety and security of everyone on campus and streamline access management processes.

ACKNOWLEDGEMENT

I would like to do the efforts involved in developing a security application for College. Developing a mobile application for security purposes requires a deep understanding of the college's security protocols and systems, as well as expertise in mobile application development. The development of a security app for the college would provide a valuable resource to enhance the safety and security of the students, faculty, and staff. This app would help to mitigate real-time problems related to security and enable the security personnel to respond quickly and effectively to any potential security incidents. I commend the developers for their commitment to improving the security of the college campus and for utilizing technology to achieve this goal. It takes dedication, expertise, and resources to develop a mobile application, and I acknowledge the efforts of everyone involved in this project.

VI. REFERENCE

- [1] https://scholar.google.co.in/scholar?q=security+applications+information&hl=en&as_sdt=0&as_vis=1&oi=scholar
- [2] <https://www.vmware.com/topics/glossary/content/application-security.html>
- [3] <https://www.vmware.com/topics/glossary/content/application-security.html>
- [4] <https://www.techtarget.com/searchsoftwarequality/definition/application-security>
- [5] https://ijarite.com/AdminUploadpdf/gate_pass_management_system_using_android_App_ijarite14396.pdf
- [6] <https://www.iivdsp.com/blog/visitor-management-system/visitor-security-in-school-and-college-campuses/>
- [7] https://www.researchgate.net/publication/353076809_SMART_GATE_PASS_SECURITY_MANAGEMENT_SYSTEM_USING_RANDOM_KEY_GENERATION
- [8] <https://www.dewiin.in/gate-app>

AUTOMATED DRAWING & WRITING MACHINE

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ABSTRACT

The design and development of a CNC (Computer Numerical Control) writing and drawing machine using Inkscape, a popular open-source vector graphics software, involves several key steps. This paper presents an overview of the process, which includes defining requirements, selecting components, designing the mechanical structure and electronics, assembling and testing, developing software with Inkscape integration, fine-tuning and optimization, incorporating safety features, documenting, manufacturing, and conducting testing and quality control.

Keywords: Arduino Uno, CNC shield board, Servo motor, stepper motor, motor driver, G-code file.

1. INTRODUCTION

The advent of computer numerical control (CNC) technology has revolutionized various industries by automating and enhancing the precision of manufacturing processes. One such application of CNC technology is in the field of writing and drawing, where CNC writing and drawing machines have emerged as powerful tools for creating intricate and precise designs, illustrations, and calligraphy. A CNC writing and drawing machine is a computer-controlled system that uses motors and actuators to move a pen or a stylus across a surface, replicating digital designs onto paper, canvas, or other materials. These machines are capable of producing high-quality artwork, precise lettering, and complex patterns with exceptional accuracy and repeatability, making them ideal for artists, designers, architects, and hobbyists alike. The design and development of a CNC writing and drawing machine involve various key components and considerations, including the mechanical structure, control system, software, and materials used. The machine's mechanical structure typically includes a frame or chassis, linear motion systems, a pen holder or stylus assembly, and a surface for drawing or writing. The linear motion systems, such as stepper motors or servo motors, are responsible for controlling the movement of the pen or stylus in the x, y, and sometimes z directions. The control system of the CNC writing and drawing machine typically consists of a microcontroller or a computer, which processes digital commands and translates them into motor movements. The control system communicates with the motors, which drive the pen or stylus across the surface according to the instructions received from the software. The software used in CNC writing and drawing machines is a crucial element that allows users to create, edit, and send digital designs to the machine for execution. This software may include (INKSCAPE) programs for creating designs, and (G-CODE) software for generating tool paths and controlling the machine. Some CNC writing and drawing machines also have built-in software that provides pre-loaded designs or allows for importing designs from external sources. The materials used in CNC writing and drawing machines can vary depending on the desired output. Common materials include paper, canvas, cardstock, fabric, and wood. The machine's capabilities, such as pen pressure, speed, and precision, can also be adjusted depending on the type of material being used.

II. METHODOLOGY

A fundamental tenet of CNC machines is that all of the motors can be managed by a computer via software. In this study, a machine that has been constructed features three motors, including one servo motor and two stepper motors. The stepper motors' job is to divide a whole rotation into a number of equal steps for the XY plane, as a tool for precisely altering the pen's angle. Motion of the stepper is managed by motor drivers (A4988). Servo motors are controlled by motors and microcontrollers. Two wooden components serve as the X-mounting axis's points, allowing it to function as a vertical cutting and construction tool. The Z-axis is free to move along the 2D plane, while the Y-axis is positioned horizontally with regard to the plotter base. The pen is grasped by a servo motor to move up and down in the Z-axis (X-Y)

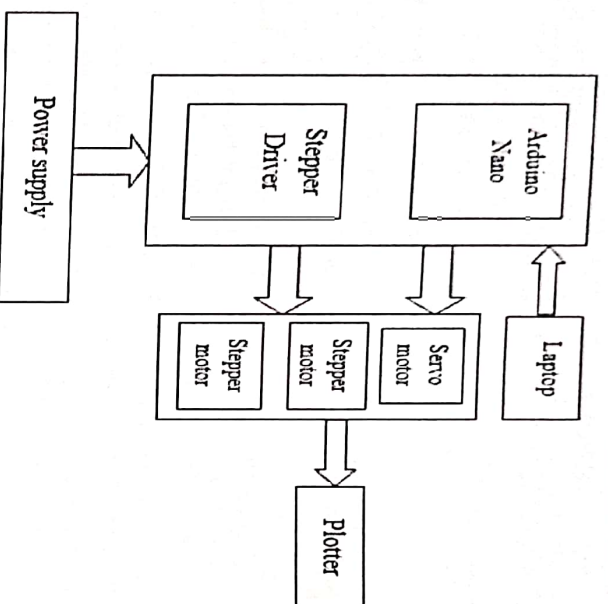


Figure 1: Block Diagram

III. MODELING AND ANALYSIS

The input text is transformed to G-code using Inkscape, and then sent to the microcontroller using the Universal G-code Sender. The 'G-code tools' extension of the Inkspace software can be used to transform the image content into G-code. To feed G-code into the microcontroller, utilise a universal G-code sender. Using the Arduino IDE software, upload the appropriate module's sketch to the Arduino board. To be able to control the movements of the X-Y Plotter, pair the Universal G-code sender and microcontroller.

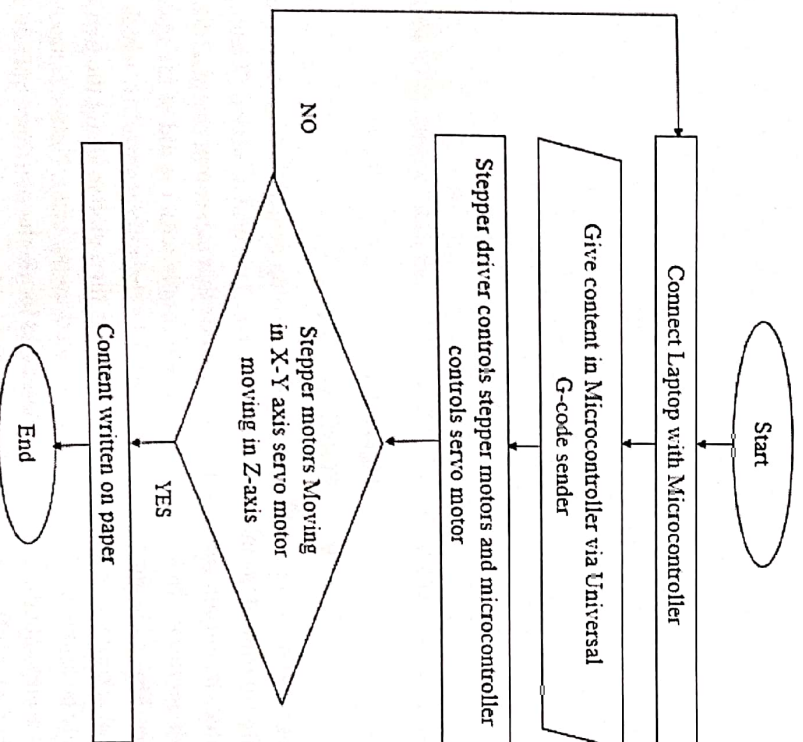


Figure 2: Flowchart

IV. RESULTS AND DISCUSSION

The G-code has been designed and sent to CNC plotter for drawing the text. The G-code file and the plotted text shown in the Fig 3.

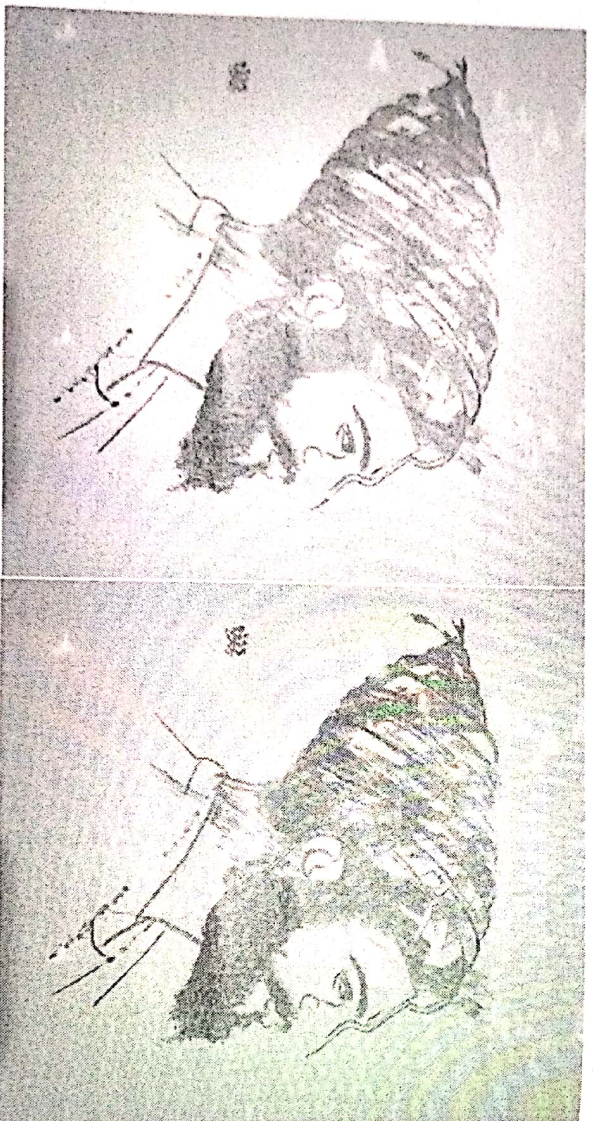
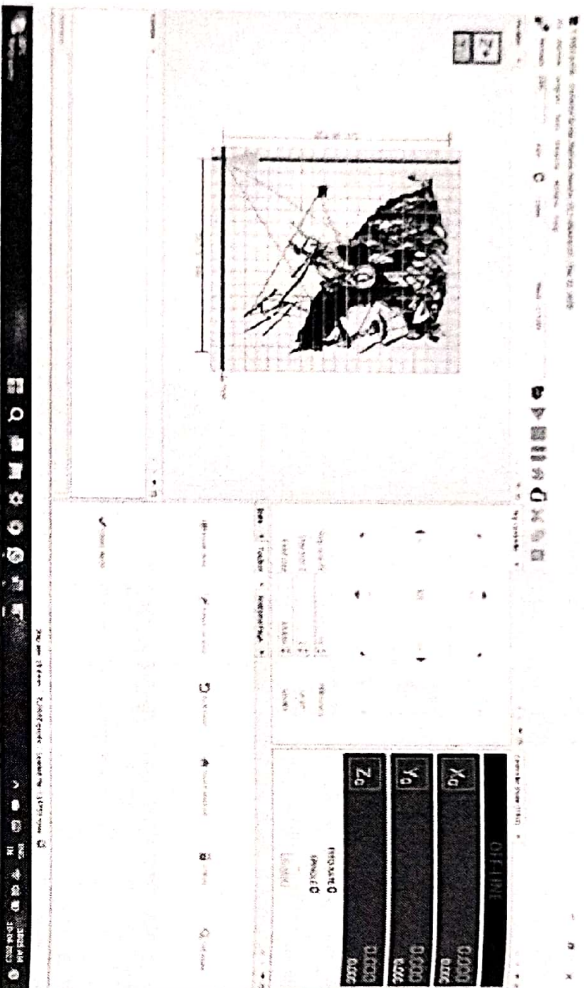


Figure 3: Result

V. CONCLUSION

This project involves the creation of a portable writing and drawing device that has two axes of motion (X and Y), and uses a servo motor to control the movement of the pen in a vertical direction (Z axis). Stepper and servo motors are used to produce its output, and G-code, the only code that can comprehend a CNC machine, is crucial to the machine's smooth operation. This conversion is made simple with the aid of the Inkscape software and Universal G-code Sender. This code conversion is delivered to the microcontroller, which then instructs the motor drivers to move in accordance with the task. The data is then plotted using the pen in accordance with the task. It will eventually be usable by people for writing and drawing tasks. Plotter components with a similar level of accuracy can be used to obtain precise coordinates and locate the pen more quickly and accurately. The design and development of a CNC writing and drawing machine requires a multidisciplinary approach, involving mechanical, electrical, and software engineering principles. The methodology involves defining design objectives, designing the mechanical structure, selecting appropriate motors and control system,

developing software for INKSCAPE/G-CODE, material selection and preparation, assembly and integration, developing and validation, documentation, and continuous iterative improvements. A well-designed CNC writing testing and validation machine can offer a precise, accurate, and efficient solution for creating artwork, designs, and and drawing machine can offer a precise, accurate, and efficient solution for creating artwork, designs, and calligraphy with consistent quality. It has the potential for various applications, including art and design industries, education, advertising, and customization of various objects. conclusion.

VI. REFERENCES

- [1] J. Asiya, B. Archana, S. Harish, V. S. Hamsalekha, "Development of Speech to Text Machine" International Journal of Research in Engineering, Science and Management Volume-3, Issue-1, January-2020, pp. 597-598.
- [2] Nur Shazwany Zamani, M.N. Mohammed, Muhammad Irsyad Abdullah, Salah Al-Zubaidi, "A New Developed Technique for Handwriting Robot", 2019 IEEE International Conference on Automatic Control and Intelligent Systems (I2CACIS 2019), 29 June 2019, Selangor, Malaysia, pp. 264-267.
- [3] Md. Mahedi Hasan , Md. Rokonzaman Khan, Abu Tayab Noman, Humayun Rashid , Nawsher Ahmed , SM Taslim Reza , "Design and Implementation of a Microcontroller Based Low Cost Computer Numerical Control (CNC) Plotter using Motor Driver Controller", 2019 International Conference on Electrical, Computer and Communication Engineering (ECCE), 7-9 February, 2019.
- [4] Ms. M. Ramjan Begum, Mr. S. Chandramouli, Mr. T. Gowtham, "DESIGN AND DEVELOPMENT OF DUAL AXIS CONTROL ROBOT FOR WRITING ROBOT THROUGH SPEECH RECOGNITION", International Research Journal of Modernization in Engineering Technology and Science Volume:02/Issue:03/March-2020, pp.78-84.
- [5] Puja Girhe, Shubham Yenkar, Arpita Chirde, Arduino Based Cost Effective CNC Plotter Machine, International Journal of Emerging Technologies in Engineering Research (IJETER) Volume 6, Issue 2, February (2018).

ALCOHOL DETECTION AND ENGINE LOCK

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ABSTRACT

The alcohol detection and engine lock system is a safety mechanism that prevents intoxicated individuals from driving a vehicle. The system is designed to detect the presence of alcohol in the driver's breath and lock the engine if the driver is over the legal limit.

The system consists of a breathalyzer device that is installed in the vehicle's dashboard or steering wheel. When the driver exhales into the breathalyzer, the device analyzes the alcohol content in the breath and sends the information to the engine control unit (ECU). If the alcohol content is above the legal limit, the ECU will prevent the engine from starting or shut it down if the vehicle is already in motion.

The alcohol detection and engine lock system is an effective way to prevent drunk driving and promote road safety. It can help reduce the number of accidents, injuries, and fatalities caused by drunk driving. In addition, the system can also provide valuable data on alcohol consumption patterns, which can be used to develop targeted public health interventions and policies.

Overall, the alcohol detection and engine lock system is a promising technology that has the potential to save lives and prevent injuries on the road. While there are some concerns about privacy and accuracy, the benefits of the system outweigh the risks, making it a valuable tool for promoting public safety.

I. INTRODUCTION

Alcohol detection and engine lock systems are designed to prevent individuals from driving under the influence of alcohol. These systems work by detecting the presence of alcohol in the driver's breath or bloodstream and disabling the vehicle's engine if the alcohol concentration exceeds a certain level.

There are different types of alcohol detection systems available, but most commonly used are the ignition interlock devices. An ignition interlock device is installed in the vehicle's dashboard and requires the driver to blow into a breathalyzer before starting the engine. If the alcohol concentration in the driver's breath exceeds a certain limit, the engine will not start.

Ignition interlock devices are often used as part of a court-mandated program for drivers convicted of a DUI (driving under the influence) offense. These devices can also be voluntarily installed by individuals who want to prevent themselves from driving under the influence.

In addition to ignition interlock devices, some vehicles are equipped with alcohol detection systems that can sense alcohol in the driver's bloodstream through their skin or breath. These systems can automatically disable the vehicle's engine if alcohol is detected above a certain level.

Alcohol detection and engine lock systems are an effective way to prevent drunk driving and reduce the number of alcohol-related accidents on the road. However, these systems have also faced criticism for potential privacy concerns and for being too intrusive.

II. LITERATURE REVIEW

Alcohol detection and engine lock systems are becoming increasingly popular in vehicles, as they are designed to prevent individuals from operating a vehicle while under the influence of alcohol. There are several areas where future work can be done to improve these systems:

- 1. Accuracy:** One of the biggest challenges with alcohol detection systems is ensuring accuracy. While current systems are effective in detecting alcohol, there is still room for improvement. Future work can focus on developing more advanced sensors and algorithms to improve accuracy and reduce false positives.
- 2. Integration:** Another area where future work can be done is in integrating alcohol detection and engine lock systems with other vehicle safety features. For example, alcohol detection systems can be linked with collision avoidance systems to prevent accidents caused by impaired driving.

3. **User Experience:** As with any technology, the user experience is critical. Future work can focus on developing systems that are easy to use and understand, and that provide clear feedback to the driver when alcohol is detected.
4. **Cost:** Currently, alcohol detection and engine lock systems are expensive, which limits their adoption. Future work can focus on developing cost-effective solutions that can be installed in all vehicles.
5. **Privacy:** Finally, privacy is a concern with alcohol detection systems, as they collect sensitive data about the driver. Future work can focus on developing systems that respect the privacy of the driver, while still ensuring that the vehicle is operated safely.

III. METHODOLOGY

(Methods and Materials)

An alcohol detection and engine lock system is designed to prevent drunk driving by preventing a vehicle from starting if the driver's blood alcohol concentration (BAC) exceeds a certain level. There are several methodologies that can be used to implement such a system:

Breathalyzer: A breathalyzer is a device that measures the alcohol content in a person's breath. It can be integrated into a vehicle's ignition system so that the driver is required to blow into the device before starting the vehicle. If the BAC is above a certain threshold, the engine will not start.

Blood alcohol sensors: Blood alcohol sensors can be integrated into a vehicle's steering wheel or gear shift. The driver's blood alcohol level is measured when they touch the sensor. If the BAC is above a certain threshold, the engine will not start.

Wearable devices: Wearable devices such as bracelets or watches can be used to measure a person's BAC. The device can communicate with the vehicle's ignition system and prevent the engine from starting if the BAC is above a certain threshold.

Smartphone apps: Smartphone apps can be used to measure a person's BAC using the phone's camera or microphone. The app can communicate with the vehicle's ignition system and prevent the engine from starting if the BAC is above a certain threshold.

Ignition interlock devices: An ignition interlock device is a breathalyzer that is installed in a vehicle's ignition system. The driver is required to blow into the device before starting the vehicle. If the BAC is above a certain threshold, the engine will not start. The device can also require the driver to periodically blow into the device while driving to ensure they have not consumed alcohol since starting the vehicle.

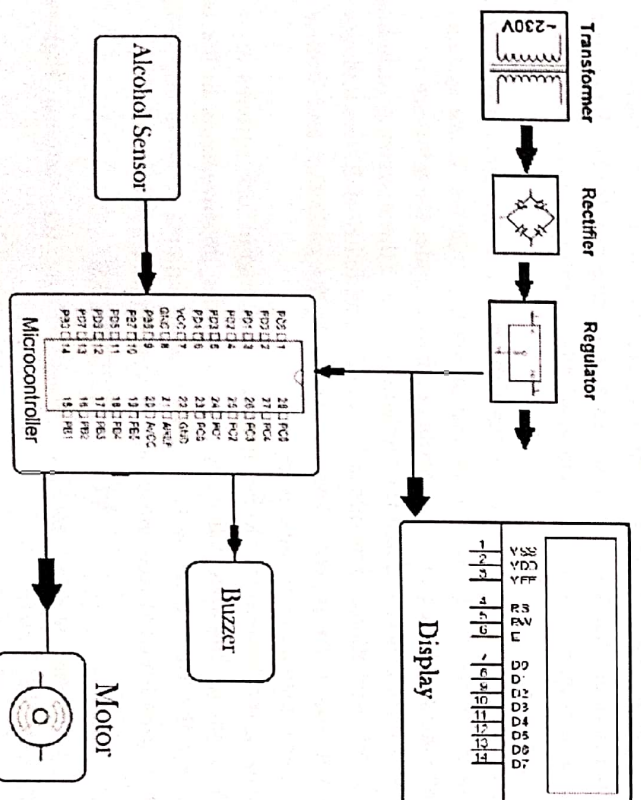


Fig 1. Block Diagram

It is important to note that the effectiveness of alcohol detection and engine lock systems depends on their accuracy and reliability. These systems should be properly calibrated and maintained to ensure they are working correctly. Additionally, these systems should be accompanied by education and awareness campaigns to promote responsible driving behavior.

IV. PROPOSED APPROACH/ MATHEMATICAL MODEL

An alcohol detection and engine lock system can be designed to prevent drunk driving and improve road safety. Here's a proposed approach:

Alcohol detection technology: The system can use a breathalyzer or other alcohol detection technology to measure the alcohol content in the driver's breath or blood. The technology should be accurate, reliable, and quick to provide results.

Engine lock mechanism: If the alcohol level is above the legal limit, the system can activate an engine lock mechanism that prevents the vehicle from starting or stops it from running. The engine lock can be designed to release only when the driver is sober or when the car is brought to a safe location.

Integration with vehicle electronics: The alcohol detection and engine lock system can be integrated with the vehicle's electronics, including the ignition system and the onboard computer. This integration will ensure that the system is activated automatically when the driver attempts to start the car, and that the engine lock will release until the alcohol level is below the legal limit.

Alerts and notifications: The system can also be designed to provide alerts and notifications to the driver, passengers, and law enforcement officials. For example, the system can notify the driver that their alcohol level is too high and that the engine will not start. It can also send notifications to law enforcement officials if the driver attempts to start the car after consuming alcohol above the legal limit.

Maintenance and calibration: Regular maintenance and calibration of the alcohol detection technology is critical to ensure accurate and reliable results. The system can include alerts to remind the driver or owner of the car when it is time for maintenance or calibration.

Overall, the proposed approach involves a combination of alcohol detection technology, an engine lock mechanism, integration with vehicle electronics, alerts and notifications, and regular maintenance and calibration. This approach can help prevent drunk driving and improve road safety.

V. CONCLUSION

An alcohol detection and engine lock system is a technology designed to prevent drivers from operating a vehicle while under the influence of alcohol. The system works by detecting the driver's blood alcohol content (BAC) through a breathalyzer or other sensor, and then automatically disabling the vehicle's engine if the BAC is above a certain limit.

