



**A PROJECT REPORT
ON**

People Counting System For Retail Industries

SUBMITTED TO THE

MAHARASHTRA STATE BOARD OF

TECHNICAL EDUCATION (MSBTE), MUMBAI

BY

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DEPARTMENT OF COMPUTER ENGINEERING

GURU GOBIND SINGH POLYTECHNIC

NASHIK – 422009



Academic Year 2021-22

GURU GOBIND SINGH FOUNDATION'S
GURU GOBIND SINGH POLYTECHNIC

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CERTIFICATE

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"People Counting System For Retail Industries"

As a part of syllabus of

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In the academic year 2019-20

GUIDED BY

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Vision And Mission

Guru Gobind Singh Foundation
GURU GOBIND SINGH POLYTECHNIC NASHIK
Program: Computer Engineering



Vision

Computer Engineering Program is striving for excellence in providing transformative Education and enhancing multidisciplinary skills for developing Intellectual, Innovative and Quality Technician, Engineer, Entrepreneur which will benefit the Society and the Industrial challenges.

Mission

1. To enhance the knowledge of Computer Engineering students through rigorous coursework and Technical skills, by understanding and providing the needs of Society and Industry.
2. To benchmark with the best standards of Quality Education in the field of Computer Engineering.
3. To enhance the commitment of Computer Engineering faculty, staff and Students by inculcating the spirit of inquisitiveness, teamwork, innovation and professionalism.
4. Establish a center of excellence to enhance Academia-Industry partnership work on collaborative projects and encourage Computer Engineering students to develop micro projects and patents.
5. To develop students by enhancing emerging technologies in the field of Computer Engineering and inculcating entrepreneurship quality in them.

PEO(s), PSO(s) And PO(s)

Guru Gobind Singh Foundation **GURU GOBIND SINGH POLYTECHNIC NASHIK** **Program: Computer Engineering**



Programme Educational Objectives (PEO)

- PEO 1. Provide socially responsible, environment friendly solutions to Computer engineering related broad-based problems adapting professional ethics.
- PEO 2. Adapt state-of-the-art Computer engineering broad-based technologies to work in multi-disciplinary work environments.
- PEO 3. Solve broad-based problems individually and as a team member communicating effectively in the world of work.

Program Specific Outcomes (PSO)

- PSO 1. **Computer Software and Hardware Usage:** Use state-of-the-art technologies for operation and application of computer software and hardware.
- PSO 2. **Computer Engineering Maintenance:** Maintain computer engineering related software and hardware systems.

Program Outcomes (PO)

- PO 1. **Basic knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the broad-based Computer engineering problem.
- PO 2. **Discipline knowledge:** Apply Computer engineering discipline - specific knowledge to solve core computer engineering related problems.
- PO 3. **Experiments and practice:** Plan to perform experiments and practices to use the results to solve broad-based Computer engineering problems.
- PO 4. **Engineering tools:** Apply relevant Computer technologies and tools with an understanding of the limitations.
- PO 5. **The engineer and society:** Assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to practice in field of Computer engineering.
- PO 6. **Environment and sustainability:** Apply Computer engineering solutions also for sustainable development practices in societal and environmental contexts and demonstrate the knowledge and need for sustainable development.
- PO 7. **Ethics:** Apply ethical principles for commitment to professional ethics, responsibilities and norms of the practice also in the field of Computer engineering.
- PO 8. **Individual and team work:** Function effectively as a leader and team member in diverse/ multidisciplinary teams.
- PO 9. **Communication:** Communicate effectively in oral and written form.
- PO 10. **Life-long learning:** Engage in independent and life-long learning activities in the context of technological changes in the Computer engineering field and allied industry.

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Program: Computer Engineering

COURSE OUTCOME CO (Scheme I)



First Semester

Sr. No	Course Code	Course Name	Course Outcome
1	22101	English	<ul style="list-style-type: none"> a. Formulate grammatically correct sentences. b. Summarise comprehension passages. c. Compose dialogues and paragraphs for different situations. d. Use relevant words as per context. e. Deliver prepared speeches to express ideas, thoughts and emotions.
2	22102	Basic Science (Physics and Chemistry)	<ul style="list-style-type: none"> a. Estimate errors in the measurement of physics quantities. b. Apply the principles of electricity and magnetism to solve engineering problems. c. Use the basic principles of heat and optics in related engineering applications. d. Apply catalysis process in industries. e. Use corrosion preventive measures in industries. f. Use relevant engineering materials in industry.
3	22103	Basic Mathematics	<ul style="list-style-type: none"> a. Apply concepts of algebra to solve engineering problems. b. Utilize basic trigonometric concepts to solve problems. c. Solve basic engineering problems under given conditions of straight lines. d. Solve problems based on regular closed figures and solids. e. Use basic concepts of statistics to solve engineering related problems.
4	22001	Fundamentals of ICT	<ul style="list-style-type: none"> a. Use computer system and its peripherals. b. Prepare business document using word processing tool. c. Interpret data and represent it graphically using spreadsheet. d. Prepare professional presentations. e. Use different types of web browsers.
5	22003	Engineering Graphics	<ul style="list-style-type: none"> a. Draw regular geometric figures. b. Use drawing codes, conventions and symbols as per IS-46 in engineering drawing. c. Draw the views of given object using principles of orthographic projection d. Draw isometric views of given component or from orthographic projections. e. Draw free hand sketches of given engineering elements. f. Use computer aided drafting approach to create engineering drawings.
6	22005	Workshop Practice	<ul style="list-style-type: none"> a. Use electrical tools, instruments, devices and equipment for basic level maintenance of computers and peripherals. b. Identify active and passive electronic components. c. Undertake basic level maintenance of a PC. d. Use different kinds of printers and scanners. e. Identify the layout of wired and wireless LAN environment.

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Second Semester

7	22215	Elements of electrical engineering	a. Use principles of magnetic circuits. b. Use single phase AC supply for electrical and electronics equipment. c. Use three phase AC supply for industrial equipment and machines. d. Connect transformers and DC motors for requirements. e. Use FHP motors for diversified applications. f. Use relevant protective devices for different requirement.
			a. Calculate equation of tangent, maxima, minima, radius of curvature by differentiation. b. Solve given problems of integration using suitable methods. c. Apply the concept of integration to find area and volume. d. Solve the different equation of first order and first degree using suitable methods. e. Apply concepts of numerical methods in computer programming languages.
8	22224	Applied Mathematics	a. Identify electronics components in electronic circuits. b. Use diodes in different applications. c. Interpret the working of junction transistor in the electronic circuits. d. interpret the working of unipolar devices in the electronic circuits. e. Use sensors and transducers.
9	22225	Basic Electronics	a. Develop flowchart and algorithm to solve problems logically. b. Write simple C programs using arithmetic expressions. c. Develop C programs using control structure. d. Develop C program using arrays and structures e. Develop functions in C programs for modular programming approach. f. Develop C programs using pointers.
10	22226	Programming in C	a. Communicate effectively by avoiding barriers in various formal and informal situations. b. Communicate skillfully using non-verbal methods of communication. c. Give presentations by using audio-visual aids. d. Write reports using correct guidelines. e. Compose e-mail and formal business letters.
11	22009	Business Communication using Computers	a. Identify different types of computer systems b. Troubleshoot common motherboard problems. c. Select processors required for relevant systems d. Partition/format hard drives. e. Troubleshoot peripherals and networks. f. Test power supplies.
12	22013	Computer peripherals and hardware maintenance	a. Use block level formatting tags to present content on web page. b. Use text level formatting tags to present content on web page. c. Apply hyper linking on web page. d. Organize the content using table and frames. e. Apply presentation schemes on content using CSS. f. Publish websites on Internet or Intranet.
13	22014	Web Page Designing with HTML	

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Third Semester			
14	22316	Object Oriented Programming using C++	<ul style="list-style-type: none"> a. Develop C++ programs to solve problems using Procedure Oriented Approach. b. Develop C++ programs using classes and objects. c. Implement inheritance in C++ program d. Use Polymorphism in C++ program e. Develop C++ programs to perform file operations.
15	22317	Data Structure Using C	<ul style="list-style-type: none"> a. Perform Basic Operations on array b. Apply different searching and sorting techniques c. Implement Basic operations on stack and queue using array representation d. Implement basic operations on Linked list e. Implement program to create and traverse tree to solve problem
16	22318	Computer Graphics	<ul style="list-style-type: none"> a. Manipulate visual and geometric information of images. b. Implement standard algorithms to draw various graphics objects using C program. c. Develop programs for 2-D and 3-D transformations. d. Use projections to visualize objects on view plane. e. Implement various clipping algorithms. f. Develop programs to create curves using algorithms.
17	22319	Database Management System	<ul style="list-style-type: none"> a. Design normalized database on given data. b. Create and manage database using SQL command. c. Write PL/SQL code for given database. d. Apply triggers on database also create procedure and function according to condition. e. Apply security and confidentiality on given database
18	22320	Digital Techniques	<ul style="list-style-type: none"> a. Use number system and codes for interpreting working of digital system. b. Use boolean expression to realize logic circuits. c. Build simple combinational logic circuits. d. Build simple sequential logic circuits. e. Test data converters and PLDs in digital electronic system
Fourth Semester			
19	22412	Java Programming	<ul style="list-style-type: none"> a. Develop programs using Object Oriented methodology in Java. b. Apply concept of inheritance for code reusability. c. Develop programs using multithreading. d. Implement Exception Handling. e. Develop programs using graphics and applet f. Develop programs for handling I/O and file streams.
20	22413	Software Engineering	<ul style="list-style-type: none"> a. Select suitable Software Process model for software development. b. Prepare software requirement specification. c. Use Software modeling to create data designs. d. Estimate size and cost of software product. e. Apply project management and quality assurance principles in software development.
21	22414	Data Communication and Computer Network	<ul style="list-style-type: none"> a. Analyse the functioning of data communication and computer network. b. Select relevant transmission media and switching techniques as per need. c. Analyse the transmission errors with respect to IEEE standards. d. Configure various networking devices e. Configure different TCP/IP services
22	22415	Microprocessors	<ul style="list-style-type: none"> a. Analyze the functional block of 8086 microprocessor b. Write assembly language program for given problem. c. Use instructions for different addressing modes. d. Develop an assembly language program using assembler. e. Develop assembly language programs using procedure, macros, modular programming approach.
23	22034	GUI Application Development using VB.Net	<ul style="list-style-type: none"> a. Use Visual Studio IDE to design application. b. Develop GUI Application using Form Controls and its events. c. Apply Object Oriented concepts in GUI Application. d. Use Data access controls to store data in Database and retrieve it. e. Use data Binding in GUI Application.

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Fifth Semester

24	22447	Environmental Studies	<ul style="list-style-type: none"> a. Develop Public awareness about environment. b. Select alternative energy resources for Engineering Practice. c. Conserve Ecosystem and Biodiversity. d. Apply techniques to reduce Environmental Pollution. e. Manage social issues and Environmental This is as lifelong learning.
25	22516	Operating system	<ul style="list-style-type: none"> a. Install Operating System and configure it. b. Use Operating system tools to perform various functions. c. Execute process commands for performing process management operations d. Apply scheduling algorithms to calculate turnaround time and average waiting time e. Calculate efficiency of different memory management techniques. f. Apply file management techniques.
26	22517	Advanced Java Programming	<ul style="list-style-type: none"> a. Develop programs using GUI Framework(AWT and Swing) b. Handle events of AWT and Swings components. c. Develop programs to handle events in Java Programming. d. Develop Java programs using networking concepts. e. Develop programs using database. f. Develop programs using Servlets.
27	22518	Software Testing	<ul style="list-style-type: none"> a. Apply various software testing methods. b. Prepare test cases for different types and levels of testing. c. Prepare test plan for an application d. Identify bugs to create defect report of given application. e. Test software for performance measures using automated testing tools
28	22520	Advance Computer Network	<ul style="list-style-type: none"> a. Implement Network layer protocols. b. Configure IPv6 network. c. Choose routing protocol in given network situation. d. Implement different Transport layer protocols. e. Configure various Application layer protocols
29	22050	Capstone Project-Planning	<ul style="list-style-type: none"> a. Write the problem/task specification in existing systems related to occupation. b. Select collect and use required information/knowledge to solve the problem/ complete the task. c. Logically choose relevant possible solutions. d. Consider the ethical issues related to the project. e. Assess the impact of the project on society. f. Prepare 'project proposals' with action plan and time duration scientifically before beginning of project. g. Communicate effectively and confidently as a member and leader of team.
30	22049	Industrial Training	<ul style="list-style-type: none"> a. Communicate effectively the work carried out b. Prepared and present the report of work carried out c. Exercise time management and safety in work environment d. Working in a team e. Demonstrate various quality assurance f. Exhibit the work carried out.

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Sixth Semester			
31	22509	Management	<ul style="list-style-type: none"> a. Use basic management principles to execute daily activities b. Use principles of planning and organising for accomplishment of tasks c. Use principles of directing and controlling for implementing the plans d. Apply principles of safety management in all activities e. Understand various provisions of industrial acts.
32	22616	Programming with Python	<ul style="list-style-type: none"> a. Display message on screen using Python script on IDE b. Develop python program to demonstrate use of Operations c. Perform operations on data structures in Python d. Develop functions for given problem e. Design classes for given problem f. Handle exceptions.
33	22617	Mobile Application Development	<ul style="list-style-type: none"> a. Interpret features of Android operating system b. Configure Android environment and development tools c. Develop rich user interfaces by using layouts and controls d. Use user interface components for android application development e. Create Android application using database f. Publish Android application
34	22618	Emerging trends in Computer and Information Technology	<ul style="list-style-type: none"> a. Describe Artificial Intelligence, Machine learning and deep learning b. Interpret IoT concepts c. Compare Models of Digital Forensic Investigation. d. Describe Evidence Handling procedures e. Describe Ethical hacking process f. Detect Network, Operating System and applications vulnerabilities
35	22619	Web based Application development with PHP	<ul style="list-style-type: none"> a. Develop program using control statement b. Perform operations based on array and graphics c. Develop programs by applying various object oriented concepts d. Use form controls with validation to collect user's input e. Perform database operations in PHP
36	22060	Capstone Project-Execution and Report Writing	<ul style="list-style-type: none"> a. Implement the planned activity individually and/or as team b. Select, collect and use required information/knowledge to solve the identified problem. c. Take appropriate decisions based on collected and analysed information. d. Ensure quality in product e. Incorporate energy and environment conservation principles f. Consider the ethical issues related to the project(if there are any) g. Assess the impact of the project on society(if there is any) h. Communicate effectively and confidently as a member and leader of team

SPONSORSHIP LETTER



Date: 21/09/2021

To,
Head of Department
Computer Department
GGSP, Nashik

Subject: Letter of sponsorship for academic project

This is to certify that the below mentioned students are working with us on the project "*People Count System for Retail Industry*". We would like to offer them a platform to nurture their skills & work on the project.

By becoming a part of this sponsorship program, following students abide to work on the mentioned technologies to execute their project with the help of technical experts. Institute's assent for allowing them to work with us is appreciated.

1. **Ms. Samruddhi Kale**
2. **Ms. Sejal Sonje**
3. **Ms. Hemangi Jadhav**

Authorized by

A handwritten signature in black ink that reads "Gauresh Suryawanshi".



Mr. Gauresh Suryawanshi
Chief Executive Officer
R3 Systems India PVT LTD

ACKNOWLEDGEMENT

It is our privilege to declare the completion of our project "**People Counting System For Retail Industries**" under the valuable guidance of our **Guide Mrs. D. R. Thakare**, whose constant support and motivation has encouraged us to come up with this successful project. We also extend our sincere gratitude towards ourrespected **HOD Mrs. G. R. Jagtap** who also played a key role in successful completion of this project.

Also, our sincere thanks to the whole staff of the Computer Department without whose help, it would have been difficult for us to complete this project. This work is virtually the result of inspiration showered by them.

Sincere thanks to our respected **Principal Prof. S. R. Upasani** sir and **CEO Dr.Permindur Singh** sir, for providing us with all the required facilities and essentials.

We would also like to thank all the library and non-teaching staff for their help. Last but not the least, congratulations to our team members for successful completion of this project and for keeping the momentum going with enthusiasm.

Yours sincerely,

Ms.Samruddhi S. Kale
Ms. Hemangi P. Jadhav
Ms.Sejal C. Sonje

Final year diploma
Department of Computer Engineering

Abstract

Internet of Things is the fastest growing technology. Like Information Technology revolutionized every field in the early years of twenty first century, the internet of things is about to forward the same legacy. IoT is about to find application everywhere and in everything. The concept of IoT is so scalable, versatile and ubiquitous. Internet of Things (IoT) is a rapidly expanding technology area that is shaping up to bring the next revolution in information systems and computing technologies with intelligence to communicate between devices without the human intervention. Implement IoT to count the people in the Mall using Ultrasonic sensors with Arduino Uno. With the proliferation of IoT Devices such as smart phones, sensors, actuators, cameras, and RFID etc. It is possible to collect massive amount of data for localization and counting of people within Retail Industries. Build a System People Counter system using IOT for the Production and Manufacturing Industries to reduce the loss over shortage of Instruments or Components and increase in accuracy of counting the instruments or components. This methodology can be implemented in any Industry which uses Scale Counting method. Ultrasonic sensors are used for the detection of existence of the persons and it will count the people in the Mall entering. When Ultrasonic sensors detects an object, it actuates the Servomotor connected with Ultrasonic Sensor. The Servomotor will start to record and store the video in secureserver for effective analysis. In this project, Internet of Things has been used to built a visitor counter which can be monitored online. This paper gives brief description about an assistive system designed for Industries in order to help them bring more accuracy over counting system before packaging and reduce the huge loss and saves money. This method is cost efficient and can be easily implemented. The IoT project developed here is built on Arduino UNO. The Arduino is one of the earliest and most popular prototyping boards. So It is assumed that the reader has gone through the project how to get started with the arduino and done all the things discussed in it. The Arduino is interfaced with ESP8266 Wi-Fi modem to connect with an internet router and access the cloud server. The visitor counter circuit is designed using IR sensors. The Arduino based IoT devices simply passes the count of the visitors to the cloud. As the data is updated on the cloud, it can be accessed online using any smart phone or computer. also the system will check the number of person in a mall if the number of person are more than the system will display a message reached maximum person limit, Please wait. We will be using the Ultrasonic sensor for counting the people entering in the mall. LCD For displaying the messages, and Servo motor for opening and closing door.

Keywords: Arduino Uno, Count, Servo motor, Ultrasonic Sensor, IOT.