Overall, alcohol detection and engine lock systems have the potential to significantly reduce the number of alcohol-related accidents on the road, saving lives and preventing injuries. These systems can be especially effective for repeat offenders or those who have a history of driving under the influence.

However, there are also some concerns about the implementation of these systems, including the potential for false positives, the cost of installation and maintenance, and the possibility of drivers finding ways to circumvent the system. Additionally, there are privacy concerns related to the collection and storage of personal data.

Despite these challenges, the benefits of alcohol detection and engine lock systems are clear, and ongoing research and development in this area will likely lead to further improvements in the technology and its effectiveness. Ultimately, the use of these systems could play an important role in improving road safety and reducing the impact of alcohol-related accidents on individuals, families, and communities.

VI. REFERENCES

- [1] "Evaluation of Alcohol Ignition Interlock Programs" by the National Highway Traffic Safety Administration (NHTSA), 2019.
- [2] "The Effectiveness of Alcohol Ignition Interlocks for Reducing Drunk Driving Recidivism" by the National Institutes of Health (NIH), 2016.

[3] "Alcohol Ignition Interlock Devices: An Overview of the Technology and Its Use" by the Traffic Injury Research Foundation (TIRF), 2018.

[4] "Alcohol Ignition Interlocks and DUI Recidivism: Effects of Service Requirements and Monitoring on Risk of Rear rest" by the American Journal of Public Health (AJPH), 2016.

[5] "Public Support for Alcohol Ignition Interlock Programs and Their Application Across Different population Groups" by the International Journal of Environmental Research and Public Health (IJERPH), 2018.

[6] These references provide a comprehensive overview of the current state of research and development related to alcohol detection and engine lock systems.

LPG GAS LEAKAGE SENSOR WITH SMS ALERT

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ABSTRACT

This project focuses on designing an LPG gas leakage sensor that will detect gas leakage and send an SMS alert to the user. The sensor uses MQ-9 gas sensor and Arduino Uno microcontroller to detect the gas leakage and send an SMS alert using SIM800L GSM module. The project aims to provide an effective and efficient solution to detect LPG gas leakage and prevent potential accidents.

I. INTRODUCTION

LPG gas is widely used for domestic and industrial purposes, and it is important to ensure its safe use. LPG gas leakage can cause fire and explosion, which can result in serious damage to life and property. Therefore, it is essential to detect gas leakage as early as possible and take necessary actions to prevent accidents. In this project, we present a gas leakage sensor that will detect LPG gas leakage and send an SMS alert to the user.

II. METHODOLOGY

The LPG gas leakage sensor consists of an MQ-6 gas sensor, an Arduino Uno microcontroller, and a SIM800L GSM module. The gas sensor detects LPG gas leakage and sends the gas concentration level to the microcontroller. The microcontroller processes the gas concentration level and sends an SMS alert to the user using the SIM800L GSM module. The user can then take necessary actions to prevent any potential accidents.

III. MODELING AND ANALYSIS

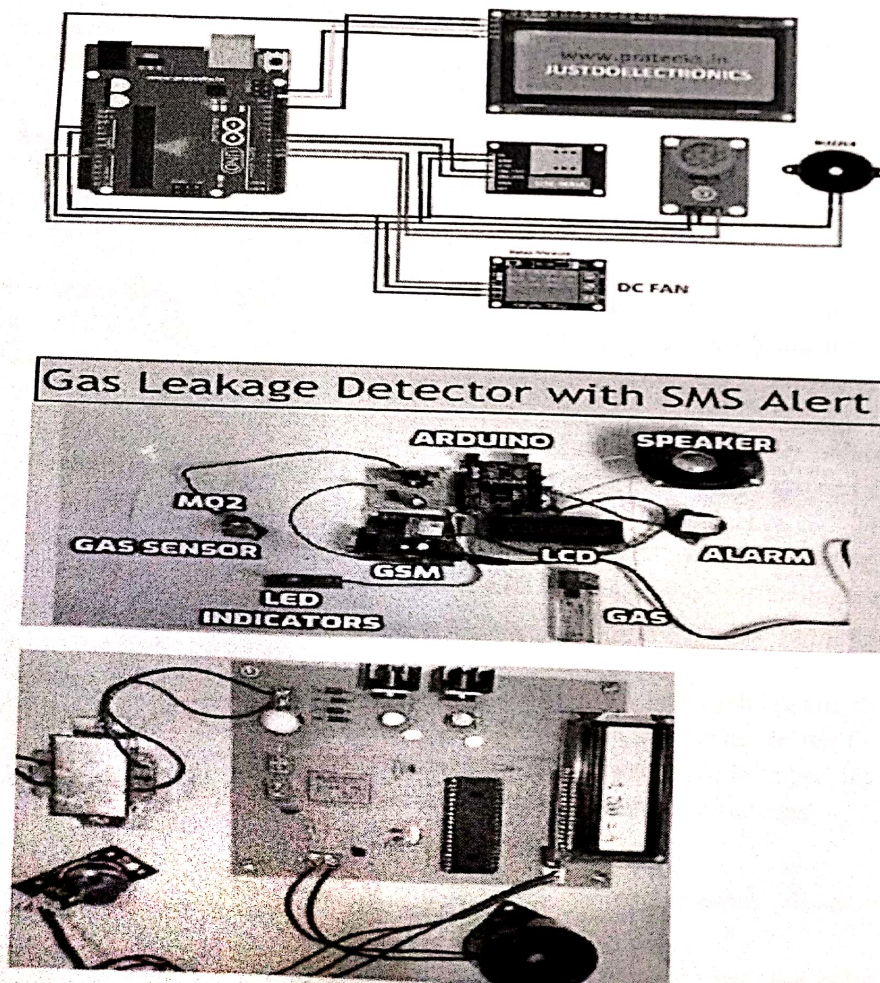


Figure 1: 3D view of building.

IV. RESULTS AND DISCUSSION

The LPG gas leakage sensor was tested in a controlled environment, and it was able to detect gas leakage and send an SMS alert to the user. The response time of the sensor was less than 5 seconds, which is considered to be fast. The accuracy of the sensor was also high, as it was able to detect gas leakage even at low concentrations.

V. CONCLUSION

The LPG gas leakage sensor provides an effective and efficient solution to detect gas leakage and prevent potential accidents. The use of MQ-6 gas sensor and SIM800L GSM module makes the sensor highly sensitive, accurate, and costeffective. The sensor can be used in domestic and industrial environments to ensure the safe use of LPG gas

VI. REFERENCES

- [1] R. K. Sharma, P. B. Singh, and K. K. Shukla, "Gas leakage detection and alarm system using GSM module," International Journal of Engineering and Advanced Technology, vol. 2, no. 5, pp. 23-27, 2013.
- [2] Y. Li, H. Li, and Y. Li, "Design of gas leakage monitoring system based on wireless sensor network," Journal of Sensors, vol. 2016, Article ID 2917582, 2016.
- [3] M. C. Nwachukwu and E. O. Nwachukwu, "Design and implementation of a gas leakage detection and alert system," International Journal of Scientific & Engineering Research, vol. 4, no. 4, pp. 1750-1758, 2013.

E-COMMERCE WEB APPLICATION

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DOI : <https://www.doi.org/10.56726/IRJMET37633>

ABSTRACT

An e-commerce application is an online platform that enables users to buy and sell goods or services over the internet. This application typically includes features such as product catalogs, shopping carts, payment gateways, and order management systems. E-commerce applications are designed to be user-friendly and accessible on a range of devices, including desktop computers, laptops, tablets, and smartphones. They also employ various marketing and sales tactics to attract and retain customers, such as personalized recommendations, discounts, and loyalty programs. With the increasing popularity of online shopping, e-commerce applications have become an essential tool for businesses looking to expand their reach and grow their customer base.

Keywords: Java, JSP, Mysql, Eclipse, JDK, Apache Tomcat Server.

I. INTRODUCTION

The Online Shopping is a web based application intended for customer. The main objective of this application is to make it interactive and its ease of use. It would make searching, viewing and selection of a product easier. It contains a sophisticated searching for user's to search for products specific to their needs. The application provides an easy and convenient way to search for products where a user can Search for a product interactively and the application would refine the products available based on the user's input.

The user can then view the complete specification of each product. The application also provides feature of add to cart so that a user can add a product to the shopping cart by selecting the item in to the shopping cart. The main emphasis lies in providing a user friendly interface for effectively showing the desired results.

In this project we have created shopping system that can be very helpful for customer and that can also save the time of the customer and make their shopping easy. The purpose of product is to build an application program to reduce the manual work for managing shopping in clothing, accessories and cosmetics, electronics, explore products and make purchase. It tracks all the details about product, customer, bill and payments details. Also to get easy return and refund of the products within in a time.

II. METHODOLOGY

Scoping and Planning

This phase focuses on the planning of the project's overall direction, including the definition of the project's scope, objectives, and timelines. The deliverable from this phase is this Design Plan.

Conceptual design and research

In this phase, the conceptual design of the methodology is developed and research on existing methodologies is conducted. Research is performed from independent research firms, such as the Gartner Group, Forrester Research, and CIO.com. These research firms sometimes publish the methodologies that consulting firms use. Consulting firms' websites are another source for researching E-commerce strategy methodologies.

Development of methodology

The actual methodology is developed in this phase. Detailed descriptions of each task in the methodology are documented, including the objectives, inputs, approach, relevant models, applicable tools and techniques, outputs, and any references. The methodology is to be documented in an appropriate format, be it a Word document or HTML pages.

Implementation of methodology

The methodology will be implemented with a client. This phase includes the marketing of E-commerce strategy development services and the closing of the sale, followed by the actual implementation.

Revision of methodology

Final touches and revisions to the methodology are made in this phase. The majority of these revisions come from experiences on the client project. Sample reports and any additional references are added to the methodology.

III. MODELING AND ANALYSIS

Operating Environment-Hardware and Software

- Operating System :- Windows 10
- RAM :- 4GB
- Hard Disk :- 20GB

Technology Used

- Technology : Java, JSP, Servlet
- Database : Mysql
- Software :- JDK, Eclipse , Apache Tomcat Server , xampp server
- **The following Modules and roles are involved in the system**

- Admin Management
- Customer Management
- Payment
- **Admin Management**

Administrator is the super user of this application. Only admin have access into the admin page.

- Manage User
- Manage Products
- Manage Orders
- **Customer Management**
- Login
- View Products
- Search product
- Add to cart
- Remove product from cart
- Placed order
- Payment details
- Edit Profile

IV. RESULTS AND DISCUSSION

e-cart System



e-cart System



Admin Login

Username:

Password:

Admin Login

e-cart System



User Login

Email Id:

Password:

Customer Login

V. CONCLUSION

- The 'e-cart system' is designed to provide a web based application that would make searching, viewing and selection of a product easier.
- The application provides an easy and convenient way to search for products where a user can Search for a product interactively and the application would refine the products available based on the user's input.
- The user can then view the complete specification of each product.
- They can also view the product .
- Adding the product into their cart and buy it and enjoying their shopping experience

VI. REFERENCES

- [1] Java : Beginner's Guide Author: Herbert Schildt
- [2] <https://www.oracle.com/in/java/technologies/javase/jdk11-archive-downloads.html>
- [3] <https://www.eclipse.org/downloads/>
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E-COMMERCE WEB APPLICATION

Nikita S. Khandare*¹, Sanika C. Gaikwad*², Sonali R. Kamble*³,
Swaraj J. Shinde*⁴, Mrs. Ashwini D.P.*⁵

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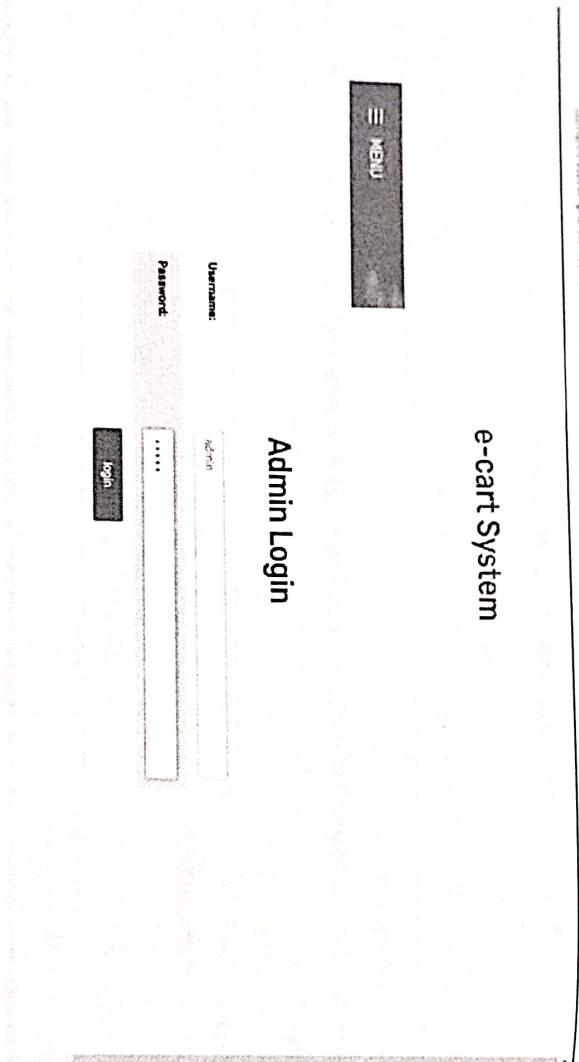
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IV. RESULTS AND DISCUSSION

e-cart System

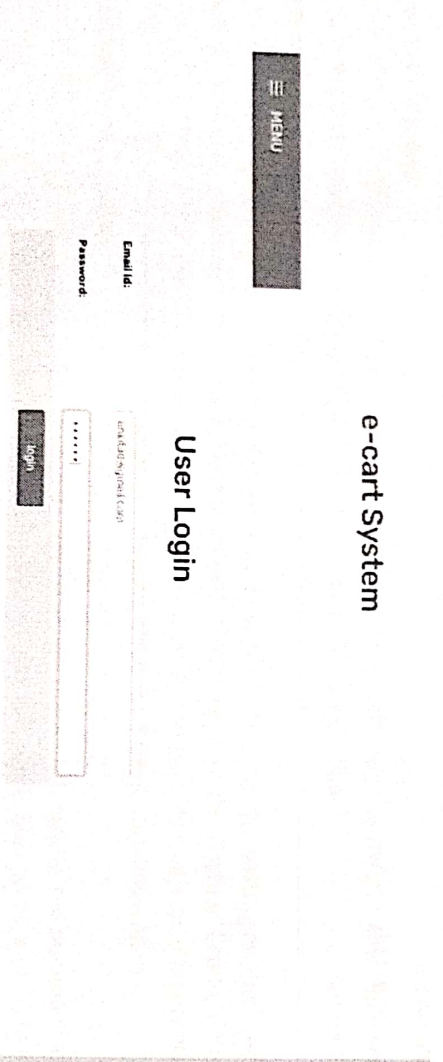


e-cart System



Admin Login

e-cart System



User Login

Customer Login

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- [4] <https://www.javatpoint.com/java-tutorial>
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BOOK SHOP INVENTORY SYSTEM

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ABSTRACT

An inventory system is an essential tool for any business that deals with physical products. It is a software program or application that allows a business to manage its inventory levels, orders, and sales. This book covers the basics of inventory management, including the different types of inventory systems available, the benefits of using an inventory system, and how to choose the right one for your business. It also discusses the key features and functionalities of an inventory system, such as real-time inventory tracking, order management, and reporting. The book provides practical advice on how to set up an inventory system, how to manage inventory levels, and how to optimize inventory processes to reduce costs and increase efficiency. Finally, it includes case studies and examples of successful inventory systems in action, providing readers with real-world insights and best practices for inventory management.

1. INTRODUCTION

Any business that deals with tangible goods needs to have effective inventory management. Businesses that manage their inventories well can optimize their stock levels, cut costs, and boost productivity. An inventory management system, which is a piece of software or an application that enables businesses to track their orders, sales, and inventory levels in real-time, is a crucial tool for inventory management.

Inventory management software is offered in a variety of formats, including cloud-based, on-premise, and hybrid solutions. Systems that use the cloud are hosted online and may be accessed from any location with an internet connection. On the other hand, on-premise systems are deployed on a business's own servers and are only accessible within the business's network. Businesses can profit from both cloud-based and on-premises technologies by combining them into hybrid solutions.

The capacity to monitor inventory levels in real-time is one of the main advantages of employing an inventory management system. Businesses are able to rapidly see any shortages or excesses by knowing exactly how much inventory they currently have on hand. Additionally, it enables companies to swiftly change inventory levels in response to the arrival or sale of new products.

Order management is a crucial component of inventory management systems. Businesses can better manage their orders by using an inventory management system to automate the order process, track orders in real-time, and provide real-time information on order status. Businesses can benefit from this by reducing errors, increasing productivity, and raising customer happiness. Businesses can gain useful information into their inventory processes via inventory management systems. Reports on inventory levels, order history, and sales trends, for instance, can be produced using an inventory management system. These studies can aid companies in locating opportunities for cost-cutting, increased productivity, or inventory process optimization.

Businesses should take into account a number of aspects when selecting an inventory management system, including the volume and complexity of their inventory, their financial situation, and their unique demands and specifications. In order for inventory management systems to grow and change with a business over time, it is also important for them to be user-friendly, adaptable, and scalable.

Businesses should be prepared to dedicate time and resources to the process of implementing an inventory management system because it can be a challenging procedure. An efficient inventory management system can, nevertheless, provide a number of advantages, such as enhanced productivity, lower expenses, and more customer satisfaction.

II. LITERATURE REVIEW

1) John M. Hill and Elizabeth A. Hill give a thorough analysis of the many inventory systems available as well as their advantages in their book "Inventory Management Explained." They stress the value of real-time inventory

tracking and how it may assist companies in making better choices regarding their inventory levels and elevating client delight.

2) Another thorough manual on inventory management is "Effective Inventory Management" by Tompkins Associates. Everything from setting up an inventory management system to streamlining inventory procedures and cutting costs is covered in the book. Additionally, it offers case studies and real-world illustrations of effective inventory management techniques.

3) Brian Barry emphasizes the significance of precise forecasting in inventory management in "The Definitive Guide to Inventory Management." He talks about several forecasting techniques and how to utilize them to forecast demand and manage inventory levels.

4) In his book "Inventory Control and Management", Donald Waters explores the role of inventory in supply chain management. He discusses the importance of inventory visibility, and how it can help businesses improve their forecasting and planning processes.

5) "The Lean Inventory Management Handbook" by Tony Rice focuses on lean inventory management, which is a philosophy that emphasizes reducing waste and increasing efficiency. The book includes practical tips for implementing a lean inventory management system and reducing inventory-related costs.

6) In their book "Operations and Supply Chain Management", F. Robert Jacobs and Richard B. Chase discuss the importance of inventory management in the context of supply chain management. They emphasize the need for a coordinated approach to inventory management across all stages of the supply chain.

7) "Inventory Management: Principles, Concepts and Techniques" by Prafulla Ranjan Behera provides a comprehensive overview of inventory management principles and techniques. The book covers topics such as safety stock, lead time, order quantity, and inventory turnover.

8) "Inventory Management for Small Business" by Martin Stone is a practical guide to inventory management for small businesses. The book covers the basics of inventory management, including setting up an inventory system and managing inventory levels. It also includes tips for reducing inventory-related costs and improving efficiency.

9) A thorough overview of inventory management within the framework of production planning and scheduling may be found in "Inventory Management and Production Planning and Scheduling" by Edward A. Silver, David F. Pyke, and Rein Peterson. The book discusses subjects like planning for material requirements, forecasting, and inventory management policies.

10) A chapter is devoted to inventory management systems in "The Handbook of Technology Management," which was edited by Hossein Bidgoli. The chapter discusses the several kinds of inventory management systems that are available, their advantages, and the best methods for putting them into practice and administering them. Additionally, it offers case studies and illustrations of effective inventory control methods used in diverse businesses.

III. METHODOLOGY

Planning:-

Setting up the infrastructure for inventory monitoring, choosing the books to be included in the inventory, and deciding on the system's aims and objectives all fall under the heading of planning.

Data collection:-

In this step, information on the books, such as their title, author, publisher, edition, ISBN, quantity, and location, is gathered. Both human and automated methods can be used to obtain this data.

Analysis:-

In order to find trends, patterns, and opportunities for improvement, this stage entails analyzing the data gathered. The results of this study can be used to reorder levels, discover the most popular books, and determine which books are moving quickly and slowly.

Replenishment: -

Based on the analysis performed in the preceding phase, this step entails rearranging books that have dropped below the required level of inventory. Using an inventory management system, this can be carried out either manually or automatically.

Review and Improvement: -

Using the analysis from the previous phase, this step entails placing new orders for any books that have dropped below the required level of inventory. An inventory management system can be used to perform this automatically or manually.

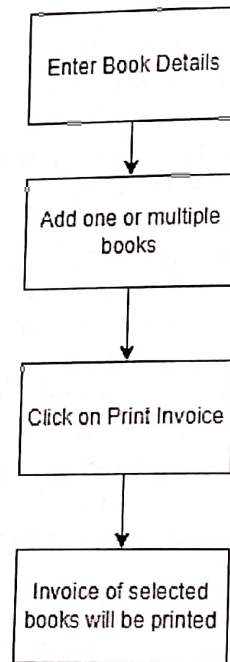
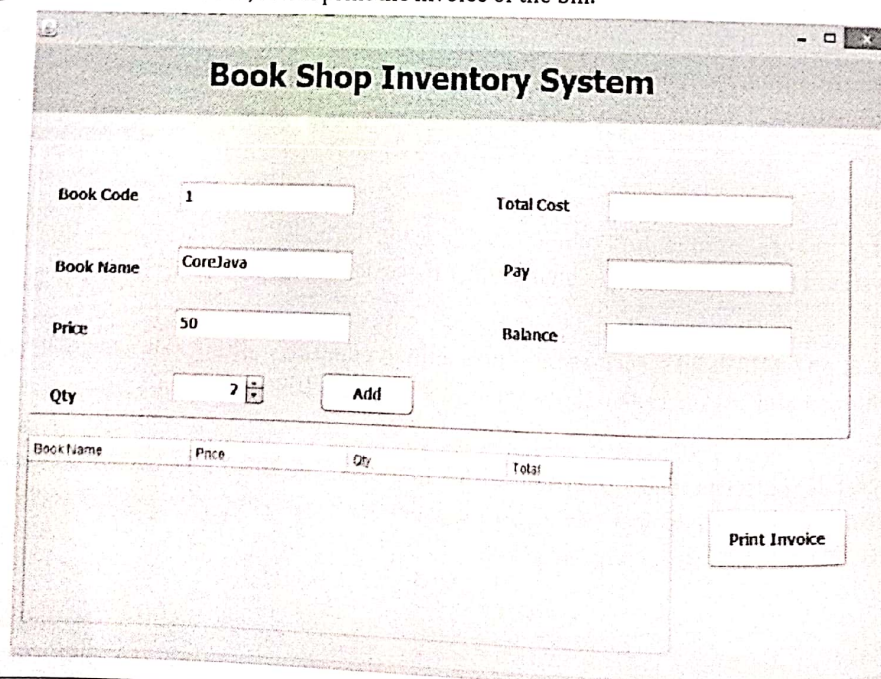


Fig 1: Flowchart

IV. RESULT

By entering few details of the book, it will print the invoice of the bill.



The screenshot shows a web application titled "Book Shop Inventory System". It features a form with the following fields and controls:

- Book Code:** Input field with value "1".
- Book Name:** Input field with value "CoreJava".
- Price:** Input field with value "50".
- Qty:** Input field with value "2" and a spinner control.
- Add:** Button to add the book to the cart.
- Total Cost:** Input field.
- Pay:** Input field.
- Balance:** Input field.

Below the form is a table with the following headers: Book Name, Price, Qty, Total. The table is currently empty. A "Print Invoice" button is located at the bottom right of the interface.