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CHAPTER-1

INTRODUCTION

CHAPTER 1

INTRODUCTION

1. Introduction

The owner's knowledge of how many and when people are inside the building, company or shopping mall, help him to optimize the scheduling of labor and monitor the promotional events effectiveness. Security measure can benefit from people counting; this help to determine the number of guards can be assigned. Large buildings, typically office blocks, can contain thousands of people; for example the soon to be completed 'Apple Campus 2' will house 13,000 staff (Apple Campus). In the event of an evacuation, emergency responders are faced with determining how many people are remaining inside the building and where they are. Currently the fire department depend on site managers and documented building plans to direct them to the fire, however if these are not available, then the fire service start a methodical search of the building. For buildings of the size in question, this problem is made much more difficult purely because of the number of people present. In 2015/16 firefighters in England responded to 15,984 fires in non-residential buildings, in which 1,110 people were injured or died. This number can be reduced if emergency responders can be provided with live, accurate readouts of the people count of each room. This project sets out to solve this problem. Current people counting devices, although easy to use and accurate, are not designed with this usage case in mind and as such output data in a way that it not suitable for rescue teams, and hence is not used in this way at the moment. Recent advances in data gathering and analysis are opening up new possibilities for Retail Industries. Retail Industries development focuses on defining and incorporating intelligent information infrastructure into the building architecture and power management for network systems. Also developing simple, flexible, and scalable network systems for buildings. The rate of increase in resource consumption needs to improving and rolling out digital infrastructure and digital services. Retail Industries will be crucial to maintaining quality of life as urban populations rise and natural resources scarcity. People counting is one of the key components in Retail Industries applications for accurately counting traffic that enters to the building or facility empowers organizations to make smarter business decisions. People counting system creates the basis for a range of high-tech solutions, including retail analytics, queue management and security applications. The systems provide actionable information that help organizations to increase profitability and improve operational efficiency. Managers have been looking more data to draw conclusions about their customers. There are a lot of factors that have to come together for a visitor to become a customer. In addition to this even more has to be known to maintain customers loyal. One of the most important data a store manager can look at is the traffic rate. Because traffic is the real potential of a store. People who come into your shops are close to buying something as they ever can. In order to understand and analyze their potential, retailers and shopping malls started with manual counters and tried different technologies like beam sensors, thermal cameras and many more that came afterwards. The reasons to implement people counters in Retail Industries are Measuring traffic trends, determine conversion ratio, evaluate effectiveness, optimize staff labor, and people counting leasing. It is possible to collect massive

amount of data for localization and tracking of people within commercial buildings. Ultrasonic sensors are used for the detection of existence of the persons and it will count the people in the mall entering. People counting is the use of an electronic device (traditionally called a people counter or footfall counter) to measure the number of people that pass through a certain passage or entrance. People counting solution will help you detect visiting trends, count people per mall zones and floors, identify in real-time how many visitors are in particular areas of the building. It can track occupation history in 5 minute time spans or per second if raw data export is used. Count People is an important practice for understanding the number of consumers coming into your shop as well as the areas they visit most. Traffic visits the shop through various marketing activity and motives, tracking them and evaluating conversions have become the most important metric in 21st century brick-and-mortar retail management tasks. People observation and counting is of great interests in many commercial scenarios. The number of people entering and leaving shops provide useful information to shop merchants and marketers. Since retailers spending time and money on marketing and advertising, they really need metrics to help understand the return on investment as the people counting data can be used as a KPI. For non-commercial scenarios, people counting techniques are also useful in terms of security, event management and smart cities applications. Imagine you manage a large mall, these counting results would help you know how many people enter your mall, which paths they take, where they stop, and foremost, when does it all happen. The ultrasonic sensor will check how much person inside a mall if limit exceeds the system will show message “max person limit reached”. If max limit not crossed open the door using servo motor.

CHAPTER-2

LITERATURE REVIEW

CHAPTER 2

LITERATURE REVIEW

There is more than one method to count the visitors. It ultimately depends on the intensity of people. The following papers were studied and analyzed to understand the current scope of people count :

- 1) Bruno F. Carvalho and others have suggested a method that utilizes sensors for detecting people. The ultrasonic sensor plays a dominant role in identifying objects and accurately calculates the distance between the sensor and the objects. of visitors entering the premises. They have also implemented motion of an object or a person and compared the two methods. Both the methods are successfully tested in an environment. But this method cannot detect more than one person at a time. If two persons pass through the system side by side, the system will detect only one person. [1]
- 2) Jeong Woo Choi and others have proposed a method that uses IR-UWB radar sensors for counting people. “IR-UWB radar uses an impulse signal that occupies wide bandwidth. It is a technology that transmits an impulse signal and recognizes various situations by processing multiple signals that are received after being reflected from multiple implemented using ARM Cortex-M4 and Raspberry Pi 2 modules. Two IR-UWB sensors with antennas are fixed to count the number of people. Though the system can detect multiple people at a time, it is not cost efficient. The sensors are high expensive in the market. [2]
- 3) Another approach using IR sensors was proposed by Jothibasu M, Aakash B and others .IR sensors play a vital role in identifying objects. In this method, two IR sensors are placed adjacent to each other which detect the visitors. “The logic behind the working of the counting process is simple, when the person crosses the sensor near the door and then to the sensor away, it recognizes as an increment in count”. Apart from being a bi-directional counter, this method can be used to control home appliances and helps in consuming less electricity. This method cannot detect more than one person at a time. If two persons pass through the system side by side, the system will detect only one person. [3]
- 4) Kartik Madhira and Aditya Shukla have proposed a method that uses image processing techniques to count human people counter solution was made using computer vision library OpenCV for Python computer language”. The method achieved around 80-93% accuracy. The cameras were positioned in many angles to test the accuracy of the method The system requires real time monitoring of the persons via . camera modules which are very expensive. [5]

- 5) Shubham Mathur and others have come up with a method that uses image processing with sensor feedback for counting people entering or leaving a lab. Histogram of oriented gradients(HOG) technique was used for this method. The images are captured using Raspberry Pi fitted with a RaspiCam. A pair of PIR sensors is installed to instruct the system to capture the images. The data can be sent via Bluetooth to local servers for security purposes. An efficiency of 83% is achieved using this method. The equipment used in this system is very expensive. The sensors add extra cost to the system apart from camera module and Raspberry Pi. [6]
- 6) Another method proposed by Dr.P.Satyanarayana and others involves the use of OPEN CV3 using python 3.5.2. subtraction on the incoming frames followed by the blob analysis using which the person can be detected and by using virtual lines, the count of the people entering and leaving a particular area can be evaluated”. The system requires real time monitoring of the persons via camera modules which are very expensive. [7]
- 7) “The implementation goes on like the process of background
- 8) David Beymer proposed a method that involves 3D reconstruction by employing table lookup to map from image coordinates and disparities to 3D. Based on the 3D coordinates, the scene is (1) segmented by filtering out pixels outside the volume of interest, and (2) reprojected to a top-down, orthographic view. Finally, people are detected and tracked in the orthographic reprojection using a Gaussian real time monitoring of the persons via camera modules which are very expensive[8]

CHAPTER-3

SCOPE OF THE PROJECT

CHAPTER 3

SCOPE OF THE PROJECT

Requirement Specifications

3.1 Features of Project

- login
- Add Branch
- View Branch
- Delete Branch
- Branch login

3.2 Product Function

- This app can perform various functions like Owner like
- They can add branch with kit id, branch name, branch location and email, password.
- They can view branch details such as all details, current count, day count, average count etc.
- This makes owner work easier and faster. This is very time-efficient work.

The integration of internet of things (IoT) and cloud services for fortifying the security of mall is likely to augment the demand for people counting systems. People counting systems are devices that are used to count the number of people traversing a certain entrance or passage. The people counting system market can expand at a CAGR close to 14% owing to their application in retail and transportation sectors. Shopping malls are hubs of community activity. Customers are drawn inside by opportunities to take part in shopping, food, entertainment and special events. Though you likely have a general idea of your mall's traffic, understanding how customers actually use the facility can be more difficult. In order to make wise business decisions that help your mall thrive, you need data about your customers and their experience at your location. A foot traffic counter from People Counter System can help you improve your mall's customer experience and raise revenue. Comparing your footfall figures before, during and after marketing campaigns means you can calculate your return on investment and plan your future marketing activities more effectively. You can also measure and predict the impact of seasonal changes and the draw through rate of the anchor stores within the mall. Shopping malls are destinations, therefore they need to be a place that is enjoyable for visitors to be in. A people counting system helps management to understand visitor behaviour and can identify areas of congestion enabling you to take steps to remedy. They can also spot areas that are under-used, allowing opportunities for improvement.

CHAPTER-4

PERFORMANCE REQUIREMENT

CHAPTER 4

PERFORMANCE REQUIREMENT

Technical Specification

4.1 Hardware Requirement

For development:

- Arduino Uno
- Servo Motor
- 8GB SD card
- LCD
- Servo motor
- Ultra sonic sensor(2)

4.2 Software Requirement

For development:

- Operating System:Windows XP and later versions
- Front End:HTML,CSS .
- Programming Language: Java.
- Database:MySql.
- Domain:IOT

CHAPTER-5 **FEASIBILITY STUDY**

CHAPTER 5

FEASIBILITY STUDY

5.1 Feasibility study

A feasibility study is an analysis that takes all of a project's relevant factors into account—including economic, technical, legal, and scheduling considerations—to ascertain the likelihood of completing the project successfully. Project managers use feasibility studies to discern the pros and cons of undertaking a project before they invest a lot of time and money into it.

A well-designed study should offer a historical background of the business or project, such as a description of the product or service, accounting statements, details of operations and management, marketing research and policies, financial data, legal requirements, and tax obligations. Generally, such studies precede technical development and project implementation.

The importance of a feasibility study is based on organizational desire to “get it right” before committing resources, time, or budget. A feasibility study might uncover new ideas that could completely change a project’s scope. It’s best to make these determinations in advance, rather than to jump in and to learn that the project won’t work. Conducting a feasibility study is always beneficial to the project as it gives you and other stakeholders a clear picture of the proposed project.

A feasibility study is part of the initial design stage of any project/plan. It is conducted in order to objectively uncover the strengths and weaknesses of a proposed project or an existing business. It can help to identify and assess the opportunities and threats present in the natural environment, the resources required for the project, and the prospects for success.

- A feasibility study assesses the practicality of a proposed plan or project.
- A company may conduct a feasibility study if it's considering launching a new business or adopting a new product line.
- It's a good idea to have a contingency plan in case of unforeseeable circumstances, or if the original project is not feasible.

Feasibility Study

A key part of the preliminary investigation that reviews anticipated costs and benefits and recommends a course of action based on operational, technical, economic, and time factors. The purpose of the study is to determine if the systems request should proceed further.