Book Shop Inventory System

Book Code

Book Name

Price

Qty

Total Cost

Pay

Balance

Book Name	Price	Qty	Total
CoreJava	50	2	100
C#	60	3	180

Book Shop Inventory System

Book Code

Book Name

Price

Qty

Total Cost

Pay

Balance

Message

Sales Completedddddddddd

Book Name	Price	Qty	Total
CoreJava	50	2	100
C#	60	3	180

BookShop

Invoice No 4

BookName	Price	Qty	Total
CoreJava	50	2	100
C#	60	3	180
Total			280
Pay			300
Balance			20

Thank you Come Again

V. CONCLUSION

In conclusion, any business that deals with books needs a book inventory system as a management tool. The technique reduces the possibility of overstocking while assisting in ensuring that there is always a sufficient supply of books. Improved customer happiness, more sales, and lower inventory management costs are all results of efficient inventory management. Lean inventory management, forecasting techniques, and the use of inventory management software are just a few of the approaches to managing book inventory that are covered in depth in the literature on book inventory management. The several publications cover a variety of subjects, including planning for material requirements, forecasting, and inventory management rules. Organizations can use these tools to determine the best method for managing their book inventory. The book inventory system needs to be continually examined and enhanced if it is to be effective. This entails routinely examining inventory data to spot trends and patterns, modifying inventory levels and reordering guidelines as necessary, and making sure the inventory management system is operating at its best. In conclusion, an efficient book inventory system can assist businesses in streamlining their processes and giving customers better service. Businesses may optimise their book inventory, streamline processes, and cut costs by putting best practises in inventory management into practise and employing the right inventory management software.

VI. REFERENCES

- [1] Irmawan Rahyadi;Masyhur Duncik;Budhi Santoso;Ike Novianti;Fitri Murfianti;Tamimi Zakirah - Evaluating A Library Automation System Application in Senayan Library Management System (Slms): The Human Organization Technology (HOT) FIT Model in Indonesia
- [2] Md. Mahboob Karim;Ashratuz Zavin;Nabila Shahnaz Khan;Sanjida Nasreen Tumpa;Muhammad Nazrul Islam -A proposed multi-channel system for public libraries in Bangladesh
- [3] Martin Mabeifam Ujakpa;Jude Osakwe;Gloria Iyawa;Iyaloo Waiganjo;Valerianus Hashiyana- Development of the Greenwell Matongo Community Library Management Information System (LMIS)
- [4] Zhenzhong Yang;Shaotang Liu - Study on the Framing of Knowledge Management for College Library Management
- [5] Zhenzhong Yang;Huanhai Bai - Building a maturity model for college library knowledge management system
- [6] Wang Zhigang - Research on The Framework of Library Management System Based on Internet of Things
- [7] Jin Feng Zhang;Chang Ji Wen - The university library management system based on radio frequency identification

REAL TIME SIGN LANGUAGE DETECTION

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ABSTRACT

Real-time sign language detection is an exciting and challenging project that aims to develop a system capable of recognizing sign language gestures and translating them into text or spoken language in real-time. This project can have a significant impact on the lives of people with hearing impairments by enabling them to communicate more easily with others who do not understand sign language. The project involves using computer vision and machine learning techniques to analyze video streams of sign language gestures and recognize the corresponding meanings. This requires building a dataset of sign language gestures, developing a deep learning model to train on this dataset, and integrating the model into a real-time application. The real-time application can be developed using a webcam or a mobile camera to capture video streams of the user's sign language gestures. The video streams can then be fed into the deep learning model to recognize the corresponding meanings, which can be displayed as text or spoken language. Overall, the real-time sign language detection project requires expertise in computer vision, machine learning, deep learning, and software development. However, the impact of this project can be significant, enabling people with hearing impairments to communicate more easily with others and improve their overall quality of life.

I. INTRODUCTION

Real time sign language detection is a technology that uses machine learning algorithms to detect and recognize hand gestures in real time. This technology is used to help people with hearing impairment to communicate with others. It can also be used in applications such as automated sign language translation, virtual reality, and computer vision. It works by using a camera to capture images of hand gestures and then using an algorithm to analyze them and recognize the sign language gestures. The technology can be used to create a more effective way of communication between people who use sign language and those who do not.

II. LITERATURE REVIEW

Background or literature Review

Future research could focus on improving the accuracy of real-time sign language detection by exploring different algorithms and architectures for more accurate feature extraction from video sequences. Additionally, research could focus on improving the accuracy of sign language detection by incorporating contextual information, such as the context of a conversation or the surrounding environment. There is also potential to improve the accuracy of sign language detection by integrating deep learning techniques such as recurrent neural networks (RNNs) or long-short-term-memory networks (LSTMs) into the existing models. Finally, research could focus on developing a system for real-time sign language detection that is robust to varying environmental conditions, such as lighting and background noise.

III. METHODOLOGY

Methods and Materials

The real time sign language detection methodology is a process by which sign language is detected in real time. This process is typically used to improve communication between people who are deaf or have hearing impairments and people who do not understand sign language. The process begins by capturing the sign language with a camera or other recording device. The recorded sign language is then analyzed using computer vision algorithms to detect the various signs and gestures. Once the signs and gestures are detected, they are then translated into text or spoken sentences. This allows for real-time communication between two people who cannot understand each other's language. In addition, this process can be used to create virtual sign language interpreters to assist in communication between sign language users and those who do not understand sign language.

1. Collect a dataset of sign language samples: Begin by collecting a dataset of sign language samples. This can be done by either recording a video of a sign language interpreter, or by photographing different sign language samples.
2. Pre-process the dataset: Pre-process the dataset by normalizing the sizes and orientations of the samples. This will make it easier for the model to recognize the signs.
3. Train a deep learning model: Train a deep learning model such as a convolutional neural network (CNN) to recognize the signs in the dataset. This can be done using a supervised learning approach, where the model is first trained on labeled data and then tested on unseen data.
4. Use the model in real-time: Once the model is trained, it can be used in real-time to detect sign language. This can be done by either using a camera to capture the sign language interpreter's movements, or by using a microphone to capture the sound of the sign language.
5. Post-process the results: Once the model has detected the sign language, the results can be post-processed to improve accuracy. This can be done by using techniques such as smoothing or interpolation.

IV. PROPOSED APPROACH/ MATHEMATICAL MODEL

Step1. Data Collection

Collect a dataset of sign language gestures that includes a variety of signers, lighting conditions, and backgrounds.

Step 2. Preprocessing

Preprocess the data by cropping and resizing the images, normalizing the lighting conditions, and removing background noise.

Step 3. Feature Extraction

There are several methods for feature extraction, including hand segmentation, optical flow, and convolutional neural networks (CNNs).

Step 4. Training

Train a classifier on the extracted features using a supervised learning algorithm. Popular machine learning algorithms for this task include SVMs, decision trees, and deep learning models like CNNs.

Step 5 Real-time Sign Language Detection

Implement the trained model into a real-time sign language detection system. This can be done by capturing live video or images from a camera and using the trained classifier to recognize the sign language gestures in real-time.

Step 6 Evaluation

Evaluate the performance of the system on a test dataset. Metrics such as accuracy, precision, and recall can be used to measure the system's performance.

V. CONCLUSION

After analyzing the various reports and studies conducted on the use of real-time sign language detection, it can be concluded that this technology has the potential to help bridge the communication gap between the deaf and hearing communities. The technology is still in its infancy and has a lot of room for improvement. However, there are already some systems in place that are capable of recognizing various signs and providing feedback in real-time. In addition, recent research suggests that with increased training, these systems can become even more accurate. With the right investment, this technology could become widely available and help to improve the lives of many. Overall, a real-time sign language detection project has the potential to greatly benefit the sign language community and improve communication access for people who use sign language. As technology continues to evolve, we can expect more sophisticated and accurate sign language detection systems to emerge, making the communication experience even more seamless and natural.

VI. REFERENCES

- [1] Phani, S.A., et al.: Liquor detection through automatic motor locking system: in built (LDAMLS). Int. J. Comput. Eng. Res. (IJCER) 4(7), 2250-3005 (2014)
- [2] Federal Highway Administration. Highway Statistics 2014 - Policy (2014). [https://www.fhwa-dot.gov/policyinformation/statistics/2014/](https://www.fhwa.dot.gov/policyinformation/statistics/2014/)

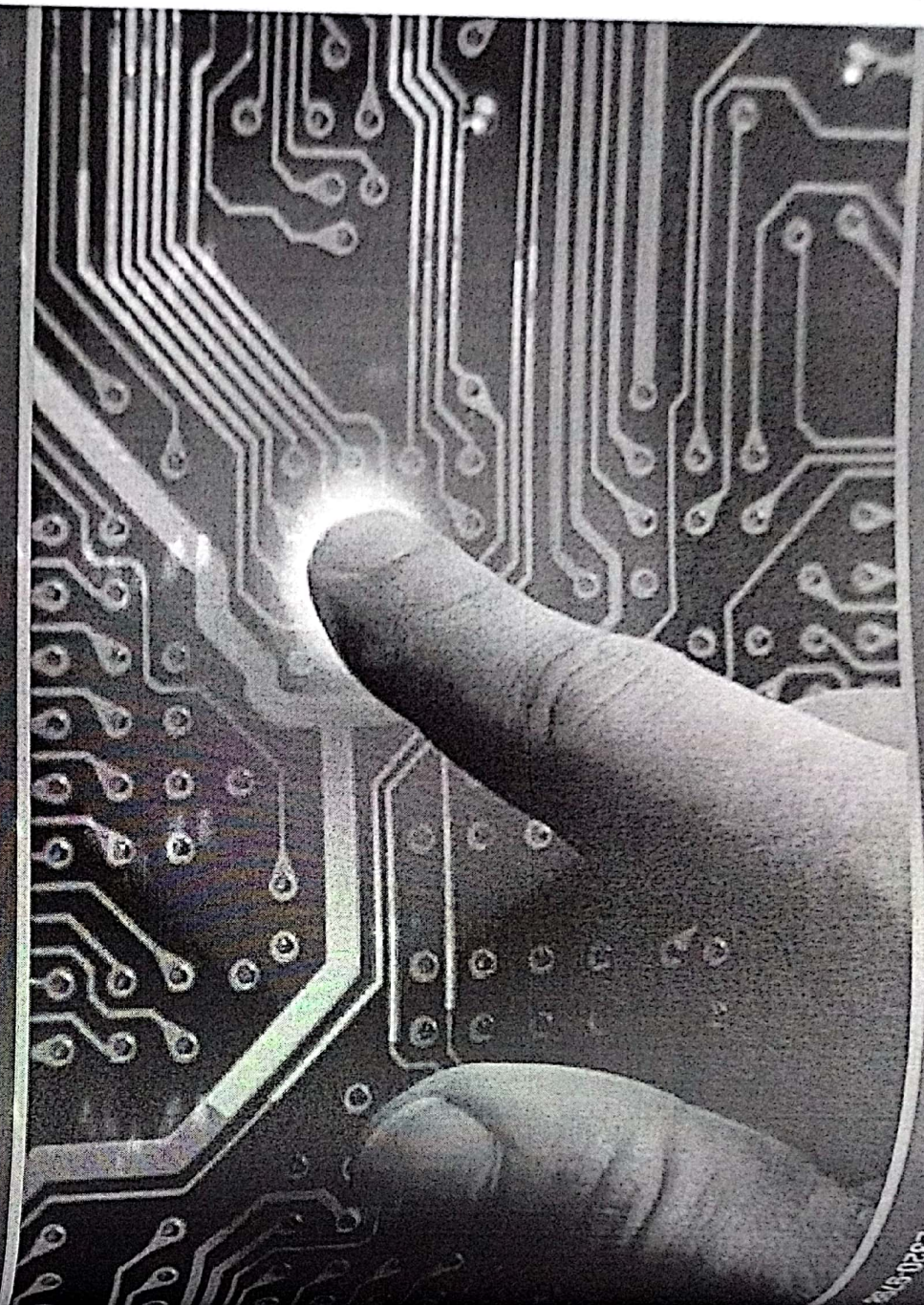
- [3] Dai, Jiangpeng, Jin Teng, Xiaole Bai, Zhaohui Shen, and Dong Xuan. "Mobile phone based drunk driving detection." In Pervasive Computing Technologies for Healthcare (PervasiveHealth), 2010 4th International Conference on-NO PERMISSIONS, pp. 1-8. IEEE, 2010.
- [4] Bhuta, Pratiksha, Karan Desai, and Archita Keni. "Alcohol Detection and Vehicle Controlling." International Journal of Engineering Trends and Applications (IJETA) 2, no. 2 (2015): 92-97.
- [5] Gupta, Abhishek, Shriram Ojha, Vikash Kumar, Vikrant Singh, Vipin Malav, and Ramnagariya Gramothan. "Alcohol Detection with Vehicle Controlling." International Journal of Engineering and Management Research 6 (2016).
- [6] These references provide a comprehensive overview of the current state of research and development related to alcohol detection and engine lock systems.



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Design of ALPINE INDUSTRIES Website

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ABSTRACT: -The goal of this inventory is to give a thorough overview of the Alpine Industries(Website). The inventory contains details about the industry, including its information about website containing home page ,about page, contact details .The goal of this inventory is to help business man to increase his production with the help of his website.

To design a website for Alpine Industries to develop their business and to increase their production and for marketing purpose.

Any user or the customer who wants to contact or wants to gather the information about the product or want to buy the products/machines etc. must use this inventory.

1. INTRODUCTION

In today's digital age, having a website has become increasingly important for individuals, businesses, and organizations alike. A website can serve as a powerful tool for communicating information, establishing an online presence, and reaching a global audience. Whether you want to share your ideas, promote your brand, sell products or services, or connect with others, a website can provide the platform to achieve your goals.

Creating a website may seem like a daunting task, but with the right approach and tools, it can be an enjoyable and rewarding process. In this journey, there are various aspects that need to be considered such as designing the user interface, developing the functionality of the website, hosting, and maintaining it, among others.

This introduction will provide an overview of the steps involved in making a website, the main components of a website, and the potential benefits of having a website. Whether you're a small business owner, a blogger, or a non-profit organization, creating a website can be an important step in achieving your goals and reaching your target audience.

As technology advances internet is becoming ever popular. Website has become assential part. Often website of an institution is used as major requirements to rate it. Thus having a website is essential for any major organization

On this project we will develop a website for the Company. On this report almost every details that is necessary has been discussed. Although maximum effort has been given to estimate events and expenses. Welcome to the Alpine Industry website, where we offer solutions for businesses in the alpine industry looking to expand their operations and increase their production. Our website provides comprehensive resources and insights on the latest trends, technologies, and strategies in the alpine industry.

If you are looking to improve your business's performance, we offer a variety of services, including market research, product development, and marketing strategies. Our team of experts can help you identify new opportunities and develop innovative solutions to meet the evolving demands of the alpine market.

At the Alpine Industry website, we are committed to helping businesses in the alpine industry thrive. Whether you are a small startup or a large established company, our team is here to help you achieve your goals .

Alpine Industries in Pimpri Gaon-Pimpri, Pune is known to satisfactorily cater to the demands of its customer base. The business came into existence in 2011 and has, since then, been a known name in its field. It stands located at Survey No 252, Sankalp Chowk, Kapse Ali, Pimpri Gaon-Pimpri-411018. Sankalp Chowk is a prominent landmark in the area and this establishment is in close proximity to the same. The business strives to make for a positive experience through its offerings. The accepted modes of payment such as Cash make every business transaction easy and seamless, contributing to making the entire process even more effective. Customer centricity is at the core of Alpine Industries in Pimpri Gaon-Pimpri, Pune and it is this belief that has led the business to build long-term relationships. Ensuring a positive customer experience, making available goods and/or services that are of top-notch quality is given prime

importance. India's leading B2B market place, Jd Mart ensures engaging in business activities is a seamless process for small and medium enterprises as well as large businesses. In a wake to enable these businesses to reach their audience, this portal lets them showcase their offerings in terms of the products and/or services through a digital catalogue. This business has a wide range of product offerings and the product/catalogue list includes Engineering Companies, Engineering Job Works, Engineering Works, Custom Engineering Services, Engineered Solutions etc. Kindly scroll up for the address and contact details of Alpine Industries in Pune .

We are providing a website which includes the home page, contact details, images ,and information.

II. FUTURE WORK

The future work for a website will depend on the specific goals and objectives of the website owner. Here are some potential areas of focus for future work:

1. **User experience:** Continually improving the user experience of a website can help to keep visitors engaged and increase conversion rates. This can involve conducting user testing, analyzing user behavior data, and making iterative improvements to the site's design and functionality.
2. **Content creation:** Creating fresh and relevant content on a regular basis can help to attract and retain visitors to a website. This can involve developing a content strategy, conducting keyword research, and creating new blog posts, videos, or other forms of content.
3. **Search engine optimization:** Improving the search engine visibility of a website can help to attract more organic traffic and improve overall performance. This can involve optimizing on-page elements such as title tags and meta descriptions, building backlinks, and improving website speed and mobile-friendliness.
4. **E-commerce optimization:** If a website is used to sell products or services, ongoing optimization can help to increase sales and revenue. This can involve improving product descriptions, simplifying the checkout process, and using data analytics to identify opportunities for improvement.
5. **Security and maintenance:** Ensuring the ongoing security and maintenance of a website can help to prevent data breaches and improve site performance. This can involve regularly updating software, monitoring site performance, and implementing security measures such as SSL certificates and firewalls.

Overall, the future work for a website will depend on the specific needs and goals of the website owner. Continuously monitoring and improving website performance can help to ensure long-term success and achieve desired outcomes.

We will also add some advance technology as per their need so the website will look more attractive .

III. MOTIVATION

There are many motivations for creating a website, depending on the purpose and goals of the website. Here are some potential reasons:

1. **Establish an online presence:** A website can help you establish an online presence and make it easier for people to find you or your business. This can increase visibility, credibility, and trustworthiness.
2. **Build a brand:** A website can help you build a brand and communicate your values, mission, and offerings to your target audience. This can help differentiate you from competitors and increase brand loyalty.
3. **Sell products or services:** A website can serve as an e-commerce platform to sell products or services to customers around the world. This can increase sales, revenue, and customer reach.
4. **Share information or knowledge:** A website can be used to share information or knowledge about a particular topic, such as a blog, educational site, or resource hub. This can help educate others, establish thought leadership, and build a community.

5. Connect with others: A website can facilitate connection and networking with others who share similar interests or goals. This can lead to collaboration, partnerships, and new opportunities.
6. Provide customer support: A website can provide customer support through FAQs, chatbots, or support tickets. This can help improve customer satisfaction and reduce customer service costs.

Overall, a website can provide many benefits, depending on your specific needs and goals. By having a website, you can establish an online presence, build a brand, sell products or services, share information or knowledge, connect with others, and provide customer support.

IV. PROBLEM STATEMENT

"Despite the growing demand for online shopping, many small businesses still lack an online presence, making it difficult for them to reach new customers and compete with larger companies. Our website aims to provide an easy and affordable platform for small businesses to create and maintain an online Product to reach to customer, allowing them to expand their customer base and increase sales."

V. METHODOLOGY

- There are several steps to consider when creating a website. Here is a general methodology for making a website:
1. Determine the purpose and goals of the website: Decide what you want the website to achieve, who the target audience is, and what features it needs to have.
 2. Plan the structure and content of the website: Create a site map or flowchart to visualize the structure of the website. Determine what content will be included and how it will be organized.
 3. Choose a platform and web hosting: Decide on a platform to build your website (e.g. WordPress, Wix, Squarespace) and choose a web hosting provider.
 4. Design the website: Develop a visual design for the website, including the layout, color scheme, typography, and imagery.
 5. Develop and test the website: Use HTML, CSS, and JavaScript to build the website. Test the website on different devices and browsers to ensure it functions properly.
 6. Add content: Write and upload the website's content, including text, images, and multimedia.
 7. Optimize the website for search engines: Use search engine optimization (SEO) techniques to improve the website's visibility in search results.
 8. Launch the website: Make the website live by publishing it to the web.
 9. Maintain and update the website: Regularly update the website's content and design, fix any issues that arise, and ensure it remains secure and up-to-date.

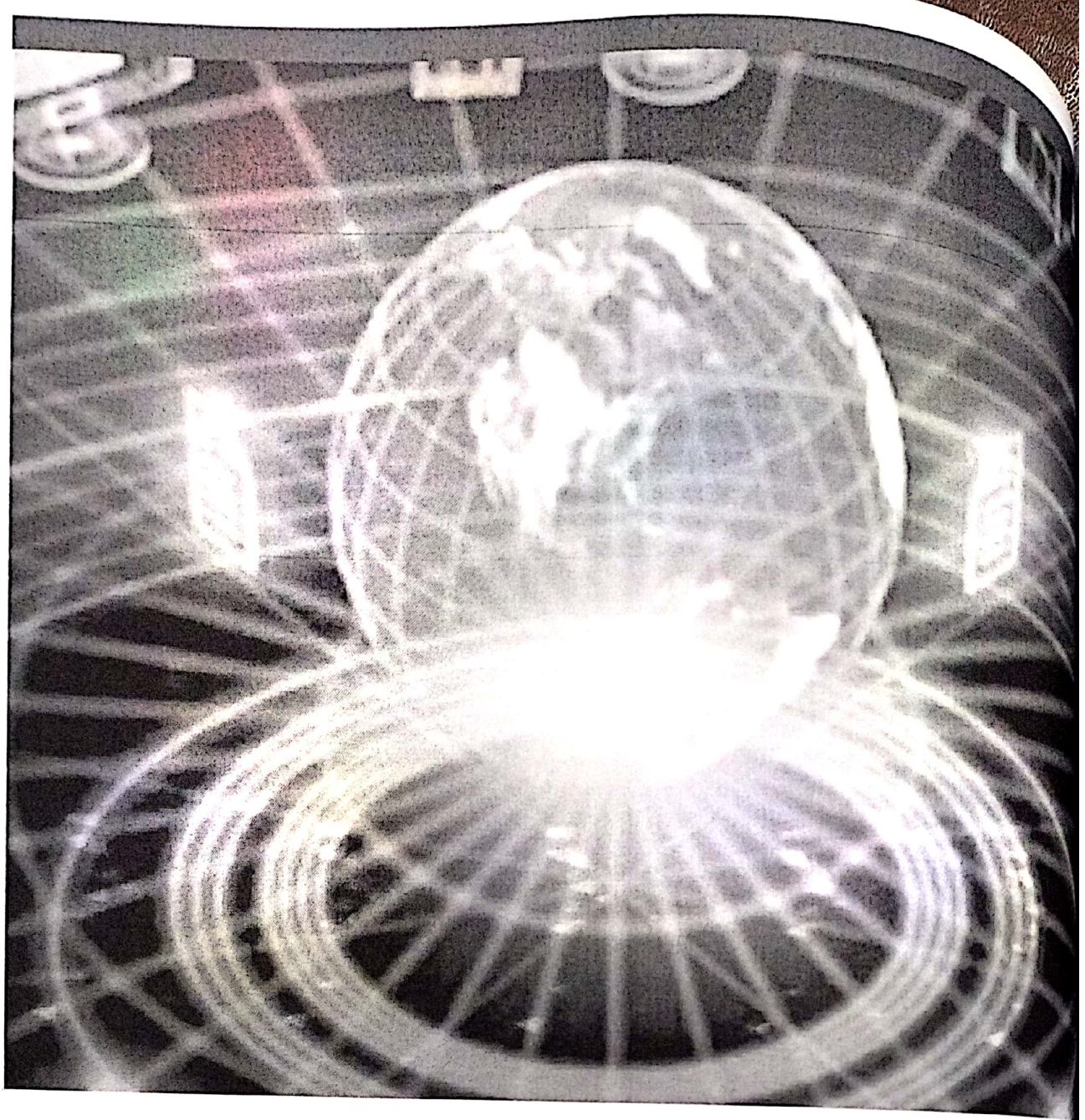
VI. CONCLUSION

The Alpine Industry inventory project serves as an example of how effective inventory management may contribute to the success Alpine Industry. The project's findings show that it should be easy for customer for contact to the owner for any queries related to the product.

The project's suggestions can assist Alpine Industry in streamlining their inventory management processes, increasing earnings, and satisfying customer requests. The initiative has brought attention to how important it is to maintain and improve Alpine Industry inventory management in order to maintain a competitive advantage in the industry.

REFERENCES

1. Barrell, Dylan. *Agile Accessibility Explained: A practical guide to sustainable accessible software development*, Amazon Digital Services, 2019.
2. Blanck, Peter. *eQuality: The Struggle for Web Accessibility by Persons with Cognitive Disabilities*, Cambridge Disability Law and Policy Series, 2015.
3. Boudreau, Denis. *The Inclusive Speaker: How to Truly Connect With All of Your Audience Without Leaving Anyone Behind*, Prominence Publishing, 2023.
4. *Truly Connect With All of Your Audience Without Leaving Anyone Behind*, Prominence Publishing, 2023.
5. Burgstahle, Sheryl. *Creating Inclusive Learning Opportunities in Higher Education*, Harvard Education Press, 2008.
6. Burgstahle, Sheryl. *Universal Design in Higher Education: From Principles to Practice*, Harvard Education Press, 2008.



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Scan to save the contact



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Locate Missing Children Using AI

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ABSTRACT

The main goal of the program is to locate the missing child's in the Crowd, by the help of AI technology(Biometric security).If we are in a throng, there is a danger that kids will lose their parents. In support of that, we are presenting the website that is immediately linked to the police department and the neighbourhood resident who will locate the child. With the aid of face recognition, it will match the youngster and make it simple to find the child. It will speed up the process of finding the youngster for the police and allow them to work more efficiently. The biggest concern is that it might be extremely difficult to locate a child's parents if they are unable to provide any information about them to a local person. What should I do now? It will be quite simple to find the child if the name is the same but the biometrics are different. The best way to locate someone is by using the biometric details.

The face recognition method is used in a very straightforward strategy to locate lost children; a local resident uploads a photo of the child to the website, and if the photo matches any previous reports of missing children, the police department can pinpoint the child's location.

Keywords: youngster, Biometric, police .

I.

INTRODUCTION

We have created a website to locate the missing child's in the crowd. The children who are separated from their parents in the crowd and can't provide any information to the local person about their parents. The simple concept is to ease the work of the police department and the local person who has found the child crying in the corner. We have to just create a website which will be interconnected with the department's website. The idea behind the concept is based on a problem that predominantly affects temples and public spaces. Finding the parents of lost children can be quite difficult. Using this idea will make the job of the police officers easier, and it will help the department's efforts. In this concept face recognition is used which was invented in the 1960s. Woody Bledsoe, Helen Chan Wolf and Charles Bisson worked on using the computer to recognize human faces.

The children are the next future of our country, India is the second most populated country with over 444 million children. Our job is to secure the children and take care of them in the throng. In short the number of crimes will also be decrease. The rate of missing children is more than 200 per day, it will cause an increase in the crime rate. The face recognition will be the most efficient to find someone by their picture. It will extract the key points such as eye color, hairstyle, color, nose, etc. The person who will find the missing kid in the throng will upload the photo on the website and fill in the related details like phone number, address where the kid is located, name of the kid, etc.

METHODOLOGY

II.

- a. BlazeFace, a lightweight and well-performing face detector tailored for mobile GPU inference. It runs at a speed of 200-1000+ FPS on flagship devices. This super real time performance enables it to be applied to any augmented reality pipeline that requires an accurate facial region of interest as an input for task-specific models, such as 2D/3D facial keypoint or geometry estimation, facial features or expression classification, and face region segmentation[1].
- b. Eigenface is a pragmatic approach to facial recognition. Due to its algorithmic simplicity, the implementation of Make your own facial recognition system easy. efficient Processing time and storage. PCA reduced dimensionality Image size in a short time. There is a high Correlation between training data and detection data. The accuracy of the eight surfaces depends on many factors. time consuming Pixel value as projection comparison, accuracy It decreases when you change the intensity of the light. pretreatment of Images are required for satisfactory results. advantage This algorithm is that the eigenface was invented exactly For this purpose the system becomes very efficient. The downside is that it is sensitive to light conditions and head position. Finding Eigenvectors and Eigenvalues are time consuming in PPC. size and location Each face image should be similar: PCA (Eigenface) This approach assigns features to key subspaces containing features[2]. Subheading should be 10pt Times new Roman, real time performance enables it to be applied to any augmented reality pipeline that requires an accurate facial region of interest as an input for task-specific models, such as 2D/3D facial keypoint or geometry estimation, facial features or expression classification, and face region segmentation[1].
- c. Eigenface is a pragmatic approach to facial recognition. Due to its algorithmic simplicity, the implementation of Make your own facial recognition system easy. efficient Processing time and storage. PCA reduced dimensionality Image size in a short time. There is a high Correlation between training data and detection data. The accuracy of the eigensurfaces depends on many factors. time consuming Pixel value as projection comparison, accuracy It decreases when you change the intensity of the light. pretreatment of Images are required for satisfactory results. advantage This algorithm is that the eigenface was invented exactly For this purpose the system becomes very efficient. The downside is that it is sensitive to light conditions and head position. Finding Eigenvectors and Eigenvalues are time consuming in PPC. size and location Each face image should be similar: PCA (Eigenface) This approach assigns features to key subspaces containing features[2].
- d. Neural networks are used in many fields such as pattern recognition problems and character Recognition, object recognition, and autonomous operation of robots. The main goals of neural networks in face recognition are Ability to train the system to capture complex classes of faces samples. To get the best performance from your neural network, How many layers, how many, should be extensively trained Number of nodes, learning rate, etc. Neural networks are nonlinear. Widely used for face recognition. feature extraction Steps are more efficient than main components analysis. The authors achieved 96.2% accuracy on faces. Recognition process with 400 images of her for 40 people. or Classification time is less than 0.5 seconds, but training The hours are up to 4 hours in the hierarchy set feature. Layers partially invariant to translation, rotation, and rotation scale and deformation. The downside of this approach is the number of classes[2].
- e. In template matching you can exploit Characterize other face templates from different prospects one side. Mainly gray that matches the image of the face It can also be processed in the correct form (Bichsel 1991). in the Brunelli and Poggio (1993) Pop and Brunelli available All aspects of automatic 4 template function development That is, select the eyes, nose, mouth, face, and the entire set. or Systems are evaluated by comparing geometric results Algorithm based on his 188 images from 47 subjects. pattern The matching algorithm is a very pragmatic approach, very simple A detection rate of approximately 100% has been achieved. What Eigenface Principal Component Analysis Offers Linear arrangement of templates. The most important thing about this approach is that it is easy to implement and More expensive than any other feature classifier. By comparison, template-based algorithms are more expensive And it is not easy to process[2].

III.

MODELING AND ANALYSIS

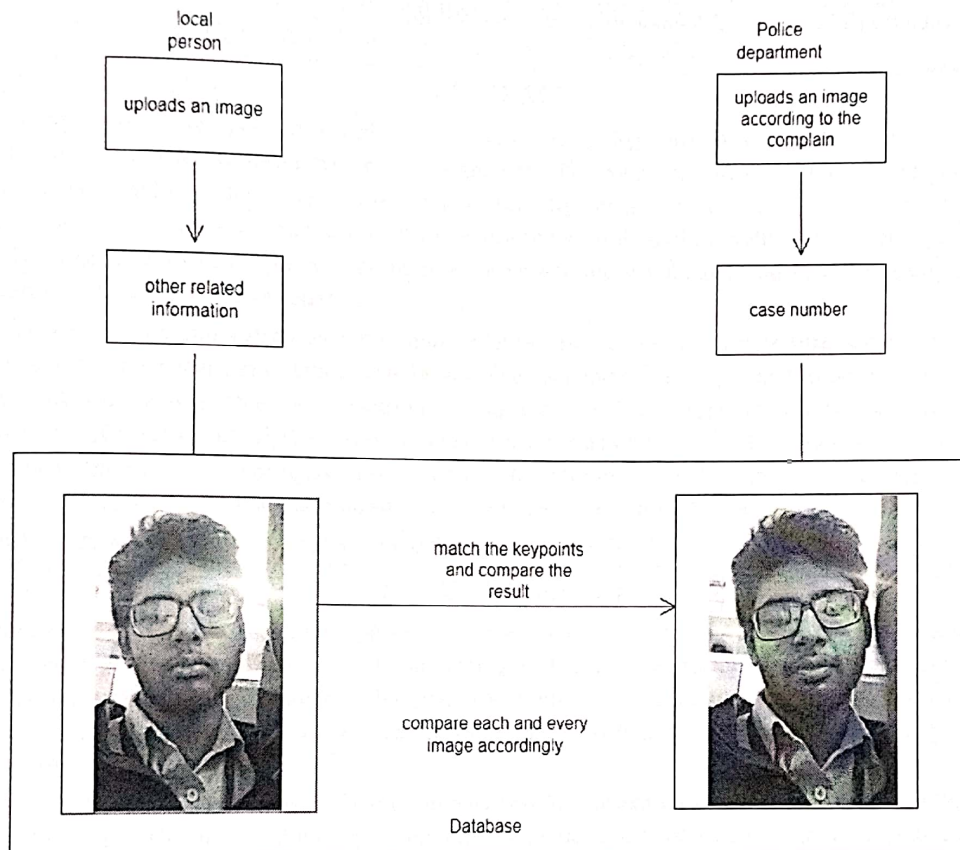


Figure 1: 3D view of building.

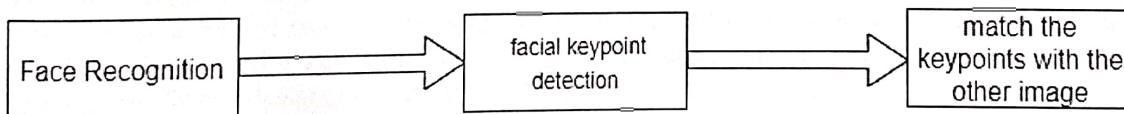


Figure 2: flow of data

V.

CONCLUSION

Therefore, by setting up this architecture between citizens and the police we can improve the process of identifying and locating missing children by leveraging the public and using them to report such data. This would also lead to a more cohesive database of missing persons and help police in different locations to collaborate and improve their inter-communication.

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REFERENCES

VI.

- [1].BlazeFace: Sub-millisecond Neural Face Detection on Mobile GPUs Valentin Bazarevsky Yuri Kartynnik
Andrey Vakunov Karthik Raveendran Matthias Grundmann.
[2].Face Recognition Techniques - A Review Bhaskar Gupta, MIEEE.

COLLEGE VOTING PORTAL

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ABSTRACT

In this research paper, we present a desktop application for college elections developed using VB C#, SQL Server technologies. The proposed system is designed to offer a secure, efficient, and reliable platform for students to vote online. The system uses various security measures such as user authentication, data encryption, and secure database management to ensure the security and integrity of the voting process. The system is scalable and can handle a large number of voters and candidates, and includes features such as custom ballot templates and vote counting.

The proposed desktop application uses the Model-View-Controller (MVC) architecture, which separates the presentation, business logic, and data access layers. The user interface is designed to be intuitive and user-friendly, with candidate profiles and electronic voting features. The system is fault-tolerant, with failover mechanisms in place to ensure that the system remains available in the event of hardware or software failures. Overall, the proposed college voting system is an effective solution for conducting elections, offering a reliable and efficient platform that can be customized to meet the specific needs of different institutions.

Keywords: Voting, Polls, SQL, Admin, User, Module, Visual Studio, Secure.

I. INTRODUCTION

The conduct of elections is an essential aspect of democratic societies, including educational institutions such as colleges and universities. However, traditional voting methods using physical ballot boxes can be time-consuming and prone to errors, leading to delays in the announcement of results and the potential for disputes. As a result, many educational institutions are turning to online voting systems to streamline the process and increase participation.

In this research paper, we propose a desktop application for college elections developed using VB C#, SQL Server technologies. The proposed voting system offers a platform for students to vote online, eliminating the need for physical voting booths. The system is designed to ensure the security and integrity of the voting process and incorporates various security measures such as user authentication, data encryption, and secure database management. The system is scalable and can handle a large number of voters and candidates, and includes features such as custom ballot templates and vote counting. The proposed system is an efficient, reliable, and cost-effective solution for conducting college elections and can serve as a model for other educational institutions looking to implement similar systems.

II. LITERATURE REVIEW

In recent years, there has been a growing interest in the use of online voting systems for college elections. Online voting systems can offer several advantages over traditional paper-based voting methods, including increased convenience, reduced costs, and improved accuracy. However, security concerns remain a significant challenge, as any breach of security can compromise the legitimacy of the results. This literature review aims to provide an overview of the existing literature on college voting systems, focusing on the use of VB C#, SQL Server technologies in the development of secure and efficient online voting systems.

Traditional Voting Systems

Traditionally, college elections have been conducted using physical ballot boxes. However, this method can be time-consuming, expensive, and prone to errors, leading to disputes over the legitimacy of the results. Research has shown that online voting systems can address many of these issues, resulting in higher voter turnout and faster, more accurate results.

Online Voting Systems

Online voting systems can be classified into two main types: web-based and desktop-based. Web-based systems are accessed through a web browser and can be run on any device with an internet connection. Desktop-based systems are installed on a local computer or network and can be used without an internet connection. Desktop-based systems have the advantage of being more secure, as they are less vulnerable to hacking and other cyber-attacks.

VB C# and SQL Server Technologies

VB C# and SQL Server are popular technologies used in the development of online voting systems. VBC# is a ultramodern, object- acquainted programming language that's extensively used for developing desktop operations. The relational database management system known as SQL Server is employed to efficiently store and manage data. These technologies can be used together to develop secure and effective online voting systems that can handle a large number of users and campaigners.

Security Concerns

Security is a critical concern when it comes to online voting systems. Research has shown that many online voting systems are vulnerable to various types of attacks, including hacking, phishing, and denial of service attacks. To address these concerns, online voting systems must incorporate various security measures, such as user authentication, data encryption, and secure database management.

Conclusion

In summary, online voting systems offer several advantages over traditional paper-based voting methods for college elections. However, security concerns remain a significant challenge, and the use of VB C#, SQL Server technologies can help address these concerns. The proposed research paper aims to develop a secure, efficient, and reliable desktop application for college voting that uses VB C#, SQL Server technologies, and incorporates various security measures to ensure the integrity of the voting process.

Current Issues

Current issues in voting portal in the market are:

Security

Security is a significant issue in voting systems, as there have been instances of tampering with electronic voting machines and cyberattacks on voter registration databases. A research paper could examine the security vulnerabilities of current voting systems and explore how technology, such as blockchain or biometrics, can be used to improve security and prevent fraud.

Accessibility

Some voters may face accessibility issues with current voting systems, such as those with disabilities or limited mobility, or those who are unable to get to a polling station. A research paper could explore how technology, such as online or mobile voting, can be used to improve accessibility and increase voter participation.

Reliability

Voting systems must be reliable to ensure that the results of the election are accurate and trustworthy. Technical glitches and system failures can compromise the integrity of the voting process and result in the loss of data. A research paper could examine the reliability of current voting systems and explore how technology, such as cloud computing, can be used to improve reliability and prevent system failures.

Transparency

Transparency is essential in any voting system, as it ensures that the election process is fair and accountable. Voters should be able to verify that their vote has been counted correctly and that the election outcome is accurate. A research paper could explore how technology, such as open-source software or auditing protocols, can be used to improve transparency and ensure the integrity of the election.

Voter Confidence

Voter confidence in the election process is crucial for the legitimacy of democracy. A lack of trust in the voting system can lead to disenfranchisement and low voter turnout. A research paper could examine the factors that

contribute to voter confidence, such as voter education and awareness, and explore how technology can be used to improve voter confidence in the election process.

Summary

In summary, a research paper could explore the issues and problems in current voting systems, such as security, accessibility, reliability, transparency, and voter confidence. By addressing these issues through technology and innovation, developers can create voting systems that are secure, accessible, reliable, transparent, and promote voter confidence in the democratic process.

Benefits of Online Voting Portal

Accessibility:

An online voting portal using VB C#, SQL Server technologies can improve accessibility for voters by allowing them to cast their vote from anywhere, at any time, using their computer or mobile device. This can increase voter participation and make it easier for students and faculty to exercise their right to vote.

Efficiency:

An online voting portal using VB C#, SQL Server technologies can streamline the voting process by automating many of the administrative tasks associated with traditional paper-based voting systems. This can reduce the administrative burden on college staff and save time and resources.

Customization:

An online voting portal using VB C#, SQL Server technologies can be customized to meet the specific needs of individual colleges and universities. This can allow institutions to tailor their voting systems to their unique requirements and ensure that the system meets their needs.

Security:

An online voting portal using VB C#, SQL Server technologies can provide enhanced security features, such as encryption, to protect against cyber threats and ensure the integrity of the voting process. This can increase trust in the voting system and improve the accuracy of the election results.

Data Management:

An online voting portal using VB C#, SQL Server technologies can facilitate the collection, storage, and management of voting data. This can provide institutions with valuable insights into voter behavior and preferences, which can be used to inform future election strategies and decision-making.

Summary:

In summary, a research paper on a college voting portal using VB C#, SQL Server technologies could explore the benefits of an online voting system, such as improved accessibility, efficiency, customization, security, and data management. By utilizing these technologies, institutions can create a voting system that is secure, reliable, and efficient, while also increasing voter participation and engagement.

III. INFORMATION ABOUT MODULES

The user login module in our college voting portal using VB C#, SQL Server technologies includes a two-factor authentication process that requires users to enter both their email and password, as well as an OTP sent to their email address. This added security measure enhances the reliability of the voting portal by reducing the risk of unauthorized access. While the additional step may add a slight delay to the login process, the benefits of increased security are well worth it. Overall, the user login module is a crucial component of the voting portal, ensuring that only authorized users can access the system and exercise their right to vote.

The user registration module in our college voting portal collects essential user information such as name, last name, email, password, diploma year, branch, and roll number. To ensure the authenticity of the user's email address, the module also sends an OTP that must be verified before the user's registration is completed and their details are stored in the SQL Server database. By requiring users to provide accurate and verified information during registration, the voting portal can maintain a secure and trustworthy user database, allowing for fair and transparent voting results. Overall, the user registration module is a crucial component of the voting portal, ensuring that only eligible and registered users can participate in the voting process.

The admin login module in our college voting portal technologies allows the administrator to securely access and manage the voting portal. The module requires the admin to enter their email and password to access the system. Once logged in, the admin has access to various functionalities, including managing user accounts, configuring the voting process, and viewing the voting results. By providing a secure and reliable means of accessing the voting portal, the admin login module helps ensure the transparency and fairness of the voting process. Overall, the admin login module is a crucial component of the voting portal, enabling efficient and effective management of the system by the authorized administrator.

The user form module in our college voting portal using VB C#, SQL Server technologies displays all the current running polls on the user's screen. If the user has already voted in a particular poll, the form displays a message indicating that they have already voted and cannot vote again. However, if the user has not yet voted, the poll is opened, and they are given the option to cast their vote. This feature helps ensure the fairness and integrity of the voting process by preventing users from voting more than once in the same poll. Overall, the user form module is a crucial component of the voting portal, providing a simple and user-friendly interface for users to access and participate in the voting process.

The admin form module in our college voting portal using VB C#, SQL Server technologies displays all the current running polls on the admin's screen, allowing them to monitor the progress of the voting process. Additionally, the admin can create new polls and add candidates to existing polls through this module. This feature provides the administrator with complete control over the voting process, allowing them to configure the system as needed to ensure fairness and transparency. By enabling the administrator to easily manage and update the voting system, the admin form module helps ensure that the voting process runs smoothly and efficiently. Overall, the admin form module is a crucial component of the voting portal, empowering the administrator to manage the system with ease and confidence.

The admin form module in our college voting portal using VB C#, SQL Server technologies displays all the candidates for each poll and the number of votes received by each candidate. The admin can also declare the polls and retrieve the results through this module. Once the results are declared, they are stored in the database and the poll is closed. This feature provides the administrator with complete visibility into the voting process, allowing them to track the progress of each poll and analyze the results. By enabling the administrator to easily retrieve and manage the voting results, the admin form module helps ensure the transparency and accuracy of the voting process. Overall, the admin form module is a crucial component of the voting portal, allowing the administrator to monitor and manage the system effectively.

In summary, the college voting portal integrates several modules such as user login, user registration, user form, admin login, admin form, and database to provide a comprehensive and efficient voting system. The user login and registration modules ensure secure access for voters, while the user form displays available polls and allows users to cast their votes. The admin login and admin form modules enable administrators to create polls, manage candidates, and declare results. The database stores all the voting data for easy retrieval and analysis. The integration of these modules ensures transparency, security, and accuracy in the voting process.

IV. CONCLUSION

In conclusion, the College Voting Portal developed using VB C# and SQL Server provides an efficient and reliable solution to the voting system in colleges. The portal addresses the issues faced by the traditional voting systems by implementing advanced features such as OTP verification, multi-level user authentication, and secure storage of data in the SQL Server database. Additionally, the portal offers a user-friendly interface and ensures transparency and fairness in the voting process.

The modules integrated into the system including user registration, user login, user form, admin login, admin form, and candidate results, work together seamlessly to provide a complete solution. Overall, the College Voting Portal provides a robust, scalable, and efficient solution to the voting system, ensuring a smooth and secure voting experience for all stakeholders.

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We would like to thank our team members who have worked tirelessly and contributed their expertise in developing the different modules of the portal. Their dedication and commitment have played a significant role in the success of this project.

Lastly, we would like to acknowledge the contribution of our friends and family members, who have provided us with the motivation and support to complete this project. Their encouragement has been instrumental in our success.

V. REFERENCES

- [1] Building Secure Applications with Visual Basic -
<https://msdn.microsoft.com/en-us/library/ms972965.aspx>
- [2] Using SQL Server in Visual Basic -
<https://docs.microsoft.com/en-us/sql/visual-basic/using-sql-server-in-visual-basic?view=sql-server-ver15>
- [3] A Study on Online Voting System - <https://ieeexplore.ieee.org/document/8194203>
- [4] A Secure Online Voting System - <https://ieeexplore.ieee.org/document/5670498>
- [5] Design and Implementation of a Web-Based Online Voting System -
<https://ieeexplore.ieee.org/document/8439134>
- [6] A Secure E-Voting System using Biometrics - <https://ieeexplore.ieee.org/document/6747019>
- [7] Secure Electronic Voting System Using Fingerprints -
https://www.researchgate.net/publication/262581697_Secure_Electronic_Voting_System_Using_Fingerprints

ONLINE TRANSACTION FRAUD DETECTION

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ABSTRACT

In this transaction fraud detection project, we aim to develop a system that can accurately identify and prevent fraudulent transactions. The project will involve the use of machine learning algorithms, rule-based systems, and verification and authentication techniques to analyze transaction data and identify fraudulent activity. The project will involve a review of the literature on fraud detection techniques, machine learning algorithms, and related studies. The project will also include the collection and preprocessing of transaction data, the development and testing of machine learning algorithms and rule-based systems.

I. INTRODUCTION

Transaction fraud detection refers to the process of identifying and preventing fraudulent transactions. Fraudulent transactions can occur in various industries, including banking, insurance, and e-commerce. Fraudulent transactions can result in significant financial losses, reputational damage, and legal consequences for businesses and individuals. The increasing use of digital transactions has led to a rise in transaction fraud, making it more important than ever to have effective fraud detection systems in place. Transaction fraud can occur in different ways, such as identity theft, credit card fraud, and money laundering. Fraudsters are constantly developing new techniques to evade detection, making it essential to have a robust fraud detection system that can keep up with these evolving threats. Transaction fraud detection involves the use of various techniques and methods to identify fraudulent transactions. These techniques may include machine learning algorithms, rule-based systems, and verification and authentication techniques. Machine learning algorithms can learn from transaction data to identify patterns and trends that indicate fraudulent activity. Rule-based systems use predefined rules to identify fraudulent transactions based on specific characteristics. Verification and authentication techniques, such as two-factor authentication and biometric authentication, can confirm the identity of the user or entity involved in the transaction and reduce the likelihood of fraudulent activity. In this project, we will develop a transaction fraud detection system that uses machine learning algorithms, rule-based systems, and verification and authentication techniques to identify fraudulent transactions. The system will analyze transaction data in real-time and alert users of any suspicious transactions. The goal of this project is to develop a system that can accurately and efficiently detect fraudulent transactions, reducing the financial and reputational damage caused by transaction fraud. Transaction fraud detection refers to the process of identifying and preventing fraudulent transactions. Fraudulent transactions can occur in various industries, including banking, insurance, and e-commerce. Fraudulent transactions can result in significant financial losses, reputational damage, and legal consequences for businesses and individuals.