- **Technical Feasibility:** The system being developed is economic. It is cost effective in the sense that it has eliminated the registered work completely. The system is also time effective because the calculations are automated which are made at the end of the paper or as per the student requirement. The result obtained contains fewer errors and are highly accurate as the data is required.
- **Economic feasibility:** The technical requirement for the system is economic and it does not use any other additional Hardware and software.
- **Behavioural Feasibility:** The system working is quite easy to use and learn due to its simple but attractive interface. User requires no special training for operating the system.

Analysis

Technical Analysis The performance of the system can be increased if the technical analysis is done well. The systems hardware requirements must be taken into consideration. The software must go hand in hand with the hard ware else the efficiency of the system deteriorates

- I. Changes to bring in the system: All changes should be in positive direction, there will be increased level of efficiency and better customerservice.
- II. Required skills: Platforms tools used this project are widely used.
- III. Acceptability: The structure of the system is kept feasible enough so that there should not be any problem from the users point of view

CHAPTER-6

SYSTEM DESIGN

6.1 UML Diagrams

6.1.1 Data Flow Diagrams [DFD]

DFD LEVEL 0

Data objects represented by labeled arrows and transformation are represented by circles also called as bubbles. DFD is presented in a hierarchical fashion i.e. the first data flow model represents the system as a whole. Subsequent DFD refine the context diagram (level 0 DFD), providing increasing details with each subsequent level. The DFD enables the software engineer to develop models of the information domain & functional domain at the same time. As the DFD is refined into greater levels of details, the analyst perform an implicit functional decomposition of the system. At the same time, the DFD refinement results in a corresponding refinement of the data as it moves through the process that embody the applications. A context-level DFD for the system the primary external entities produce information for use by the system and consume information generated by the system. The labeled arrow represents data objects or object hierarchy

The context diagram is the most abstract data flow representation of a system. It represents the entire system as a single bubble and. The various external entities with which the system interacts and the data flows occurring between the system and the external entities are also represented. The name context diagram is well justified because it represents the context in which the system is to exist i.e. the external entities (users) that would interact with the system and specific data items they would be receiving from the system

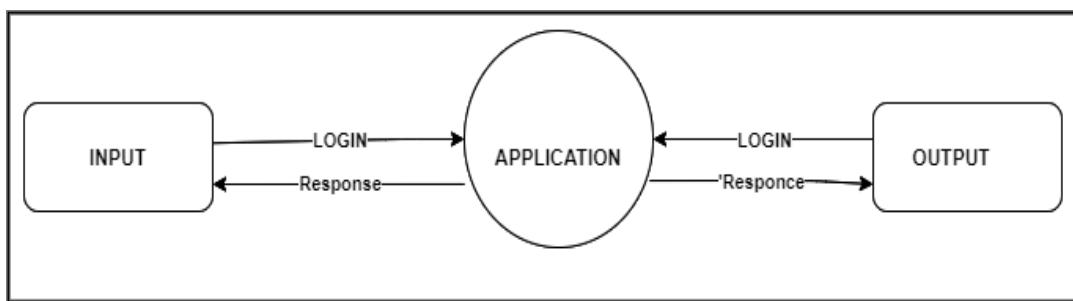


Fig:DFD LEVEL 0

DFD LEVEL 1

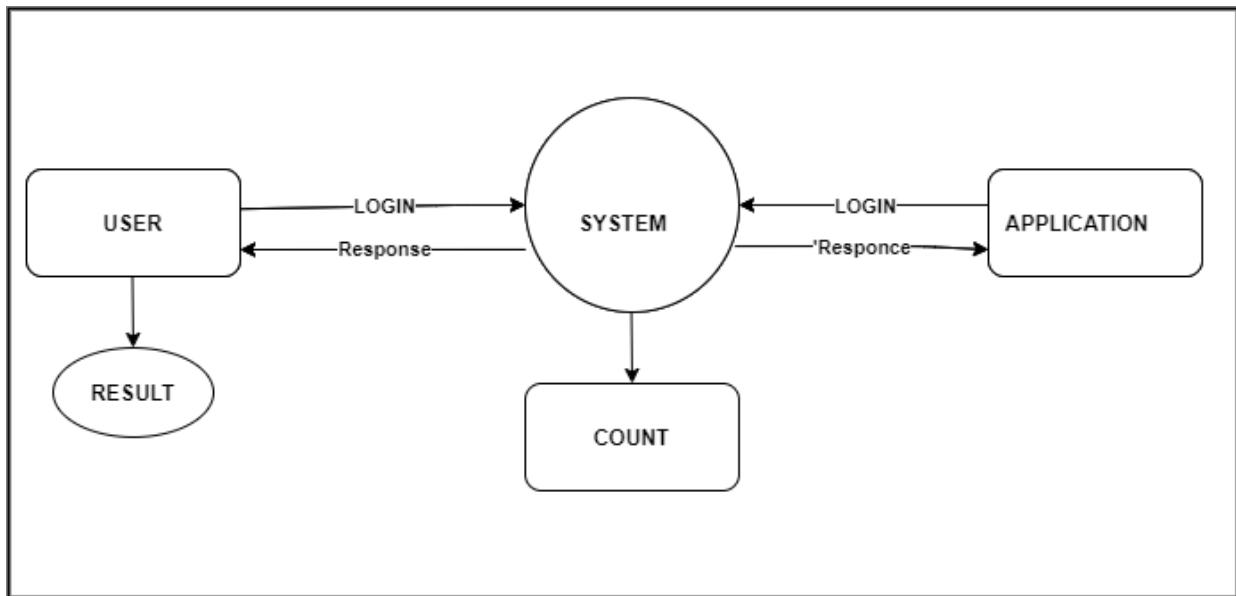


Fig. DFD LEVEL 1

DFD LEVEL 2

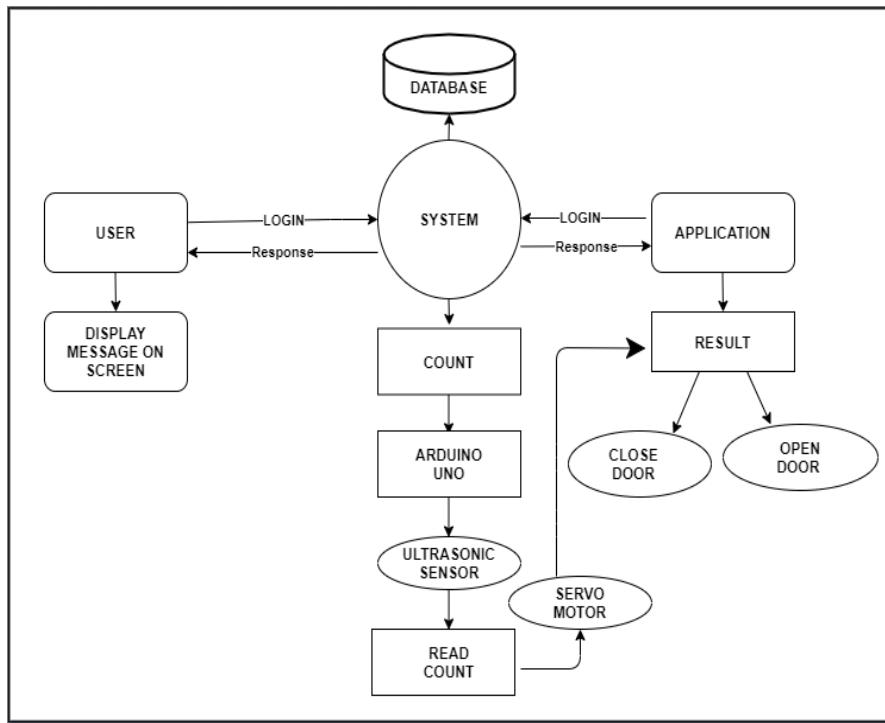


Fig. DFD Level 2

6.1.2 Sequence Diagram

A Sequence Diagram is an interaction diagram that emphasizes the time ordering of messages; a collaboration diagram is an interaction diagram that emphasizes the structural organization of the objects that send and receive messages. Sequence diagrams and collaboration diagrams are isomorphic, meaning that you can take one and transform it into the other. Sequence diagram and collaboration diagram are called INTERACTION DIAGRAMS. An interaction diagram shows an interaction, consisting of set of objects and their relationship including the messages that may be dispatched among them. A sequence diagram is an introduction that emphasizes the time ordering of messages. Graphically a sequence diagram is a table that shows objects arranged along the X-axis and messages ordered in increasing time along the Y-axis