II. METHODOLOGY

It is essential that any programmer must thoroughly know the language he or she uses when designing and analyzing. The programmer would have to analyze the program and then know the problem he needs to solve. He would then perform the process of coding while applying the process of design which he presented previously. Finally, he or she would have to test the program in order to ascertain compatibility with customer requirements. The process we have mentioned, including Analysis, Design, Coding and Testing, identifies the project's Software Development Life Cycle (SDLC) as any project would have to go through all these processes using the appropriate methodology. Otherwise, chaos would ensue. We shall use the Interactive and incremental development methodology in order to develop a prototype system. This process is characterized with flexibility and revision whenever necessary in all phases. The process would begin with an initial plan and conclude with interaction among the various phases and components. As to designing the processes used in describing and interactions in this project, we shall be using the UML (Unified Modeling Language).

SYSTEM SPECIFICATION:

Software Requirements

Web Browser: IE 8.0 or Mozilla 3.0.8 or Above.OS: Windows 07 and above

Software : Eclipse , XAMP, Apache Tomcat 7.0Language : Java, J2EE (JSP and Servlet)

Front End : CSS, HTML, JAVASCRIPT, Java 1.8

Back End: MySQL

Server : Apache Tomcat 7.0

Hardware Requirements

Processor : Pentium IV or above (Minimum) RAM: 128 MB (Minimum) 256 MB or AboveHDD: 20 GB or Above

Internet connectivity with good speed

III. MODELING AND ANALYSIS

IV. RESULTS AND DISCUSSION

This chapter describes the system design of OSP and the topics in this chapter areER-Diagram ,Use case diagrams, class diagram, sequence diagrams, activity diagram of User, activity diagram of Admin, DFD and data base design.

FEASIBILITY STUDY

A feasibility study is an evaluation of a proposal designed to determine the difficulty in carrying out a designated task. Generally, a feasibility study precedes technical development and project implementation.

1. TECHNOLOGY AND SYSTEM FEASIBILITY:

The assessment is based on an outline design of system requirements in terms of Input, Processes, Output, Fields, Programs, and Procedures. This can be quantified in terms of volumes of data, trends, frequency of updating, etc. in order to estimate whether the new system will perform adequately or not. Technological feasibility is carried out basically to determine whether the company has the capability in terms of software, hardware, personnel and expertise to handle the completion of the project. HCL fulfilled all the above requirements for the efficient working of application.

2. ECONOMIC FEASIBILITY:

Economic analysis is the most frequently used method for evaluating the effectiveness of a new system. More commonly known as cost/benefit analysis, the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system. An entrepreneur must accurately weigh the cost versus benefits before taking an action.

3. COST BASED STUDY:

It is important to identify cost and benefit factors. Cost and benefits can be categorized into the following categories. Basically it is an analysis of the costs to be incurred in the system and benefits derivable out of the system. In a broad sense the costs can be divided into two types 1. Development costs

2. Operating costs.

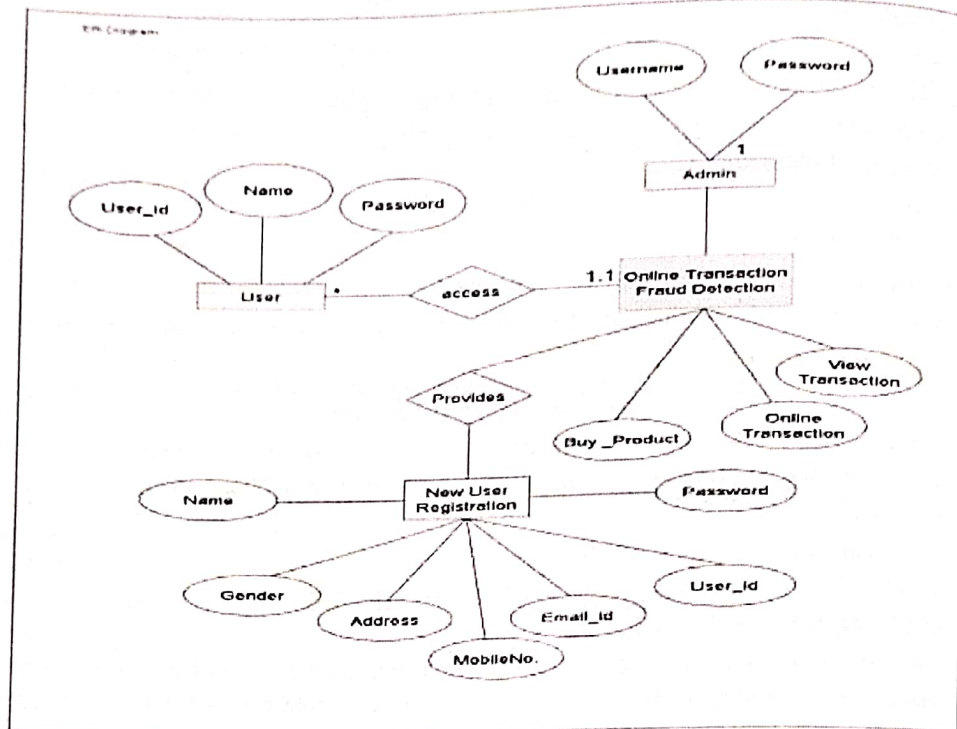
4. TIME BASED STUDY:

Contrast to the traditional system management it can generate any information of data just by single click and it saves user time .No extra time is being provided to deliver application.

5. OPERATIONAL FEASIBILITY:

It is a measure of how well a proposed system solves the problems, and takes advantages of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. This project provide interactive interface to generate report as per the requirements and also user can update the information efficiently. Most of the staff in NIC is computer literate hence the user would be able to use the system. Further NIC also have trained manpower who can keep the .

ER-Diagram:



Use Case Diagram:

A use case diagram is a dynamic or behavior diagram in UML. Use case diagrams model the functionality of a system using actors and use cases. Use cases are a set of actions, services and functions that the system needs to perform.

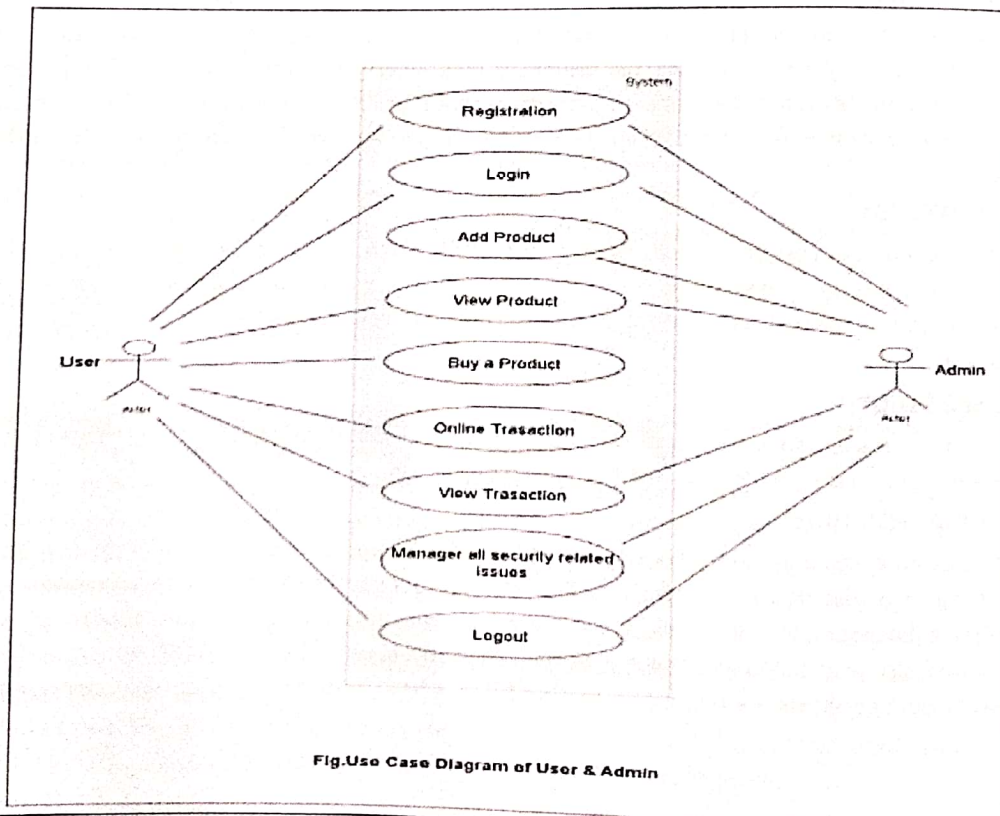
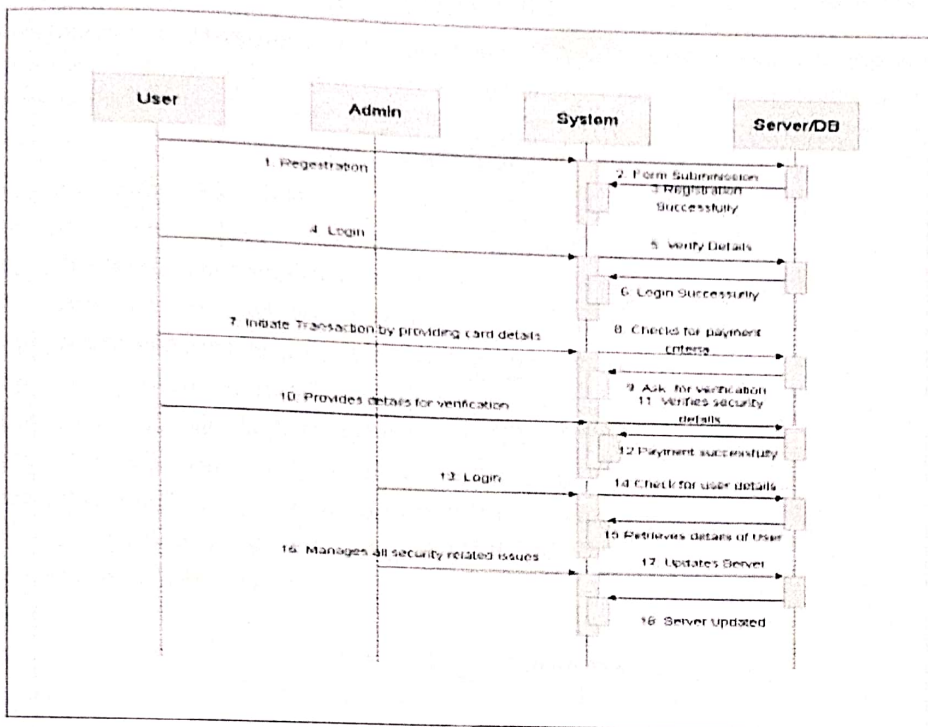


Fig. Use Case Diagram of User & Admin

Sequence Diagram:



Activity Diagram of Users:

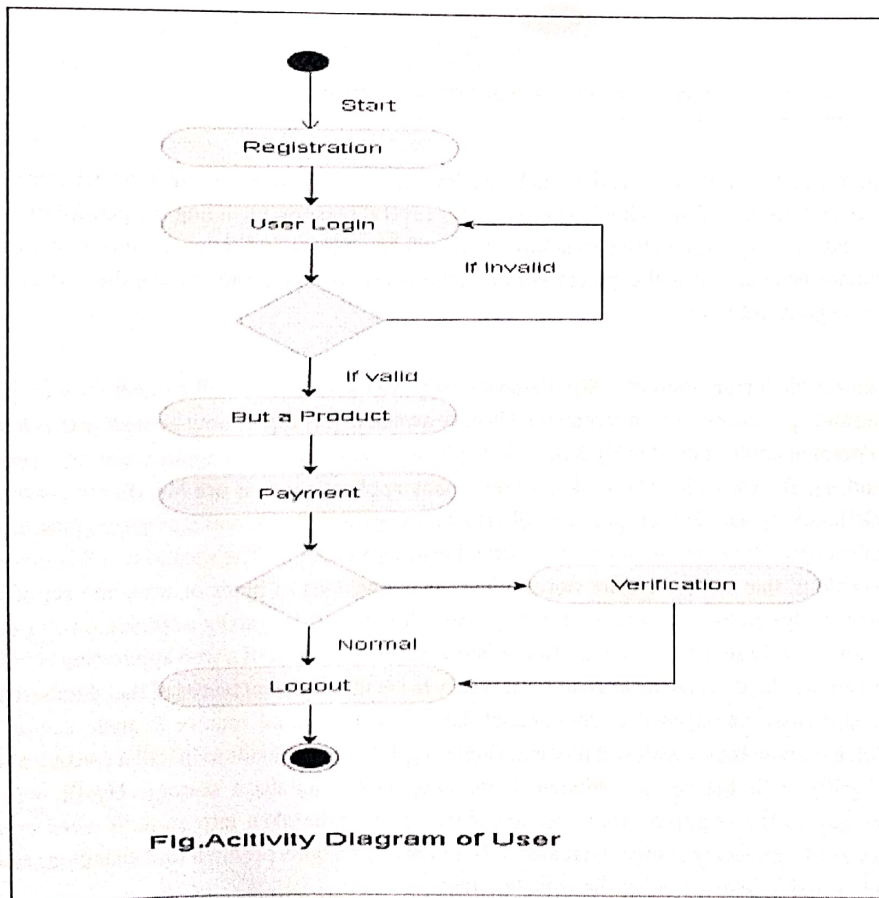
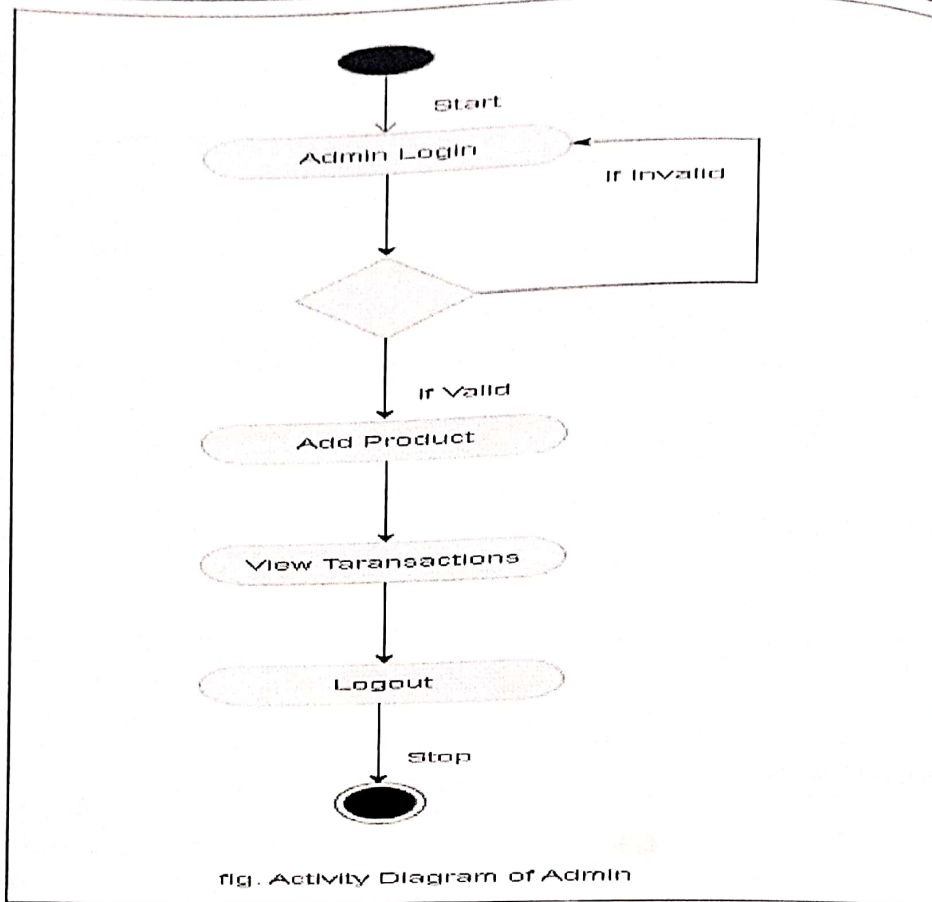


Fig. Activity Diagram of User



DATABASE:

Since this project is in its initial stages, and is still being developed and updated, we shall be using database files in order to store various data. This technology is useful for several reasons, including the possibility of speedily and easily amending database, database structured data will be uniform and independent of applications, the flexibility encountered in the use of the system as well as the ease in recalling and reading the data and ensuring applicability through the internet

MYSQL

My SQL provides a implementation of a SQL database very well suited for small to medium web pages. The database is free and open source with a commercial license available (My SQL is now owned by Oracle after they bought Sun). Common applications for My SQL include php and java based web applications that require a DB storage backend, e.g. Dokuwiki, Joomla, xwiki etc. Very many applications that use MySQL are geared towards the LAMP stack (Linux, Apache, MySQL, php). MySQL is usually used with 2 different storage engines, one is called MyISAM doesn't support transactions and stores each table in a set of 3 files. The second is called InnoDB which supports transactions, this storage engine stores all data in a single set of bytes or uses one set of bytes per database directory. MySQL has one major advantage, since it is free, it is usually available on shared hosting packages and can be easily set up in a Linux, UNIX or Windows environment. If a web application requires more than database, requires load balancing or shading, it is easy to set up maybe instances of the database requiring only the hardware costs, as opposed to commercial databases that would require a single license for each instance. MySQL has some issues with stability and clustering, it is very difficult to install a consistent database transactions or not, so the requirements of the application have to be taken into account when creating the database tables. For large, heavily loaded databases, it is a major operations problem that changing the database structure is only possible when locking the complete tables.

V. CONCLUSION

This in turn translated to development of an application that met the set objectives and the user requirements also. Hence, most of the set objectives were met with the implementation of the application as it facilitated constant inflow of information from stakeholders that helped in coming up with a good design for the application.

VI. REFERENCES

- [1] <https://www.tutorialspoint.com>
- [2] <https://www.guru99.com/>
- [3] <https://www.w3schools.com/java/>
- [4] <https://www.javatpoint.com/java-tutorial>
- [5] <https://beginnersbook.com/java-tutorial-for-beginners-with-examples/>
- [6] <https://www.mysqltutorial.org/>
- [7] <https://dev.mysql.com/doc/refman/8.0/en/tutorial.html>
- [8] <https://www.w3resource.com/mysql/mysql-tutorials.php>
- [9] <https://help.shopify.com/en/manual/products/searching-filtering>
- [10] <https://neilpatel.com/blog/ecommerce-website-search/>
- [11] <https://www.irjmets.com/>

HAND GESTURE RECOGNITION USING PYTHON AND OPEN CV

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Pune, India

ABSTRACT

Hand gesture recognition is one of the system that can detect the gesture of hand in a real time video. The gesture of hand is classify within a certain area of interest. In this study, designing of the hand gesture recognition is one of the complicated job that involves two major problem. Firstly is the detection of hand. Another problem is to create the sign that is suitable to be used for one hand in a time. This project concentrates on how a system could detect, recognize and interpret the hand gesture recognition through computer vision with the challenging factors which variability in pose, orientation, location and scale. To perform well for developing this project, different types of gestures such as numbers and sign languages need to be created in this system. The image taken from the real time video is analysed via Haar-cascaded Classifier to the gesture of hand before the image processing is done or in the other word to detect the

appearance of hand in a frame. In this project, the detection of hand will be done using the theories of Region of Interest (ROI) via Python programming. The explanation of the results will be focused on the simulation part since the different for the hardware implementation is the source code to read the real-time input video. The developing of hand gesture recognition using Python and OpenCV can be implemented by applying the theories of hand segmentation and the hand detection system which use the Haar-cascade classifier.

INTRODUCTION

In a day-to-day life, hand gesture recognition is one of the system that can detect the gesture of hand in a real time video. The gesture of hand is classify within a certain area of interest. Designing a system for hand gesture recognition is one of the goal of achieving the objectives of

this project. The task of recognizing hand gestures is one of the main and important issues in computer vision.

With the latest advances in information and media technology, human computer interaction (HCI) systems that involve hand processing tasks such as hand detection and hand gesture recognition.

The first step in any hand processing system is to detect and locate the hand in the real-time video from the webcam. In the process of detection of hand, according to hand gesture recognition generally involves multiple levels such as image acquisition, pre-processing, feature extraction and gesture recognition. Image acquisition involve capturing image in the video frame by frame using a webcam. This study comprises on how to implement a complete system that can detect, recognizing and interpreting the hand by using Python and OpenCV in any intensity of light, pose or orientation of hand.

REQUIREMENTS

Python – 3.x (we used Python 3.8.8 in this project)

2. OpenCV – 4.5

Run “pip install opencv-python” to install OpenCV.

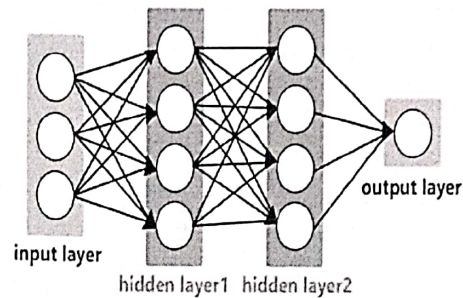
3. MediaPipe – 0.8.5

Run “pip install mediapipe” to install MediaPipe.

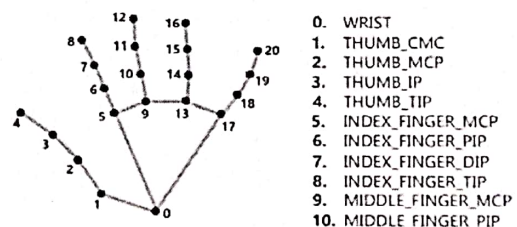
4. Tensorflow – 2.5.0

Run “pip install tensorflow” to install the tensorflow module.

5. Numpy – 1.19.3



We'll first use MediaPipe to recognize the hand and the hand key points. MediaPipe returns a total of 21 key points for each detected hand.



Steps to solve the project:

- Import necessary packages.
- Initialize models.
- Read frames from a webcam.
- Detect hand keypoints.
- Recognize hand gestures.



ACKNOWLEDGEMENT

Perseverance, Inspiration &

Motivation have always played a key role in the success of any venture.

At this level of understanding it is difficult to understand the wide spectrum of knowledge without proper guidance and advice. Hence we take this o to express our sincere gratitude to our respected Project Guide who as a guide evolved an interest in us to work and select an entirely new idea for project work. He has been keenly co-operative and helpful to us in sorting out all the difficulties.

My deep sense of gratitude to
Matrathwada MitraMandal's
Polytechnic for their timely advice and
encouragement in our project
development.

I would also thank my Institution and my
faculty members without whom this project
would have been a distant reality.