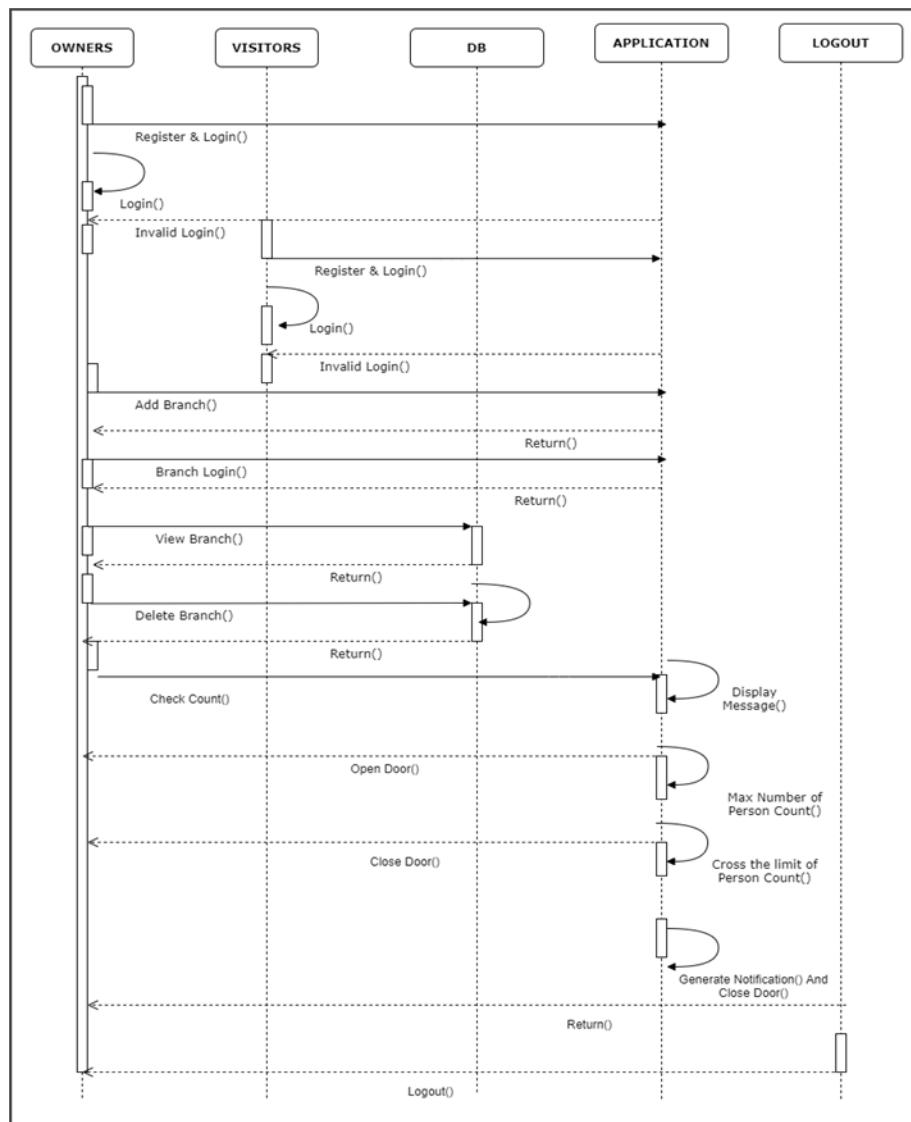


Fig.Sequence Diagram

6.1.3 Class diagram

A Class is a category or group of things that has similar attributes and common behavior. A Rectangle is the icon that represents the class it is divided into three areas. The upper most area contains the name, the middle; area contains the attributes and the lowest areas show the operations. Class diagrams provides the representation that developers work from. Class diagrams help on the analysis side, tooClass is nothing but a structure that contains both variables and methods. The Class Diagram shows a set of classes, interfaces, and collaborations and their relating ships. There is most common diagram in modeling the object oriented systems and are used to give the static view of a system. It shows the dependency between the classes that can be used in our system. The interactions between the modules or classes of our projects are shown below. Each block contains Class Name, Variables and Methods.

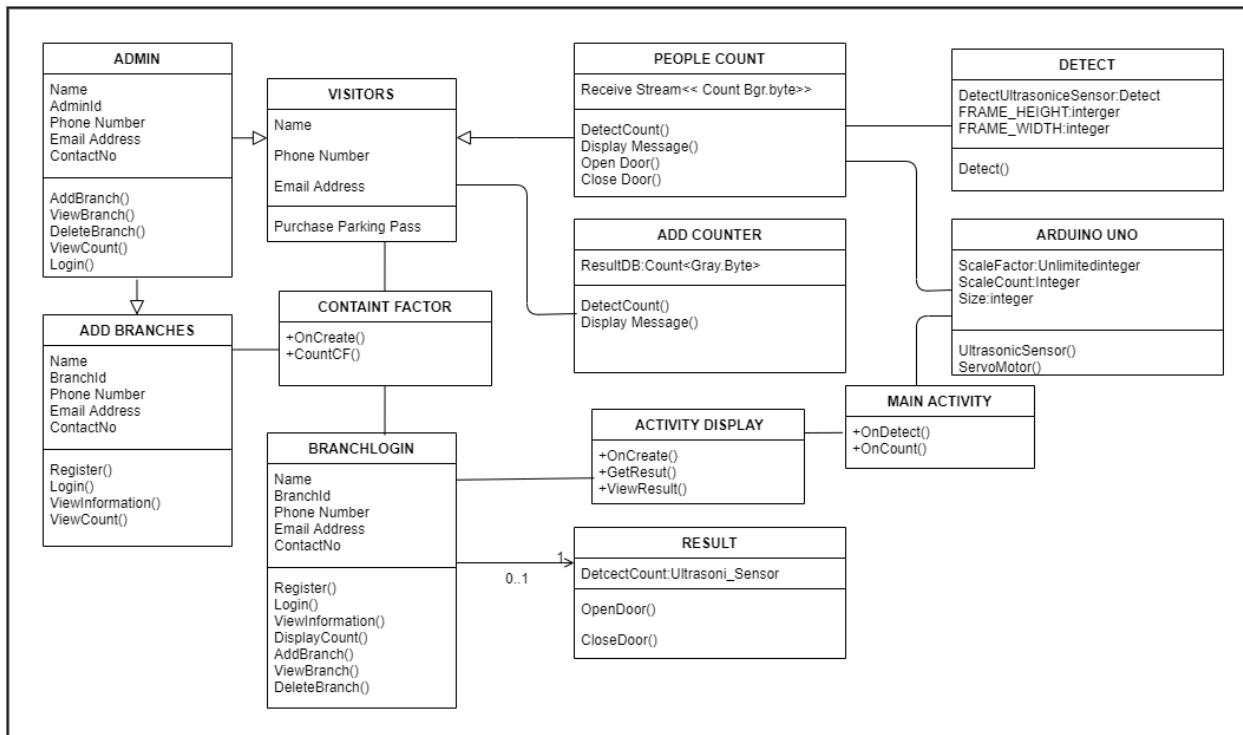
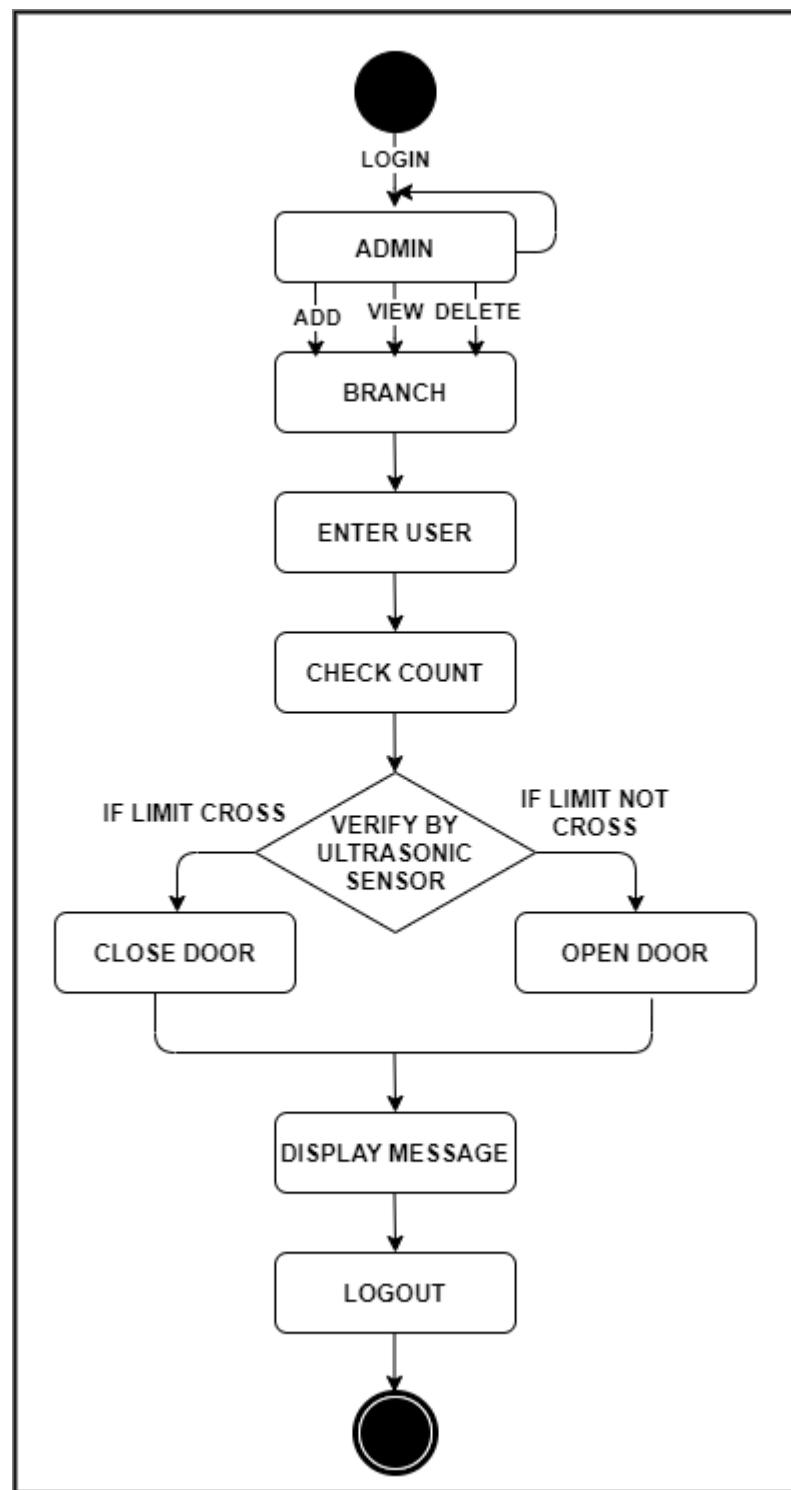


Fig. Class Diagram

6.1.4 Activity Diagram



6.1.5 Use Case Diagram

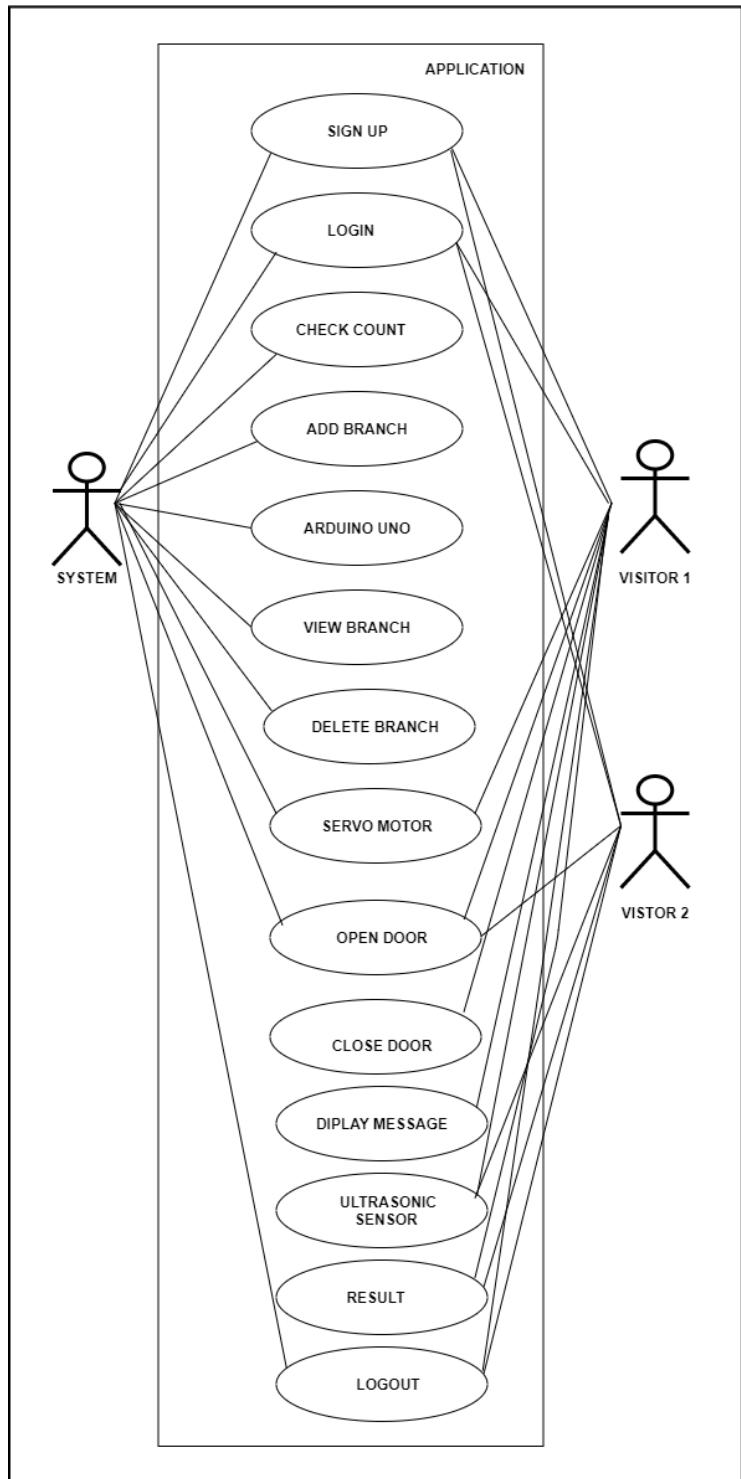


Fig. Use case Diagram

6.1.6 Component Diagram

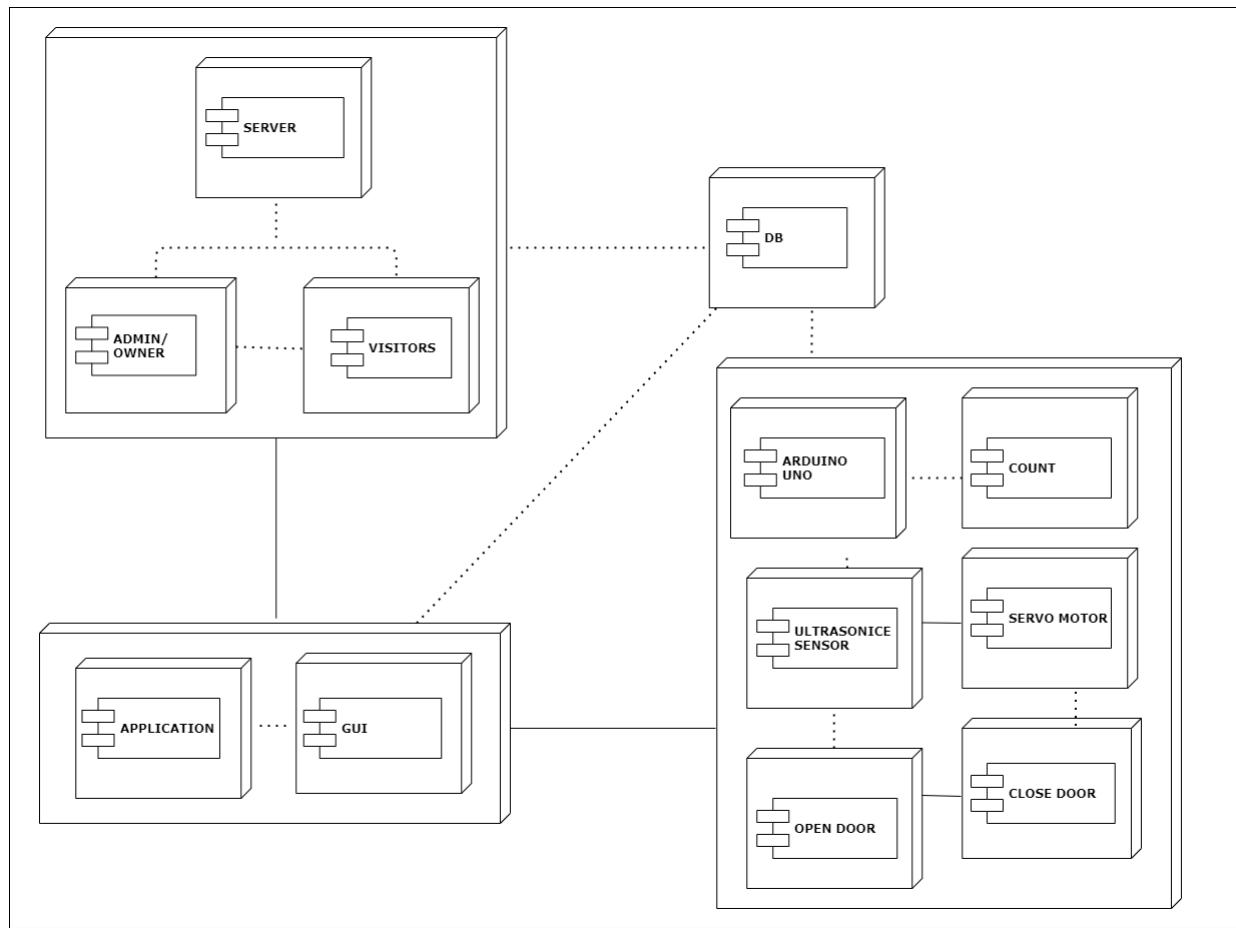


Fig. Component Diagram

6.1.7 E-R Daigram

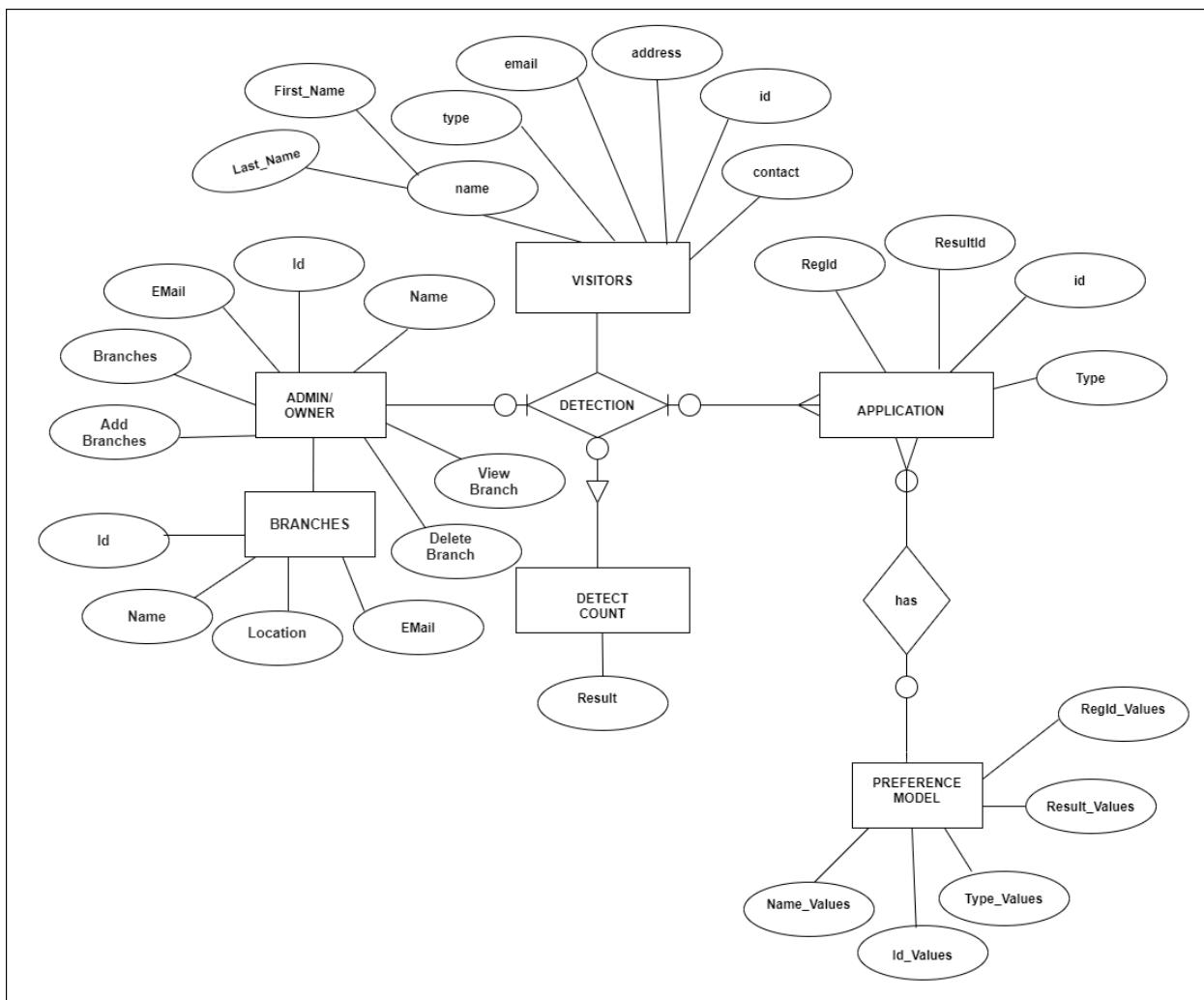


Fig. E-R Daigram

CHAPTER-7

PLATFORM DATABASE DESCRIPTION

CHAPTER 7

PLATFORM DATABASE DESCRIPTION

7.1. MySOL:

MySQL is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language. A relational database organizes data into one or more datatables in which data types may be related to each other; these relations help structure the data. SQL is a language programmer use to create, modify and extract data from the relational database, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an operating system to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups. MySQL is free and open-source software under the terms of the GNU General Public License, and isalso available under a variety of proprietary licenses. MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation). In 2010, when Oracle acquired Sun, Widenius forked the open-source MySQL project to create MariaDB.

MySQL has stand-alone clients that allow users to interact directly with a MySQL database using SQL, but more often MySQL is used with other programs to implement applications that need relation database capability. MySQL is a component of the LAMP web application software stack (and others), which is an acronym for Linux, Apache, MySQL, Perl/PHP/Python. MySQL is used by many database-driven web applications, including Drupal, Joomla, phpBB, and WordPress. MySQL is also used by many popular websites, including Facebook, Flickr, MediaWiki, Twitter, and YouTube. MySQL is written in C and C++. Its SQL parser is written in yacc, but it uses a home-brewed lexical analyzer. MySQL works on many system platforms, including AIX, BSDi, FreeBSD, HP-UX, ArcaOS, eComStation, IBM i, IRIX, Linux, macOS, Microsoft Windows, NetBSD, NovellNetWare, OpenBSD, OpenSolaris, OS/2 Warp, QNX, Oracle Solaris, Symbian, SunOS, SCO OpenServer, SCO UnixWare, Sanos and Tru64. A port of MySQL to OpenVMS also exists. The MySQL server software itself and the client libraries use dual-licensing distribution. They are offered under GPL version 2, or a proprietary license. Support can be obtained from the official manual. Free support additionally is available in different IRC channels and forums. Oracle offers paid support via its MySQL Enterprise products. They differ inthe scope of services and in price. Additionally, a number of third party organisations exist to provide support and services. MySQL has received positive reviews, and reviewers noticed it "performs extremely well in the averagecase" and that the "developer interfaces are there, and the documentation (not to mention feedback in thereal world via Web sites and the like) is very, very good". It has also been tested to be a "fast, stable and true multi-user, multi-threaded SQL database server". MySQL was created by a Swedish company, MySQL AB, founded by Swedes David Axmark, Allan Larsson and Finland Swede Michael "Monty" Widenius. Original development of MySQL by Wideniusand Axmark beganin 1994. The first version of MySQL appeared on 23 May 1995. It was initially created for personal usage

from mSQL based on the low-level language ISAM, which the creators considered too slow and inflexible. They created a new SQL interface, while keeping the same API as mSQL. By keeping the API consistent with the mSQL system, many developers were able to use MySQL instead of the (proprietarily licensed) mSQL antecedent.^[1]