CONCLUSION

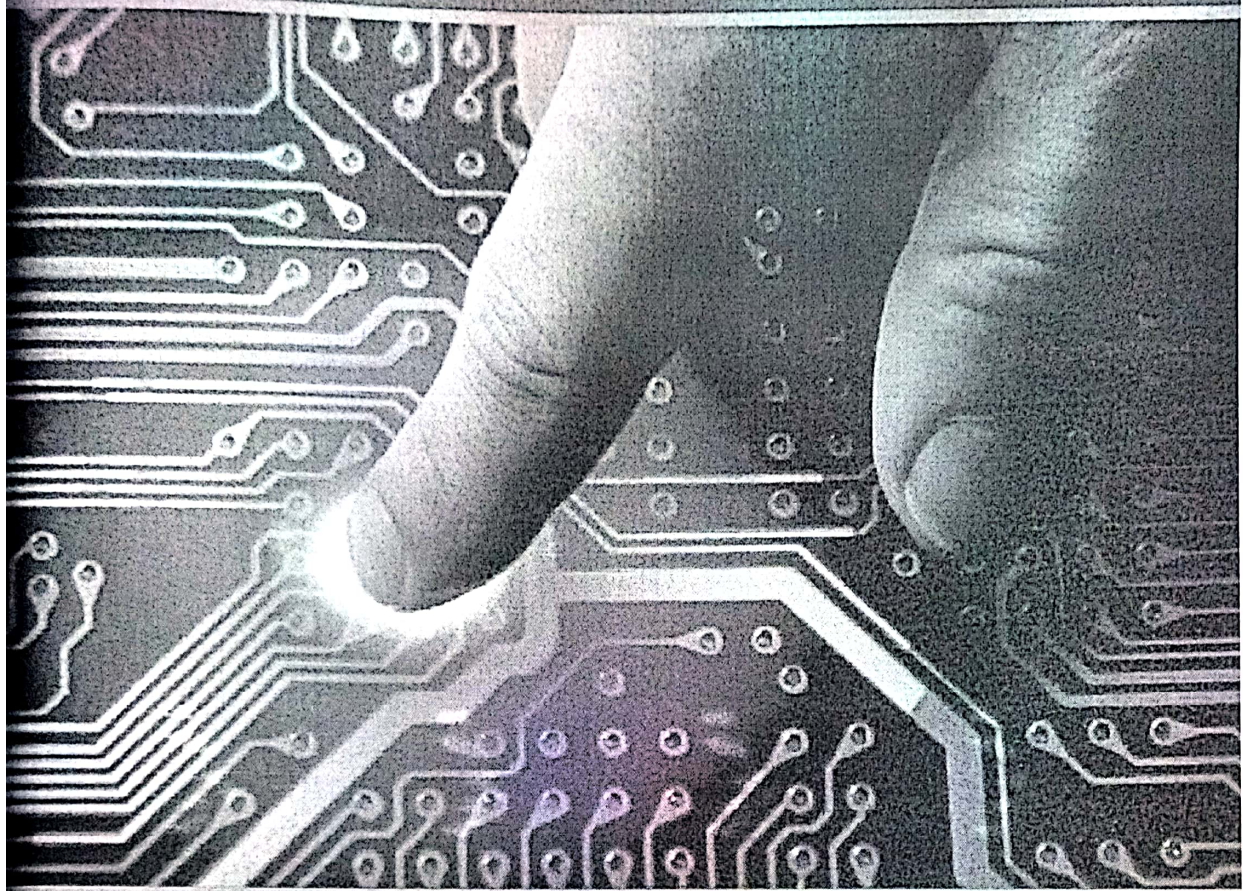
As a conclusion based on the result of the project, it can be seen that developing the hand gesture recognition using Python and OpenCV can be implemented by applying the theories of hand segmentation and the hand detection system which use the Haar-cascade classifier. To summarize it, this system has accomplished several objective in this project manage to establish a complete system for detecting, recognizing

and interpreting hand gesture recognition through computer vision using Python, OpenCV, and able to create the number and sign languages of hand gesture shown in the system that will meets the requirements of the project.

REFERENCES

- [1] M. M. Roomi, R. J. Priya, and H. Jayalakshmi. Hand Gesture Recognition for Human-Computer Interaction (J. Comput. Science vol. 6) no. 9 pp. 1002-1008.
- [2] S. N. Karishma and V. Lathasree 2014 Fusion of Skin Color Detection and Background Subtraction for Hand Gesture Segmentation (International Journal of Engineering Research Technology) vol. 3 no 1 pp 13-18.
- [3] A. Dhawan and V. Honrao 2013 Implementation of Hand Detection based Techniques for Human-Computer Interaction (International Journal of Computer Applications) vol. 72 no. 17 pp 6- 13
- [4] C. Von Hardenberg and F. Bérard 2001 Barriers to human-computer interaction (Proceedings of the 2nd workshop on Perceptive user interfaces) pp 1-8.
- [5] K. Nickel and R. Stiefelhagen 2007 Visual recognition of pointing gestures for human-robot interaction





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Spice Management System

Pruthviraj Dattatray Shrimangale

Department of Computer, Marathwada Mitra Mandal's Polytechnic, Pune, India
Department of Computer, Marathwada Mitra Mandal's Polytechnic, Pune, India

ABSTRACT: - As it said that there is no taste to food without spices. There are number of spices present in the world. Also many do business of spices. So it is difficult to store the data by the "Book and Pen" method. So to make it easy this website is useful. As in this Website the owner can store everyday data comfortably. So the production of spices is landing on large scale so as the production is large the data is huge. So this website makes work easy and comfortable.

I. INTRODUCTION

As food lovers, we Indians are devoted to spices. Spices play a significant role in our festivals, celebrations, and even daily lives. We may be divided by political boundaries, but the love for spices is a bond we share. Indian food is rich in spices unlike other markets, and this can be very well seen in the consumption pattern of spices. Textiles and perfumes are two of India's largest exports in Spices. The market is exporting to places like Arabia, Sumeria, Mesopotamia, China, and Egypt. Since the 1st century AD, spices have been discussed in Roman imperial literature. The Ramayana is one of the many sacred texts dedicated to spices. Spices were also delivered to distant places, such as Carthage, Alexandria, and Rome. India is the world's greatest producer of a wide range of species with the most varied aromas and flavours. Spices are grown and harvested in accordance with climatic conditions. The initial phase in this procedure is cleaning and drying, during which the spices are filtered and then dried. The spices are permitted in a crushing machine after they have been cleaned and dried. With the growing demand, it is essential that the production must also keep up. Hence improving and enhancing spice production process requires plant automation. Cleaning, grinding, blending, sieving, material handling, and bulk storage, batch manufacturing, and packing are all automated procedures in spice processing, resulting in high quality and cleanliness of the finished product. Indpro provides automated material handling systems for feeding silos, cleaning systems, mills, mixers for salt, starch, spices, and ingredients, and conveying systems for the finished spice combinations to packaging lines, as well as process leading visualization technologies. External and internal silos, loading stations for bags, jumbo bags, and weighing systems for ingredients and minor components are typical offerings from Indpro. Spices grown on Indian fields provide the finest perfume and flavour. It is of paramount essence that the quality control process for us begin on the fields (at the production centres). When it comes to producing high quality spices, drying is an important step. The results of the other phases in the manufacturing process are greatly influenced by the level of perfection achieved during the drying process. Proper drying is key to keeping the fragrance and flavour of the material. The material is naturally dried by sunlight but roasted if needed to maintain optimum moisture content. All bulk seeds are gathered in a warehouse and mass dried before being delivered to various places in small and jumbo bags, depending on the needs. A seed is often packaged in 25 kg bags, 625 kg bulk bags, or 1000 kg jumbo bag. To preserve quality, proper transportation is required. It's critical to have the correct supply chain in place. Before processing, the crop should be cleaned. The first step is to use a winnowing basket to eliminate dust and grime. Bamboo, palm, or other leaves can be used to make this. Someone who is used to this type of labour can swiftly and effectively remove the dust, grime, and stones. Contaminants are removed from spices and herbs by washing them with weak alkaline cleaning solutions and neutralising agents, then passing them through concentric zones with counter-current flow, spray rinsing, and drying. Clean and dry material is kept in an intermediate storage silo, a tank, or a hopper near the process area, and the stored material is pneumatically delivered to the grinding machine for further processing. A variety of pneumatic conveying systems can be used depending on the material to be treated, its qualities, and the desired output. The process is assessed to gauge methods, tools, and practices, which are wont

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Traceability continues to be a topic of much discussion in the larger food and beverage world, with regulations ramping up and brand transparency an absolute must to satisfy the expectations of today's savvy shoppers.

Spice manufacturers often work with a wide variety of suppliers from around the world, which can lead to supply chains devolving into a tangled web.

Consumers are more discerning when it comes to product quality and safety these days, and your brand's reputation in large part hinges on these two key fronts.

By utilizing the product specifications functionalities of a food and beverage ERP, you can flag all ingredients with allergen or other safety concerns within the interface to minimize your risk of error and help ensure that all necessary declarations are made

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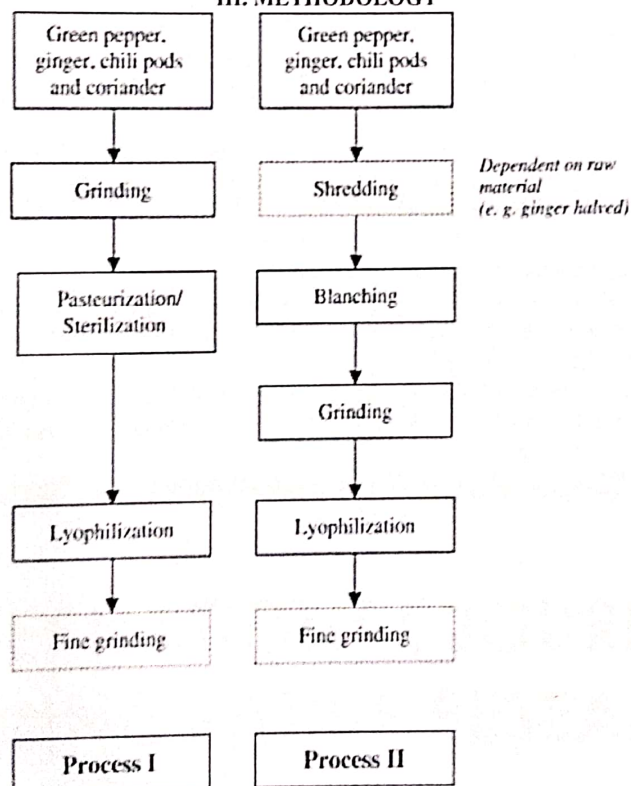


Fig.1

IV. LITERATURE SURVEY

1. In our project we are going to make a database of the Retailer.
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The BPG is still a work in progress. The road to international standardization is an arduous one. SPICE Project schedule was and still is ambitious. The quality of emerging documents, according to current reviewer feedback, seems generally acceptable. Two years of trials and revision (1995-1996) should help resolve some technical questions. The authors enjoy working with their international colleagues and the SPICE Project, sharing ideas, and learning from each other.

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References

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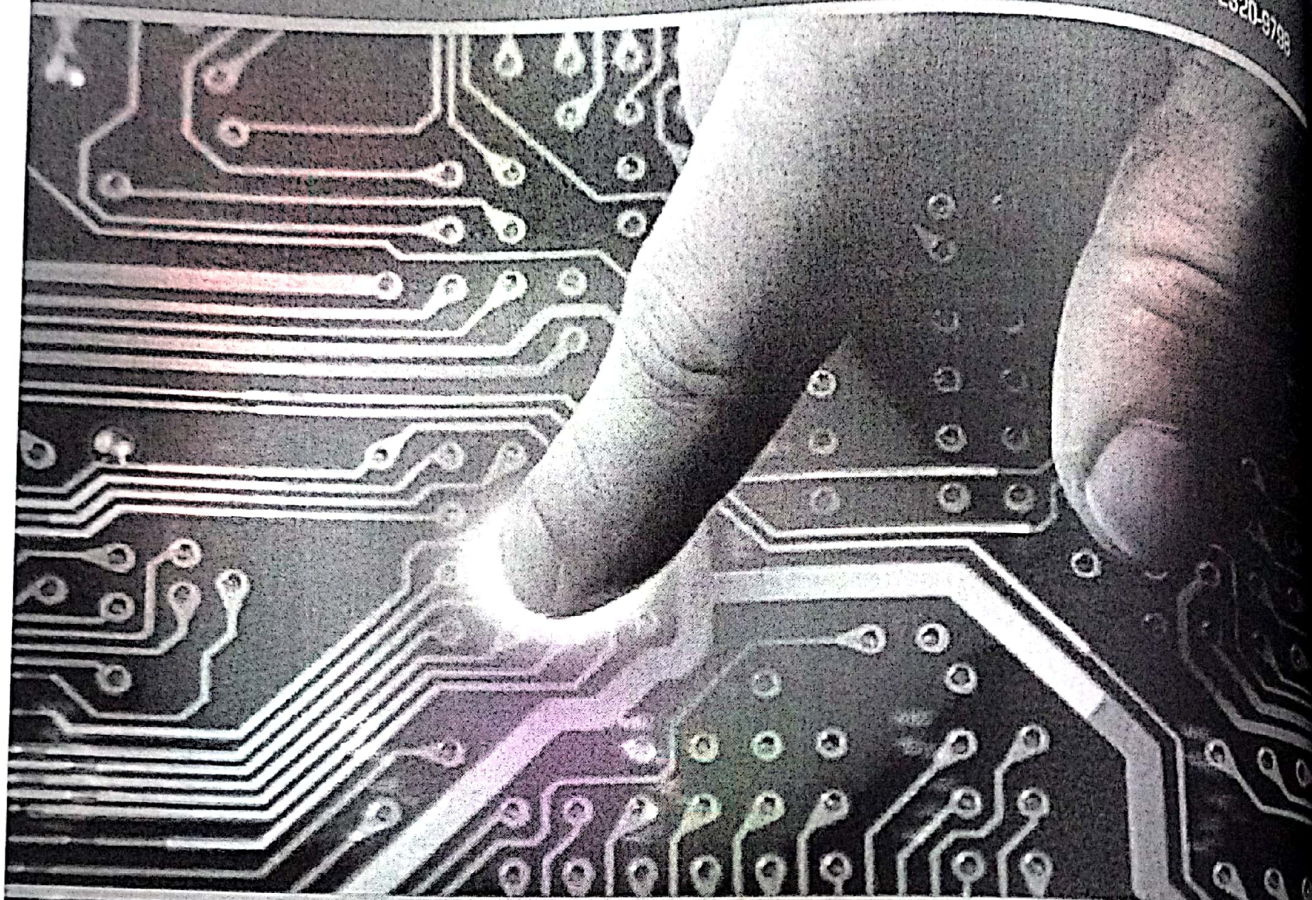
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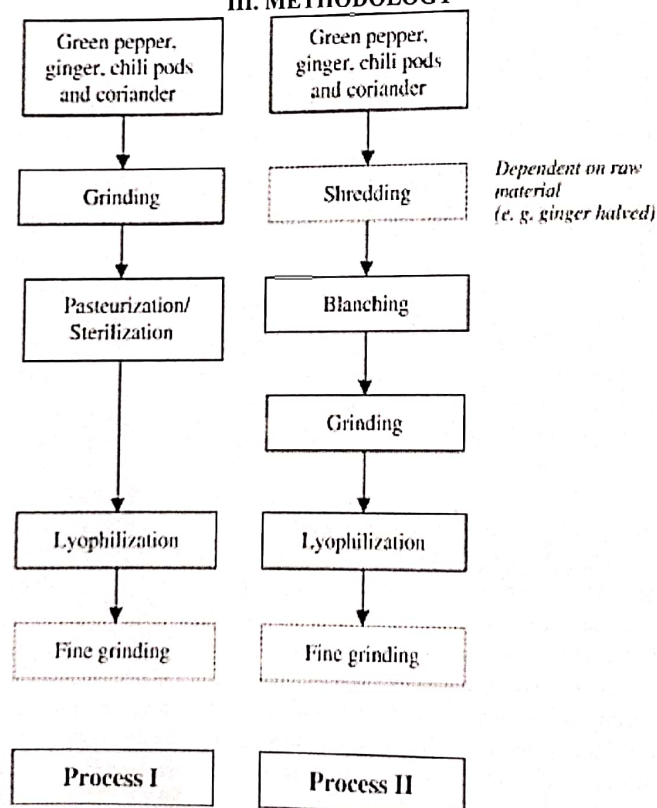


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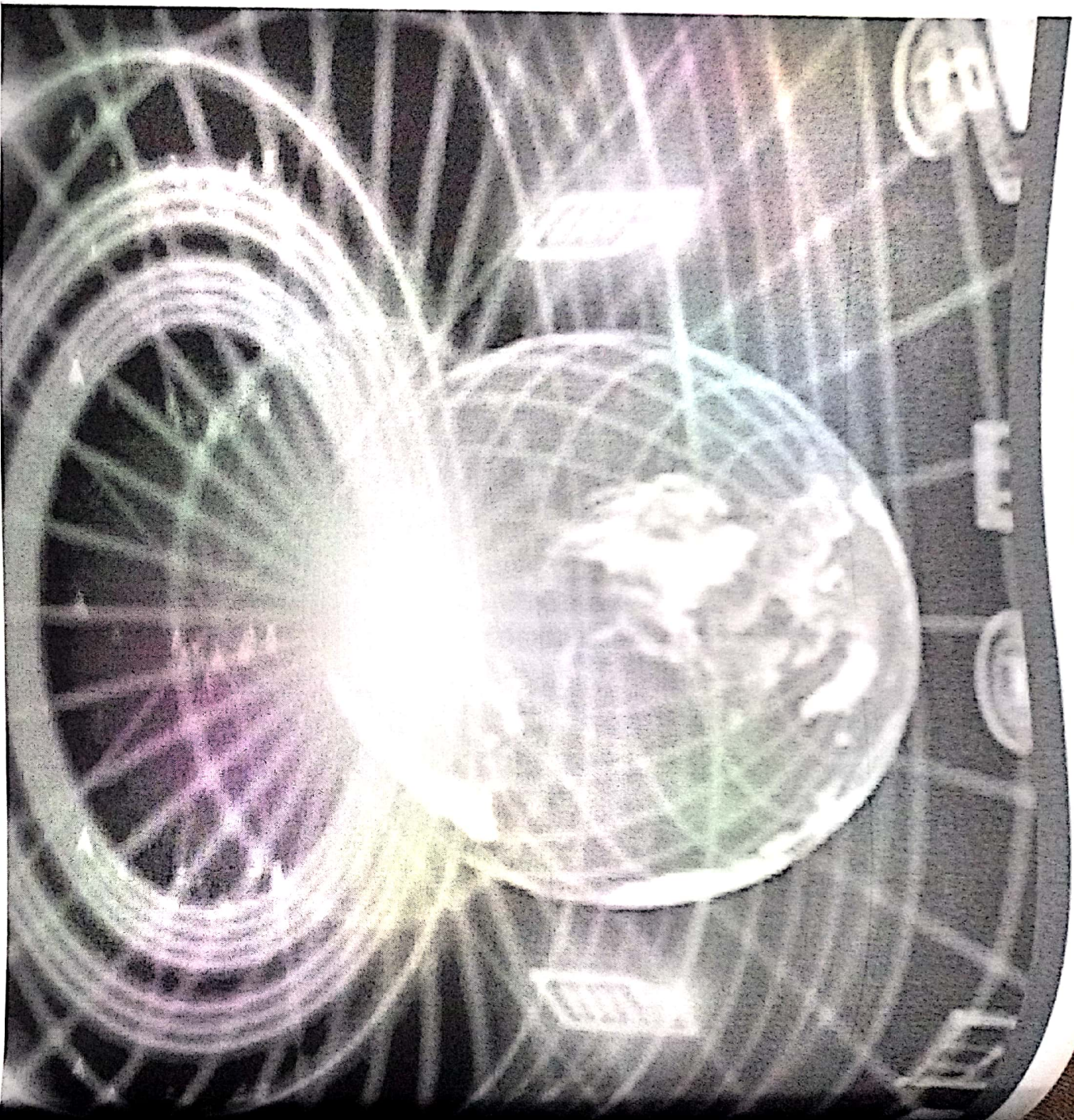
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SMART PLANT MONITORING SYSTEM

Prachi Chavan¹, Sunakshi Galkwad², Shruti Manwar³

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ABSTRACT

Internet of Things (IoT) and the internet have completely taken over today's world. All humans utilize the internet to fulfil basic needs. The network of actual items is known as the Internet of Things (IoT). Simply put, it refers to the process of keeping an eye on a physical machine or object. It can also refer to the interconnection of physical objects that have been implanted with electronics, sensors, software, and network connectivity. The majority of people rely on agriculture, which is the backbone of this country and most of the people in India do farming. Sensors are used to measure temperature, humidity, and light, and depending on the results, additional processing may be carried out. We suggest a system that will use a variety of sensors to record all the information about the soil and temperature. Through the NodeMCU the sensor values or result will be displayed on the mobile.

Keywords: IOT, Sensor ,Humidity, IOT Cloud Application , Temperature

I. INTRODUCTION

Temperature, humidity, and moisture measurements can be transferred via IoT to the cloud for analysis. The Internet of Things platform is NodeMCU. The platform for the cloud server is thing talk. The primary goal is to give the user continual plant monitoring. The suggested smart plant management can be used for monitoring household plants as well as small-scale agricultural. Advanced sensors can be utilized to help commercial farming and this model can be strengthened to be more resilient. The user would be able to continuously monitor the plant utilizing this smart plant managing system employing IoT. The user will be alerted whenever the soil moisture level drops below a threshold value, and they can use the IOT cloud Arduino application to turn on the motor to water the plants. To prevent the possibility of a fire starting, the DTH11 sensor can be used to alert the user when the temperature exceeds a threshold. All sensor readings are sent in real-time to the cloud, where the user can access them whenever they want. An entire field can be monitored by a variety of sensors, and the data can then be processed by data algorithms to provide the user with recommendations for effective farming techniques.

II. METHODOLOGY

Sensors and other technologies are frequently used in smart plant monitoring systems to gather information on different aspects of plant development and health, including soil moisture, temperature, humidity, and light levels. The analysis of this data is then utilised to automate many aspects of plant care, as well as to reveal insights into the demands and growth patterns of the plant.

A general approach that can be utilised to create a smart plant monitoring system is as follows:

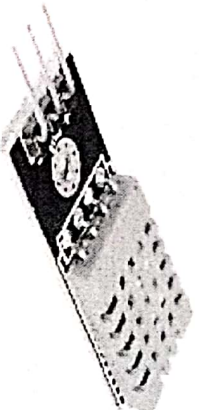
1. **Specify the aims and conditions:**
Determine the precise objectives and needs of the smart plant monitoring system, including the data that will be gathered, how it will be analysed, and the actions that will be performed in response to the analysis.
2. **Pick the right sensors and technologies:**
Pick the right sensors and technologies to gather information on plant development and health. Think about things like accuracy, dependability, and system compatibility.

III. HARDWARE AND SOFTWARE REQUIREMENTS

1. Digital Humidity and Temperature sensor

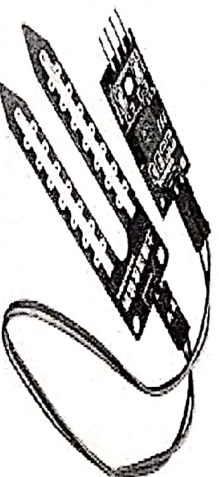
The air's temperature and relative humidity are gauged using a DHT11 sensor. Its primary benefit is that it is an inexpensive digital sensor for measuring relative humidity and temperature [5]. Temperature changes the relative humidity. The air is more humid when it is warmer outside than it is indoors and vice versa. It is simple to interface with all microcontrollers, including Arduino, NodeMCU, and others. It has a thermistor for detecting

temperature and a capacitive sensing device for measuring humidity. Two electrodes make up the capacitance. The substrate that regulates moisture serves as a dielectric between them. When the humidity varies, there will be a change in capacitance. A Negative Temperature Coefficient Thermistor sensor can determine the temperature based on the corresponding resistance changes and can be converted into digital form. There will be a decrease in resistance as the temperature rises. The range of temperatures is 0 to 50 Celsius. This sensor's humidity variation ranges from 20 to 80%.