A graphical user interface (GUI) is a type of interface that allows users to interact with electronic devices or programs through graphical icons and visual indicators such as secondary notation, as opposed to text-based interfaces, typed command labels or text navigation. Third-party proprietary and free graphical administration applications (or "front ends") are available that integrate with MySQL and enable users to work with database structure and data visually. A command-line interface is a means of interacting with a computer program where the user issues commands to the program by typing in successive lines of text (command lines). MySQL ships with many command line tools, from which the main interface is the mysql client. MySQL Utilities is a set of utilities designed to perform common maintenance and administrative tasks. Originally included as part of the MySQL Workbench, the utilities are a stand-alone download available from Oracle. Percona Toolkit is a cross-platform toolkit for MySQL, developed in Perl.^[1] Percona Toolkit can be used to prove replication is working correctly, fix corrupted data, automate repetitive tasks, and speed up servers. Percona Toolkit is included with several Linux distributions such as CentOS and Debian, and packages are available for Fedora and Ubuntu as well. Percona Toolkit was originally developed as Maatkit, but as of late 2011, Maatkit is no longer developed. MySQL shell is a tool for interactive use and administration of the MySQL database. It supports JavaScript, Python or SQL modes and it can be used for administration and access purposes.



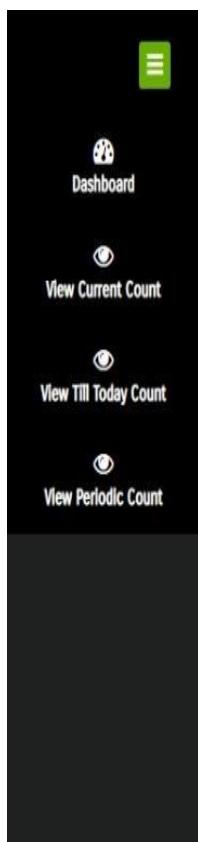
CHAPTER-8

SCREEN LAYOUTS

CHAPTER 8

SCREEN LAYOUTS





Retail Branch

A decorative graphic consisting of five colorful speech bubbles in red, orange, yellow, blue, and purple, arranged horizontally. The word 'WELCOME' is written in white capital letters across the center of the bubbles.

Activate Windows
Go to Settings to activate Windows.

The screenshot shows the Admin Panel interface. On the left, there is a sidebar with the following menu items:

- Dashboard
- Add Retail Branch
- View Retail Branch Details
- View Till Today Count
- View Periodic Count

The main content area has a title "Admin Panel" and a search bar with placeholder text "Search..." and a magnifying glass icon. Below the title, there is a section titled "RETAIL BRANCH DETAILS". A table displays the following data:

Kit_id	Branch_Name	Branch_Location	Email	Current Count	Action
1001	DMart Adgaon	Adgaon	dma@gmail.com	1	Delete
1002	DMart Indira Nagar	Indira Nagar	dmin@gmail.com	0	Delete
1003	DMart Pathardi	Pathardi Phata	dmp@gmail.com	0	Delete

Activate Windows
Go to Settings to activate Windows.

The screenshot shows the Admin Panel interface. On the left is a sidebar with icons and text for Dashboard, Add Retail Branch, View Retail Branch Details, View Till Today Count, and View Periodic Count. The main area has a title "Admin Panel" and a search bar. Below it is a section titled "VIEW PERIODIC COUNT" containing a table with one row of data.

Kit_id	Branch_Name	Branch_Location	Email	Periodic Count
1001	DMart Adgaon	Adgaon	dma@gmail.com	20

Activate Windows
Go to Settings to activate Windows.

The screenshot shows the Admin Panel interface. On the left, there is a sidebar with icons and text links: Dashboard, Add Retail Branch, View Retail Branch Details, View Till Today Count, and View Periodic Count. The main area has a title "Admin Panel" and a search bar with placeholder "Search...". Below this, a large box contains the heading "VIEW TILL TODAY COUNT" and a table with three rows of data.

Kit_id	Branch_Name	Branch_Location	Email	Till Today Count
1001	DMart Adgaon	Adgaon	dma@gmail.com	20
1002	DMart Indira Nagar	Indira Nagar	dmin@gmail.com	5
1003	DMart Pathardi	Pathardi Phata	dmp@gmail.com	0

Activate Windows
Go to Settings to activate Windows.

The screenshot shows the Admin Panel interface. On the left is a sidebar with a black background and white icons. The sidebar includes:

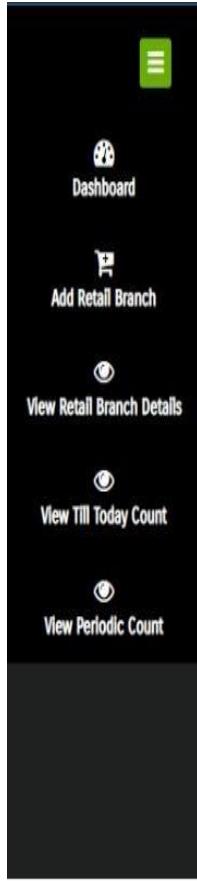
- Dashboard
- Add Retail Branch
- View Retail Branch Details
- View Till Today Count
- View Periodic Count

The main area has a light gray background. At the top, the text "Admin Panel" is displayed in orange. Below it, a large button labeled "VIEW PERIODIC COUNT" in bold, dark gray capital letters is centered. To the right of this button is a small green downward-pointing arrow icon.

The "View Periodic Count" button is contained within a white rectangular form. This form has three input fields and one action button:

- Kit id:
- Start Date:
- End Date:
-

Activate Windows
Go to Settings to activate Windows.



Admin Panel

WELCOME

Activate Windows
Go to Settings to activate Windows.