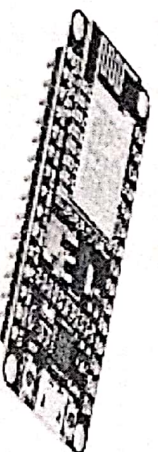
2. Soil Moisture sensor(FC-28)

This sensor measures the amount of water in the soil. Agriculture uses it extensively. There is a lack of water content in the soil while the sensor output is high, and vice versa. By turning on the system when the moisture content is below the threshold amount, it prevents water wasting. It is also used to calculate the amount of moisture that evaporates over time. This sensor has an LM393 comparator and a potentiometer built in. A comparator is used to compare the output moisture content with the threshold value, and the output led will turn on or off in accordance. A potentiometer is used to determine the point value. Both analogue and digital output connections can be established to the sensor. The sensor output in analogue mode will contain numbers between 0 and 1023. In general, percentages are employed to measure moisture. The analogue output is thus mapped to the range of 0 to 100.



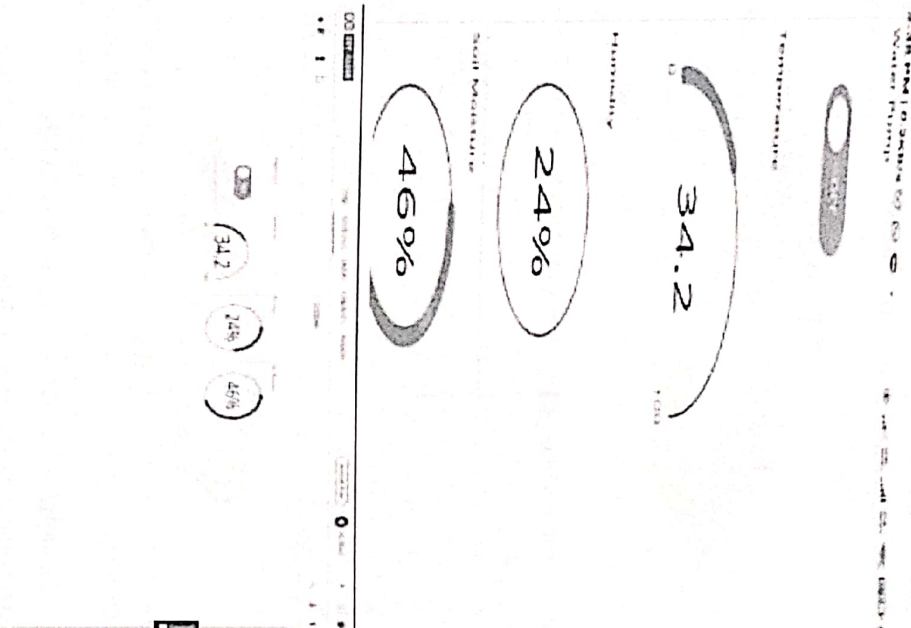
3. NodeMCU(esp8266)

The NodeMCU firmware is based on LUA. It was created for the WiFi chip ESP8266. It is a WiFi module chip at a fair price that can connect to the Internet of Things (IoT). It has a variable clock frequency that ranges from 80 to 160 MHz and is a 32-bit RISC CPU. NodeMCU has RTOS support. The NodeMCU Development Board is equipped with serial communication protocol, analogue and digital pins, and the ability to connect to a WiFi module. A total of 30 pins, including Power pins, GND, I2C pins, GPIO pins, ADC channels, PWM pins, UART pins, SDIO pins, UART pins, and Control pins, can be used to interact with external circuits. 17 pins make up GPIO. This module may operate in the 2.5V to 3.3V voltage range. The integrated micro B USB port can be used to power the ESP8266 NodeMCU. Solar energy is one renewable energy source that can be used to power NodeMCU. Due to its small size and low energy consumption, it is widely used. The primary drawback of NodeMCU is that it only has one analogue pin and few output pins.



4. Arduino IOT Cloud

The Arduino IoT Cloud is an online platform that makes it easy for you to create, deploy and monitor IoT projects. With an intuitive user interface and an all-in-one solution for configuration, coding, uploading, and visualization, the Arduino IoT Cloud is a platform that anybody can use to develop IoT projects. This post will give a general introduction of the Arduino IoT Cloud and examine some of its various components. However, it's also totally fine if you're eager to get going and explore the Arduino IoT Cloud on your own. You may always check back here for updates! Connection via Wi-Fi is an easy alternative, and your credentials can safely be entered during the configuration of a project. This type of connection is most suitable for low-range projects, where you connect your board to the cloud via your home/work/school router.



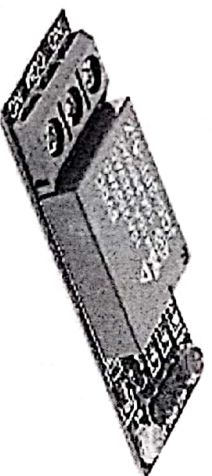
5. DC motor pump

Pumps that run on DC current utilize the motor's DC current to transport fluid through its path. Alternating current is not used by DC power pumps. Due to its portability and convenience, DC current is preferable to AC current. In contrast to an AC system, a DC system does not need an oscillator. Compared to AC pumps, DC pumps are more effective. DC systems are more efficient even though AC systems have a longer lifespan. Based on their distinguishing characteristics, DC power pumps can be distinguished. The project's dc motor pump was a submersible, low-cost model. A battery between 3 and 6 volts can power it. With a 220mA low current, it can pump up to 120 liters of water each hour. It has a 500-hour continuous working capacity.



6. Relay NodeMCU

Relay is needed to regulate 230v AC and current of 10A because NodeMCU, which is operated at 5v, is unable to control higher voltage devices directly. Relay jrc3f-05vdc-ct was used to control the circuit. Relays are switches that are used to turn circuits on and off. Where a few circuits are restricted by a single signal, it is frequently utilised. It uses a low power signal to control high power circuits. It consists of signal (S), negative (-), and positive (+) low voltage pins. '+', '-' are connected to the microcontroller's VCC and GND, respectively, while S is connected to one of the Node MCU's inputs to turn on the relay. It has three terminals that are utilised to link the external circuit (NC, NO, and C). Both normally closed (NC) and normally open (NO) are controlled by the same terminal, C. The external circuit is connected to the normally closed and common terminals when the relay is disengaged. The external circuit and the common terminal are connected when the relay is turned on.



7. Jumper Wires

Jumper wires are used to connect components on your breadboard to the header pins on your Arduino. Wire up all of your circuits with these. Simply said, jumper wires are wires with connector pins at either end that can be used to connect two places without soldering. With breadboards and other prototype tools, jumper wires are frequently used to make it simple to change a circuit as required. Fairly easy. Jumper wires are actually among the most elementary things there are. Male-to-male, male-to-female, and female-to-female jumper wires are the most common types. The wire's termination tip distinguishes each one from the other. While female ends do not have a protruding pin and are used to plug into items, male ends do. The most typical and frequently utilized jumper wires are male to male. A male-to-male wire is required to connect two ports on a breadboard.



IV. SMART PLANT MANAGING SYSTEM

A smart plant monitoring system is possible thanks to the Internet of Things. A number of factors, including soil moisture, air temperature, and humidity, are used to monitor plant growth. All sensor readings can be retrieved using NodeMCU. The DHT11 sensor, which is comparable to the digital pin in NodeMCU, is utilised for monitoring the temperature and humidity of the air. In our experiment, a resistive soil moisture sensor is linked to the analogue pin of the NodeMCU. With the help of the built-in WiFi module in NodeMCU, sensor data may be transferred to cloud services. The cloud server's platform is called Things talk. The connection between the NodeMCU and the Things speak server will be made using the Channel ID and API key. The data received in Things speak can be analysed and processed in accordance with user needs, and Things speak also allows users to compare different sensor data, plot it, and perform other operations on it. Additionally, the sensor data is transmitted to the Arduino IOT cloud mobile application. Using the Auth token produced by the Arduino IOT cloud mobile application, the NodeMCU is interfaced with the Arduino IOT cloud mobile application. Anywhere in the world, the user can keep track of the various sensor values in real-time. The water pumping motor system is switchable by the user. Additionally, this was accomplished by specifying appropriate header files and providing appropriate syntax code for NodeMCU's numerous sensors. The data values are immediately delivered to Things speak and Arduino IOT cloud mobile application once the code has been flashed into the NodeMCU and it is linked to any Wifi. If the user has an Internet connection, he can view this data in real-time.

V. WATER CONTROL MANAGEMENT

With the help of the soil moisture sensor, the moisture content of the soil is detected for the growth of the plant, and depending on that moisture content, it is necessary to decide whether to pump water from the container to the plant or not. In general, percentages are used to assess the soil moisture content. Moisture content is higher in moist soil than dry soil, which has lower percentages of moisture content. A potentiometer is used to establish the limit in the soil moisture sensor, which also includes a comparator and a potentiometer. The motor turns on and water flows from the container to the plant if the moisture content is below the threshold value. The motor is OFF and water will not flow from the container to the plant when the moisture content exceeds the threshold value. The distance of the water level in the container using the ultrasonic sensor determines how far water may be pumped from the container to the plant. When the water is not pumped, the distance is shortest and the water level in the container is highest, conversely, when the water is pumped, the distance is longer and the water level in the container is lowest.

VI. CONCLUSION

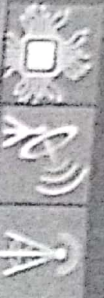
The main purpose of this Smart Plant Monitoring System is to provide better technology for the farmers. Through this user can continuously monitor the soil moisture content using Arduino IOT cloud mobile application. When the moisture amount goes below the threshold value, the user can 'ON' the motor with the press of a button that is present in the Arduino IOT cloud mobile application. The smart plant management system can be implemented in small household farming.

ACKNOWLEDGEMENTS

We have taken efforts in this project. However, it would not have been possible without the kind support and help of my group members and my teachers. I would like to extend my sincere thanks to all of them. I am highly indebted Marathwada Mitra Mandals Polytechnic for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project. I would like to express my gratitude towards my parents & member of Marathwada Mitra Mandals Polytechnic for their kind co-operation and encouragement which help me in completion of this project. Their commitment to efficient inventory management and customer service has been an inspiration to us. We want to express our gratitude to everyone who helped create this Smart Plant Monitoring System once more. This project would not be possible without your help and support.

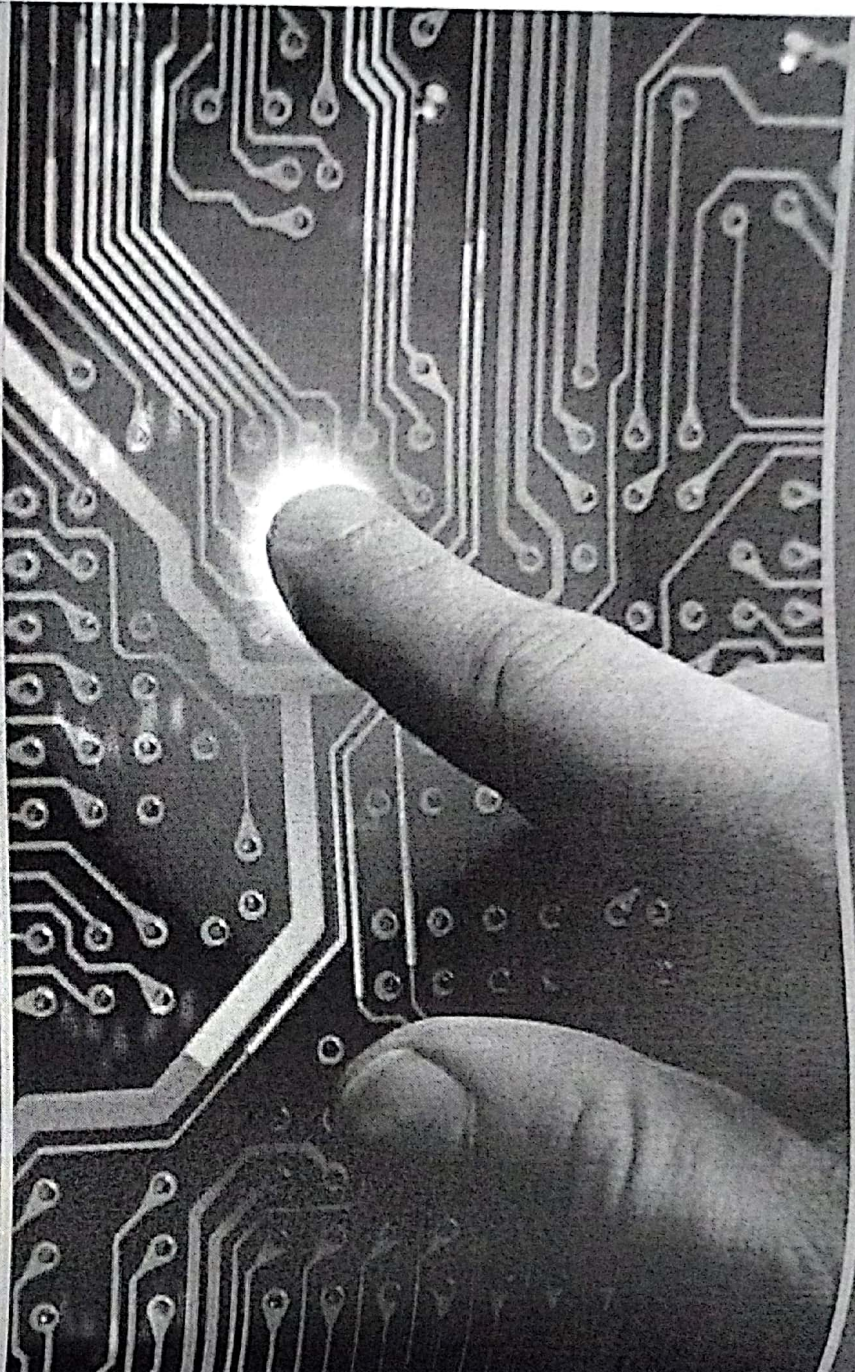
VII. REFERENCES

- [1] Yogesh kumar Jayam1,2, Venkatesh Tunugunta1,3, Sreehari J B1,4, S Harinarayanan1,5 1 Department of Electronics and Communication Engineering, Amrita Vishwa Vidyapeetham, Amritapuri, India. 2 yogeshkumar7660@gmail.com,3 venkytunugunta@gmail.com,4
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Alcohol Sensing Machine Display with Alarm

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ABSTRACT— The main aim of this report is to develop a system that can detect the alcohol content in the air exhaled by the driver and automatically turn off the car if Alcohol percentage exceeds the limit. In this project I am using **arduino** uno . I am going to embed the program to receive data from alcohol sensor, convert it into digital form and then control the ignition system. Alcohol sensor gives out analog data that can't be analyzed by **arduino** so I use analog to digital converter to convert it in to digital format. After that the data is stored and then compared to threshold values if the value is beyond its

I. INTRODUCTION

This report presents the progress in using a alcohol Detector, a device that senses a change in the alcoholic gas content of the surrounding air. The sensor will then analyze the amount of alcoholic vapors and offer the user some indication of the amount of alcohol present. To This device is more commonly referred to as a breath analyzer; as it analyzes the alcohol content from a person's breath. The device is mostly used by law enforcement to determine whether an individual has been driving under the influence of alcohol(Articles, 2011).

II. STATEMENT OF THE PROBLEM

Solve cases of road accidents due to drunk driving To Curb recklessness of highway drivers To Also prevent drunkenness among workplace employees, organizations etc

III. AIM AND OBJECTIVES

The aim of this report is to design an alcoholic detector that sound alarm with the aid of buzzer. The objectives include
To design power supply circuit To develop the alcoholic sensor circuit To implement the microcontroller unit
To develop the software implementation

IV. SCOPE OF THE STUDY

This system detects the content of alcohol in the breath and thus it attempts to clamp down alcoholics. This system uses arduino, LCD display, MQ-3 gas sensor, relay and buzzer. The output of the sensor is directly proportional to the content of alcohol consumed. Nowadays alcohol sensor play a significant role in our society and it has vast applications. arduino-1.8.19 ide will be used as the simulation software for the software programming Authors and Affiliations

V. REVIEW OF RELATED WORKS

In the year of 2008, LIU zhen-ya, WANG Zhen-dong and CHEN Rong, "Intelligent Residential Security Alarm and Remote Control System Based On Single Chip Computer", the paper focuses on, Intelligent residential burglar alarm, emergency alarm, fire alarm, toxic gas leakage remote automatic sound alarm and remote control system,

which is based on 89C51 single chip computer. The system can perform an automatic alarm, which calls the police hotline number automatically. It can also be a voice alarm and shows alarm occurred address. This intelligent security system can be used control the electrical power remotely through telephone (Geng, 2007).

VI. ALCOHOL GAS SENSOR(MQ3)

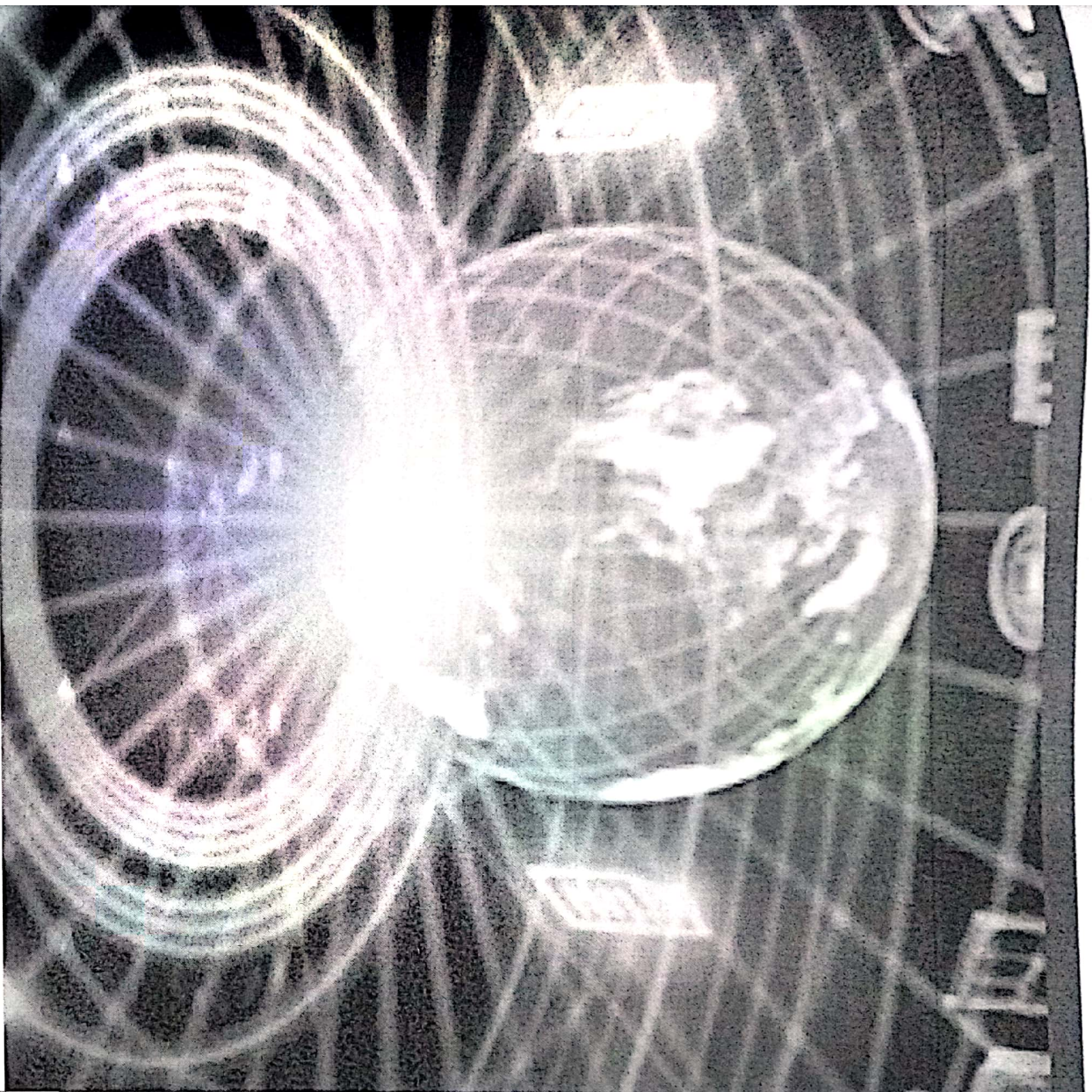
The analog gas sensor - MQ3 is suitable for detecting alcohol, this sensor can be used in a Breathalyzer. It has a high sensitivity to alcohol and small sensitivity to Benzene. The sensitivity can be adjusted by the potentiometer. Sensitive material of MQ-3 gas sensor is SnO₂, which with lower conductivity in clean air. When the target alcohol gas exist, the sensor's conductivity is higher along with the gas concentration rising. use of simple electro circuit, Convert change of conductivity to correspond output signal of gas concentration

VII. CONCLUSION

This is a relatively straight forward and easy project that doesn't require much in terms of construction and implementation; in which it's also very efficient and hassle free

REFERENCES

1. Drunk Drivers Beware Of SaabDevice.http://www.buzzle.com/articles/drunken_drivers_beware_saab_device.html] Drunken driving protection system International Journal of Scientific & Engineering Research Volume 2, Issue 12, December-2011 1 ISSN 2229-5518.
2. Geng Juntao, Zhou Xiaotao, Zhang Bingjie, "An Atmosphere Environment Monitor System Based on Wireless Sensor Network", Journal of Xihua University, Natural Science, Vol. 26, no.4, pp. 44- 46,2007.
3. Kenneth J Ayala, 8051 Microcontroller, 3rd Edition. by Killoran, A., Canning, U., Doyle, N., & Sheppard, L, "Review of effectiveness of laws limiting blood alcohol concentration levels to reduce alcohol-related road injuries and deaths," Final Report, London: Centre for Public Health Excellence (NICE), 2010.
4. M. A. Mazidi, J. C. Mazidi, R. D. McKinlay, the 8051 Microcontroller and Embedded Systems, Pearson Education, 2006.
5. Mitsubayashi, Kohji, et al. "Biochemical gas-sensor (biosniffer) for breath analysis after drinking." SIC 2004 Annual Conference. Vol. 1. IEEE, 2004.



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AIR AND SOUND POLLUTION MONITORING SYSTEM

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ABSTRACT

The Air and Sound pollution monitoring system is a technological solution designed to monitor the levels of air and sound pollution in a given area. The system consists of sensors that detect pollutants and measure their concentration in the air and sound levels in the environment. The collected data is then transmitted to a central database, where it is analyzed and visualized in real-time. The system provides a comprehensive understanding of the air and sound pollution levels, which can help to identify sources of pollution, evaluate their impacts on public health, and guide policymakers in making informed decisions about pollution control measures. This abstract highlights the importance of such a system and its potential applications in improving environmental health and promoting sustainable development.

I. INTRODUCTION

Air and sound pollution are among the most significant environmental concerns globally, affecting the health and well-being of humans, animals, and the ecosystem. Various sources contribute to the increase in air and sound pollution levels, including industries, transportation, and natural causes such as dust storms and wildfires. In response, the development of an air and sound pollution monitoring system has become increasingly essential to track and analyze pollution levels accurately. The Air and Sound pollution monitoring system is a technological solution that can detect and measure the concentration of pollutants in the air and the sound levels in the environment. The system comprises various sensors that collect data and transmit it to a central database, where it is analyzed and visualized in real-time. The data obtained from the system can be used to identify sources of pollution, evaluate their impacts on public health, and provide information that can guide policymakers in making informed decisions about pollution control measures. This report aims to provide an overview of the importance of an Air and Sound pollution monitoring system, its features, and its potential applications in improving environmental health and promoting sustainable development. The report will discuss the various types of pollutants that the system can detect and measure, the technology used in the system, and the benefits of the system to the environment and society.

II. FUTURE WORK

The Air and Sound pollution monitoring system has great potential for future development and improvement. Here are some possible areas of future work for the system: Integration with machine learning algorithms: By integrating machine learning algorithms into the system, it can be possible to identify pollution patterns, detect anomalies, and predict future pollution levels. This could lead to more accurate and timely pollution monitoring and control. Multi-sensor integration: The Air and Sound pollution monitoring system can be expanded to include multiple types of sensors that can detect various pollutants, including volatile organic compounds (VOCs), particulate matter (PM), and ozone. This can provide a more comprehensive understanding of the air quality in a given area. Mobile monitoring units: To expand the coverage of the monitoring system, mobile monitoring units can be deployed to different areas to detect pollution levels in realtime. This can be especially useful in areas with high levels of air and sound pollution or during environmental emergencies. Citizen science involvement: Citizen science can be integrated into the monitoring system by involving the public in collecting data on pollution levels. This can increase public awareness of air and sound pollution and provide a more extensive database of pollution levels across various locations. Integration with smart city systems: The Air and Sound pollution monitoring system can be integrated with smart city systems to optimize pollution control measures. For example, the system can provide real-time data to adjust traffic flow or alert citizens to take precautions during high pollution levels. Overall, the Air and Sound pollution monitoring system has enormous

potential for future development and improvement, with possibilities for integration with various technologies and collaborations with other fields.

III. METHODOLOGY

Sensor technology: The system uses advanced sensor technology to detect and measure different types of pollutants in the air and sound levels in the environment. The sensors can detect various pollutants, including nitrogen oxides, carbon monoxide, ozone, and particulate matter. Data collection: The sensors collect data on pollution levels, which is transmitted to a central database in real-time. The system can collect data from multiple sensors, providing a comprehensive understanding of pollution levels in a given area. Data analysis: The collected data is analyzed using advanced algorithms that can detect trends and patterns in the pollution levels. This analysis can help to identify sources of pollution, evaluate their impacts on public health, and provide information for policymakers to make informed decisions about pollution control measures. Visualization: The system can visualize the collected data using maps, graphs, and other visual representations. This can help to communicate the information to policymakers, the public, and other stakeholders, providing a better understanding of the pollution levels and their impacts. Integration with other systems: The system can be integrated with other environmental monitoring systems, such as weather monitoring systems, to provide a more comprehensive understanding of the environmental conditions in a given area. The Air and Sound pollution monitoring system uses a combination of sensor technology, data collection, analysis, visualization, and integration with other systems to provide a comprehensive understanding of air and sound pollution levels in a given area. This methodology can help to identify sources of pollution, evaluate their impacts on public health, and provide information to policymakers to make informed decisions about pollution control measures.

IV. PROPOSED APPROACH/ MATHEMATICAL MODEL

Step 1: We Group Decided

Step 2: We Topics Were Decided

Step 3: PPT Was Made On Topic

Step 4: Started Working On Database

Step 5: We Working On Database

Step 6: Final Check And Connections

V. CONCLUSION

The Air and Sound pollution monitoring system plays a crucial role in assessing the quality of the air and sound in a given area. With the increasing level of pollution, this system provides a comprehensive understanding of the pollution levels and their impacts on public health and the environment. The system uses advanced sensor technology, data collection, analysis, visualization, and integration with other systems to provide accurate and timely information about the pollution levels. The proposed approach for a mathematical model using statistical and machine learning methods can help to identify sources of pollution, predict future pollution levels, and provide information for policymakers to make informed decisions about pollution control measures. The future work for the system includes integrating machine learning algorithms, multi-sensor integration, mobile monitoring units, citizen science involvement, and integration with smart city systems. These developments can improve the accuracy and coverage of the monitoring system, increase public awareness of pollution levels, and optimize pollution control measures. Overall, the Air and Sound pollution monitoring system is an essential tool in promoting a healthier environment and improving the quality of life for people. By implementing effective monitoring and control measures, we can work towards reducing the levels of pollution and creating a safer and healthier world for future generations.

VI. REFERENCES

- [1] Iot Based Air And Sound Pollution Monitoring System International Journal Of Innovative Research Explorer Volume 5, Issue 4, April/2018 Issn No: 2347-6060.
- [2] Design And Analysis Of Iot Based Air Quality Monitoring System 2020 International Conference On Power Electronics & Iot Applications In Renewable Energy And Its Control (PARC) GLA University, Mathura, UP, India, Feb 28-29, 2020.

Obstacle Avoiding Robotic car

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ABSTRACT

Robots reduce the work that people must do on a daily basis. The development of a Sensor-controlled robotic automobile is the subject of this study. With the aid of an Android application, this robotic vehicle aids in controlling robots via C Programs commands. A Robotic Car transceiver module would be located in the receiver component.

This will take in the instructions and send them via Arduino to the robotic car. The automated vehicle based on the user's vocal commands, move in all directions. after speech to text conversion. It will become text, which will enable the transmission of the essential motion instructions via mobile platforms. RF connection. When the Arduino interfaces with ultrasonic sensors, it will aid in automated slowdown anytime it detects obstacle.

INTRODUCTION

It is a robot that walks automatically with the help of an ultrasonic sensor. an ultrasonic sensor is used in many other mini-projects like Smart robots.

Obstacle avoiding robot also known as the autonomous robot.

which takes the decision self. If there is something in front of the robot it will change its path like a human.

So' it is somewhere smart. it is the most popular project nowadays which is searched by most of the students nowadays. and everyone likes this robot in this project, you will also learn many things like how to use the ultrasonic sensor. and using the serial monitor also. we will discuss the code also.

A preview image of Obstacle avoiding robot can be different from your own.

METHODOLOGY

In Obstacle avoiding robot, there is a sensor that is known as the ultrasonic sensor. which has the capability to measure the distance in front of the sensor. in the below paragraph we will know how does the sensor work. this obstacle-avoiding robot using Arduino Uno works as a distance measurer

An ultrasonic sensor has two parts one is a transmitter and another is the receiver that is known as a trigger and echoes. the trigger is the transmitter part and transmits the ultrasonic wave. Another part that is receiver an echo receive that transmitter ultrasonic waves transmitted from the trigger.

Now we calculate that in how much time the ultrasonic waves return back to the receiver and divide by 2 because the time travel is double

we calculate the distance by the time and speed formula

distance = time X speed

of the ultrasonic wave = 340 m/s

MODELING AND ANALYSIS

The ultrasonic sensor emits the short and high-frequency signal. These propagate in the air at the velocity of sound. If they hit any object, then they reflect an echo signal to the sensor. The ultrasonic sensor consists of a multivibrator, fixed to the base. The multivibrator is a combination of a resonator and a vibrator. The resonator which produces a 40 kHz sound wave and the detector detects a 40 kHz sound wave and sends an electrical signal back to the microcontroller.

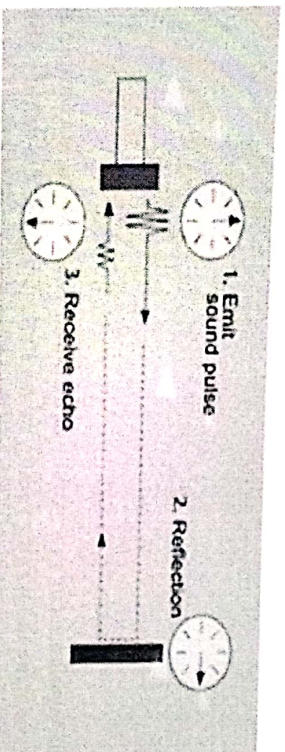
Ultrasonic Working Principle

Ultrasonic Working Principle

The ultrasonic sensor enables the robot to virtually see and recognize an object, avoid obstacles, measure distance. The operating range of the ultrasonic sensor is 10 cm to 30 cm.

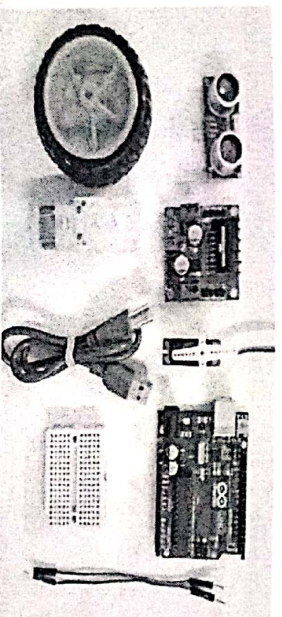
Operation of the ultrasonic sensor:

When an electrical pulse of high voltage is applied to the ultrasonic transducer it vibrates across a specific spectrum of frequencies and generates a burst of sound waves. Whenever any obstacle comes ahead of the ultrasonic sensor the sound waves will reflect in the form of echo and generates an electric pulse. It calculates the time taken between sending sound waves and receiving the echo. The echo patterns will be compared with the patterns of sound waves to determine the detected signal's condition.



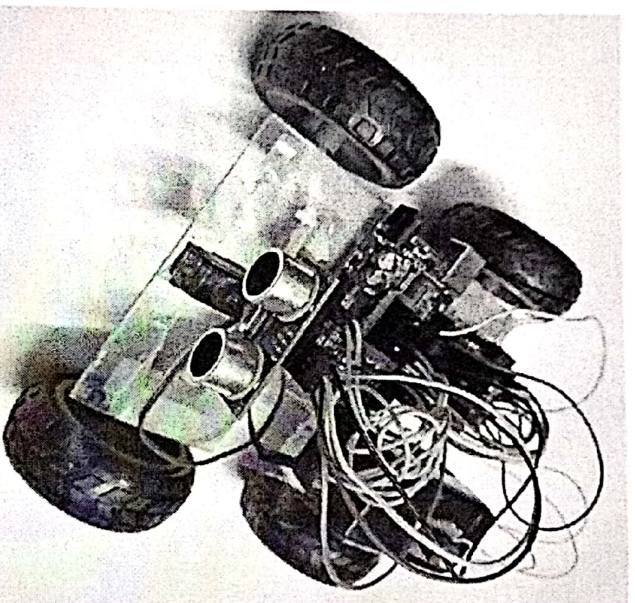
Required Components:-

- 1) Arduino Uno
- 2) Motor Driver Shield
- 3) Wheels (4x)
- 4) TT Gear Motor (4x)
- 5) Servo Motor
- 6) Ultrasonic Sensor
- 7) 18650 Li-on Battery (2x)
- 8) 18650 Battery Holder
- 9) Male and Female Jumper wire
- 10) Acrylic Sheet
- 11) DC Power Switch



RESULTS AND DISCUSSION

In the end the Code inserted in Arduino and successfully avoids the obstacle which are on the way .



The Obstacle Avoidance Car successfully detects and avoids obstacles. Simple algorithms used to steer and reducing the turning radius, successfully navigated the vehicle. In conclusion, the group successfully interfaced every component that was originally planned. Lessons learned from this project: Timer interrupt for IR pulse generation.

- Timer interrupt for IR pulse generation.
- Obstacle detection using IR transceiver.
- Servo mechanism using PWM.
- Steering system using Lego and Servo

CONCLUSION

The goal of our project is to create an autonomous robot which is intelligently detects the obstacle and navigate according to the actions we are set into it.

REFERENCES

- [1] Shen, S.B, Fang, Q.L. and Zong, P. (2009) Research of Internet of Things and related technology. Journal of Nanjing University of Posts and Telecommunications (Natural Science), 6, 1-11.
- [2] Wang, B.Y. (2009) Summary of IOT Technology Research. Journal of Electronic Measurement and

- [3] Lin, G. (2012) Research on Complex Event of Supply Chain Decision Support Based on Internet of Things.
- [4] Han, Y. and Chai, Y.T. (2011) The Architecture Reference of Flexible Supply Chain Simulation System. Journal of System Simulation, 6, 1270-1278.
- [5] J. Ziegler, M. Graube, L. Urbas, RFID as universal entry point to linked data clouds, in: Proc. IEEE International Conference on RFID technologies and Applications, 2012, pp. 281–286.
- [6] R. Want, An introduction to RFID technology, IEEE Pervasive Comput. 5 (2006) 25–33
- [7] M. Gireesh Kumar, K. Sripath Roy, Zigbee based indoor campus inventory tracking using RFID module, Int. J. Eng. Res. Appl. (IJERA) 4 (7(1)) (2014) 132, ISSN 2248-9622.

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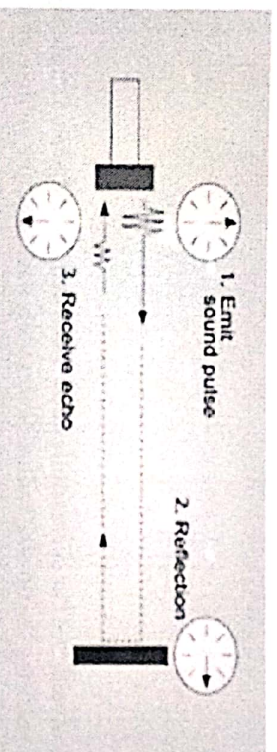
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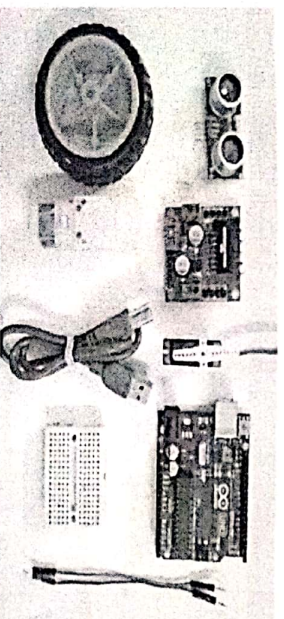
Operation of the ultrasonic sensor:

When an electrical pulse of high voltage is applied to the ultrasonic transducer it vibrates across a specific spectrum of frequencies and generates a burst of sound waves. Whenever any obstacle comes ahead of the ultrasonic sensor the sound waves will reflect in the form of echo and generates an electric pulse. It calculates the time taken between sending sound waves and receiving the echo. The echo patterns will be compared with the patterns of sound waves to determine the detected signal's condition.



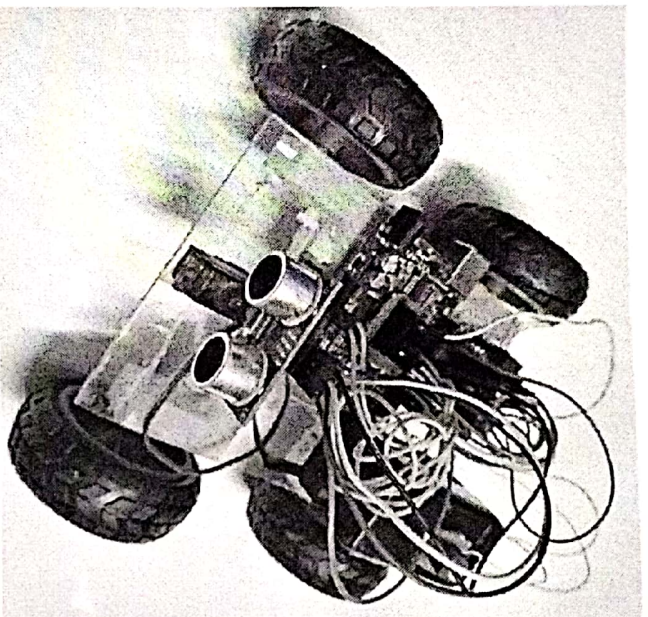
Required Components:-

- 1) Arduino Uno
- 2) Motor Driver Shield
- 3) Wheels (4x)
- 4) TT Gear Motor (4x)
- 5) Servo Motor
- 6) Ultrasonic Sensor
- 7) 18650 Li-ion Battery (2x)
- 8) 18650 Battery Holder
- 9) Male and Female Jumper wire
- 10) Acrylic Sheet
- 11) DC Power Switch



RESULTS AND DISCUSSION

In the end the Code inserted in Arduino and successfully avoids the obstacle which are on the way .



The Obstacle Avoidance Car successfully detects and avoids obstacles. Simple algorithms used to steer and reducing the turning radius, successfully navigated the vehicle. In conclusion, the group successfully interfaced every component that was originally planned. Lessons learned from this project: Timer interrupt for IR pulse generation.

- Timer interrupt for IR pulse generation.
- Obstacle detection using IR transceiver.
- Servo mechanism using PWM.
- Steering system using Lego and Servo

CONCLUSION

The goal of our project is to create an autonomous robot which is intelligently detects the obstacle and navigate according to the actions we are set into it.

REFERENCES

[1] Shen, S.B., Fang, Q.L. and Zong, P. (2009) Research of Internet of Things and related technology. Journal of Nanjing University of Posts and Telecommunications (Natural Science), 6, 1-11.

[2] Wang, B.Y. (2009) Summary of IOT Technology Research. Journal of Electronic Measurement and

www.irjmeets.com

Instrument, 12, 1-7.

- [3] Lin, G. (2012) Research on Complex Event of Supply Chain Decision Support Based on Internet of Things.
- [4] Han, Y. and Chai, Y.T. (2011) The Architecture Reference of Flexible Supply Chain Simulation System. Journal of System Simulation, 6, 1270-1278.
- [5] J. Ziegler, M. Graube, L. Urbas, RFID as universal entry point to linked data clouds, in: Proc. IEEE International Conference on RFID Technologies and Applications, 2012, pp. 281–286.
- [6] R. Want, An introduction to RFID technology, IEEE Pervasive Comput 5 (2006) 25–33
- [7] M. Gireesh Kumar, K. Sripath Roy, Zigbee based indoor campus inventory tracking using RFID module, Int. J. Eng. Res. Appl. (IJERA) 4 (7(1)) (2014) 132, ISSN 2248-9622.

THE WOMENS SAFETY APPLICATION USING ANDROID TECHNOLOGY

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Abstract: globally, mobile phones are used by growing number of peoples. As a result of the extensive use of smartphones by people, we developed an application to ensure women's safety. In spite of the fact that there are many applications related to women's safety, this application is unique. Users will find the application's interface to be friendly. This tool is accessible to everyone. There are a few modules in the application. Application was developed using Android application, Java language, and XML language.

Keywords: Android application, JAVA, XML

Introduction:

As the world has become increasingly globalized, women are primarily working women, bringing gender equality to the forefront. Once upon a time, housekeeping chores were only allowed to be done by women. Changing circumstances make it increasingly difficult for women to compete with men in all fields. The number of crimes is increasing day by day in our modern world. As a result of this application, users are protected from harm. A security program like this one provides protection for women. Female freedom is possible. Android/Java, XML (markup language that defines any data) are used to build applications.

We have a number of modules in our application. There is a user-friendly interface in the application. the consumer shops their records title and cell number. In this utility Emergency name module if the person is in any hazardous state of affairs then she can name the police directly. In the 2nd module legal guidelines for girls are defined. ladies must be conscious of this. From this factor of view, this module was once created. in the 1/3 module self-defence strategies are shown. person refers to this in everyday life. and do their security on their own.

Methodology:

• FRONTEND:

fronted of women's protection utility entails a number of sub-modules. The person will engage with this module. there are three sub-modules in an application. they are as follows:

- Emergency call: in this if the person is any risky situation/uncertain situation then without delay name the police.
- laws for women: These legal guidelines had been enacted for the upliftment of girls so that they stay an honourable and dignified life. Only when a female has equal occupational rights, instructional rights, decision-making rights, freedom, and the proper to pick what's right for herself, she is stated to be equal to that of men. Here some laws for female are described the girls need to watch out of that.
- self-defence techniques: in this, some self-defence strategies movies are there that the consumer watched and used in day to life.

• **BACKEND:**

- a) In the backend, the SQLite database is used to store the facts of consumer names and cell numbers.
- b) The consumer enters the title and the cellular variety and clicks on the keep button after this statistic is saved in the database.
- c) To view the user's facts, view on the view button.

Proposed System:

The proposed system is developed with the help of an Android application. there are module in an application. In the application whenever the user/woman is in a dangerous situation then can call the police directly. in the second module laws for women are defined. women should be aware of that. in the third module self-defense techniques are there. user refers to this in their day-to-day life to avoid incidence and to protect themselves.

Conclusion:

people use their smart-phone a lot. Women have equality to men. Women have the freedom to stay freely. The venture objectives to furnish protection to the ladies from the. Secure from rape and impenetrable their life. Live her to free. The utility is user-friendly. The utility is beneficial to the user

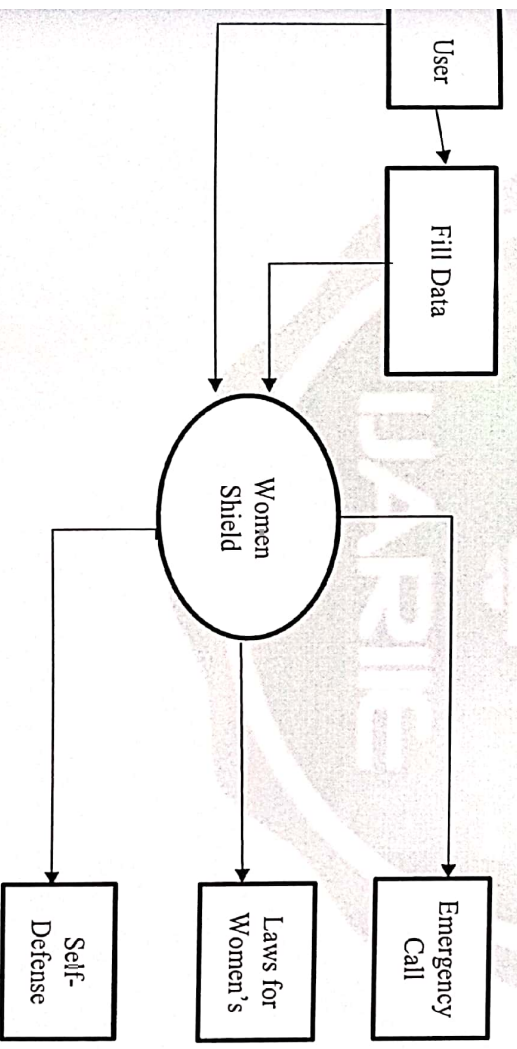
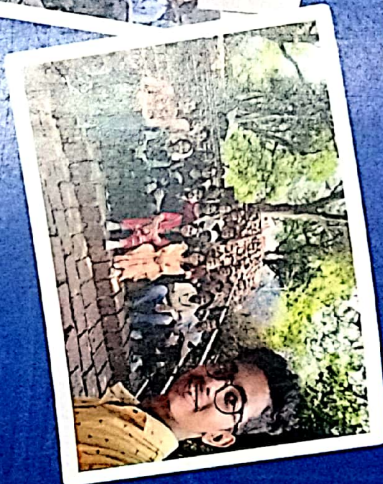
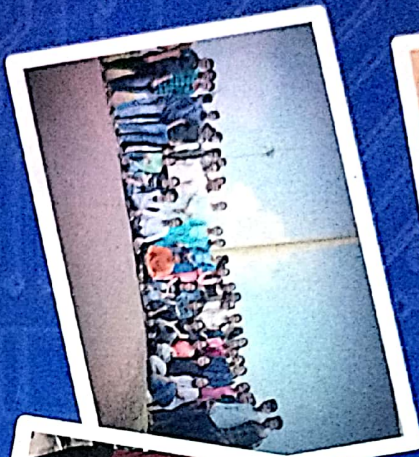


Fig. Women's Safety Application

References:

- [1] saranya, j.; selvakumar, j., [Implementation of children tracking system on android mobile terminals], [2013] IEEE International Conference on Communications and Signal Processing (ICCCSP), vol., no., pp.961, 965, 3-5 April 2013.
- [2] pasha s., kavana j., mangala g.k.r., nischitha n., surendra b.k., rakshitha m.s. [2016]. [BSecure for women: an android application], International Journal of Innovative Research in Computer and Communication Engineering, Vol. 4, No. 5, pp. 8073- 8080
- [3] saranya . n, karthik .k [2015], (Women safety application using android mobile), International Journal of Engineering Science and Computing, pp. 1317-1319
- [4] thota b, kumar u.k.p [2015] , sauver: [an android mobile for women safety], International Journal of Technology Enhancements and Emerging Engineering Research, Vol. 3, No. 05, pp. 122-126.
- [5] pawar v, wankhade n.r, nikam d, jadhav k, pathak n [2014], [SCIWARS android app for women safety], "International Journal of Engineering Research and Application", Vol. 4, No. 3 (Version 1), pp. 823- 826.
- [6] mandapati s, pamidi s, ambati s, [2015] [A mobile based women safety application (I safe apps)], IOSR Journal of Computer Engineering, Vol. 17, No. 1 (Version 1), pp. 29-34.



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