The image shows a screenshot of an Admin Panel application. On the left, there is a dark sidebar with a menu:

- Dashboard
- Add Retail Branch
- View Retail Branch Details
- View Till Today Count
- View Periodic Count

The main area is titled "Admin Panel" in orange. It contains a form for adding a new retail branch:

Kit id:	<input type="text" value="Enter Kit id"/>
Retail Branch Name:	<input type="text" value="Enter Retail Branch Name"/>
Retail Branch Location:	<input type="text" value="Enter Retail Branch Location"/>
Email	<input type="text" value="Enter Email ID"/>
Password	<input type="text" value="Enter Password"/>

[Add Details](#)

Activate Windows
Go to Settings to activate Windows.

The screenshot shows a web-based application titled "Admin Panel". On the left, there is a dark sidebar menu with the following items:

- Dashboard
- View Current Count
- View Till Today Count
- View Periodic Count

The main content area has a header with "Admin Panel" and a search bar. Below the header, there is a section titled "VIEW TILL TODAY COUNT" containing a table with one row of data.

Kit_id	Branch_Name	Branch_Location	Email	Till Today Count
1001	DMart Adgaon	Adgaon	dma@gmail.com	20

Activate Windows
Go to Settings to activate Windows.

The screenshot shows a web-based application interface. On the left is a dark sidebar menu with white icons and text:

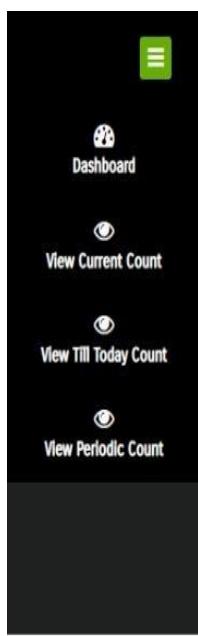
- Dashboard
- View Current Count
- View Till Today Count
- View Periodic Count

At the top center, the text "Admin Panel" is displayed in orange, with a green search bar containing the placeholder "Search..." and a magnifying glass icon to its right.

The main content area features a title "VIEW PERIODIC COUNT" in large, bold, gray capital letters. Below it is a table with the following data:

Kit_id	Branch_Name	Branch_Location	Email	Periodic Count
1001	DMart Adgaon	Adgaon	dma@gmail.com	20

Activate Windows
Go to Settings to activate Windows.



Retail Branch

COUNT OF VISITORS

Kit_id	Branch_Name	Branch_Location	Email	Current Count
1001	DMart Adgaon	Adgaon	dma@gmail.com	1

Activate Windows
Go to Settings to activate Windows.

The screenshot shows a user interface for an 'Admin Panel'. On the left, there is a sidebar with a dark background containing four items: 'Dashboard' (with a bar chart icon), 'View Current Count' (with a circular icon), 'View Till Today Count' (with a circular icon), and 'View Periodic Count' (with a circular icon). The 'View Periodic Count' item is highlighted with a blue border. The main content area has a white background. At the top, the text 'Admin Panel' is displayed in orange. Below it, a large heading 'VIEW PERIODIC COUNT' is centered in a dark gray font. Underneath the heading, there are two input fields: 'Start Date:' followed by a date input box containing '03/01/2022' and a calendar icon, and 'End Date:' followed by a date input box containing '04/13/2022' and a calendar icon. At the bottom of the form is a blue button labeled 'View Count'.

Activate Windows
Go to Settings to activate Windows.

CHAPTER-9

SYSTEM TESTING

CHAPTER 9

SYSTEM TESTING

Test Cases

TC_ID	Feature	Sub_Feature	TC_Type	Test Scenario	Action and De	Input	Expected Re	Actual Result	Status
TC_001	Admin	ADMINId	Valid	Validate or check whether ADMINId field accept Admin_Id	Enter number.	ADMINID:12	ADMIN id sho	ADMIN id is accep	Pass
			Invalid	Validate or check whether ADMINId field accept Admin_Id	Enter alphabet.	ADMINID:abcd	ADMIN id sho	ADMIN id is not a	Pass
		ADMINName	valid	Validate or check whether ADMINName field accept Admin_Name	Enter Alphabet	ADMINname:abdc	ADMIN name	ADMIN name is a	pass
			Valid	Validate or check whether email id field accept alpha+num+@+alpha+ com	Emailid:om12@gmail.co m	Email id should be accepted.	Emailid is accepted.	Emailid is accepted.	Pass
		EmailId	Invalid	Validate or check whether email id field accept alpha+num+@ or not.	Enter alpha+num+@.	Emailid:om12@	Error message should be display.	Error message is display.	Pass
			Valid	Validate or check whether contact number field accept 10-digit number or	Enter 10-digit contact number.	ContactNumber: 9812345678	Contact number should be accepted.	Contact number is accepted.	Pass
		ContactNumber	Invalid	Validate or check whether contact number field accept less than 10-digit number or not.	Enter less than 10-digit contact number.	ContactNumber:981234	Error message should be display.	Error message is display.	Pass
			Valid	Validate or check whether Password field accept unregister password or Password field accept password	Enter register	Password:om1234	Password should	Password is accepted.	Pass
		Password	Invalid	Validate or check whether password field accept unregister password or	Enter unregister password	Password:1234	Error message should be display.	Error message is display.	Pass
			Valid	Validate or check whether Gaurdian_TeacherName field accept Gaurdian_TeacherName	Enter register usernam	Gaurdian_Teachername:Teach	Gaurdian_Teachername should b	Gaurdian_Teachername is accepted.	Pass
			Invalid	Validate or check whether Gaurdian_TeacherName field accept Gaurdian_TeacherName	Enter unregister usern	Gaurdian_Teachername:Teach	Error message shou	Wrong Gaurdian_Teachername passw	Pass
			Valid	Validate or check whether Password field accept	Enter register passwo	Password:1234	Password should be	Password is accepted.	Pass
			Invalid	Validate or check whether Password field accept	Enter unregister pass	Password:12345	Error message shou	Wrong username passw	Pass
		LoginButton	Valid	Validate or check whether	Click on login button.	Login:Click	Add here page shou	Add here page is added	Pass

TC_004	View_Gaurdian_Teachers	View	valid	check weather the Teachers	check the Gaurdian Teachers	Click:view	Data should be vie	Data viewed	pass
TC_005	Delete_Gaurdian_Teachers	Delete	valid	Delete the Gaurdian_Teachers filed	Delete Gaurdian_Teachers field	Clic Delete	Data should be Deleted	Data Deleted	pass
TC_006	Add Student	Student_id	Valid	Validate or check whether StudentId field accept StudentId	Enter number.	Student_id:12	Patient_id id should be a	Student_id id is accepted.	Pass
			Invalid	Validate or check whether StudentId field accept StudentId/validate or check whether StudentId field accept StudentId	Enter alphabet.	Student_id:abcd	Student_idid should not a	Student_id is not accepted.	Pass
		Student_name	valid	Validate or check whether	Enter alphabet.	Student_name: abc	Student_name name	Student name accepted	pass
			invalid	Validate or check whether StudentId field accept StudentId/validate or check whether StudentId field accept StudentId	Enter Student_name	Student_name: abc	Student_name name	Student name not accep	pass
		Address	valid	Validate or check whether Address field accept StudentId/Address	Enter Location	Address: Nashik	Address should be	AddressAccepted	Pass
			invalid	Validate or check whether Address field accept StudentId/Address	Enter number.	Address:123456	Address should not be	Address not accepted	pass
		Roll_No	valid	Validate or check whether Roll_No field accept StudentId/Roll_No	Enter region	Roll_No:39	Roll_No should be ac	Roll_No accepted	pass
			invalid	Validate or check whether Roll_No field accept StudentId/Roll_No	Enter number.	Roll_No:abc	Roll_No should not be	Roll_No not accepted	pass
TC_007	View Student	View	Valid	validate or check if the Student	Click on the view Butto	Click:view	Student should be view	Studentviewed	pass
TC_008	Delete_Student	Delete	Valid	validate or check if the data	Click on the Delete Button	Click:Delete	Data should be Deleted	Student Deleted	pass

TC_009	Add Parents	ParentsId	Valid	Validate or check whether ParentsId field accept Parents_Id	Enter number.	ParentsID:12	Parents Name is show	Parent Name id is accepted Pass
			Invalid	Validate or check whether ParentId field accept Parent_Id	Enter alphabet.	ParentID:abcd	Parent id sho	Parent id is not accepted Pass
		ADMINName	valid	Validate or check whether ParentName field accept Parent_Name	Enter Alphabet	Parenname:abdc	Parents Name is show	Parents Name is accepted pass
		EmailId	Valid	Validate or check whether	Enter	EmailId:om12@gmail.co m	Email id should be accepted.	Emailid is accepted. Pass
			Invalid	Validate or check whether email id field accept alpha+num+@ or not.	Enter alpha+num+@.	EmailId:om12@	Error message should be display.	Error message is display. Pass
		ContactNumber	Valid	Validate or check whether contact number field accept 10-digit number or	Enter 10-digit contact number.	ContactNumber: 9812345678	Contact number should be accepted.	Contact number is accepted. Pass
			Invalid	Validate or check whether contact number field accept less than 10-digit number or not.	Enter less than 10-digit cotact number.	ContactNumber:981234	Error message should be display.	Error message is display. Pass
		Password	Valid	Validate or check whether Password field accept unregister password or Password field accept password	Enter register	Password:om1234	Password should	Password is accepted. Pass
TC_010	View Parents	View	Valid	validate or check if the Parents	Click on the view Button	Click:view	Parents should be view	Parents viewed pass

TC_011	User_Login	UserId	Valid	Validate or check whether User Login field accept UserID	Enter number.	UserID:12	User id sho	User id is accep	Pass
			Invalid	Validate or check whether User Login field accept UserID	Enter alphabet.	UserID:abcd	User id sho	User id is not a	Pass
		Password	Valid	Validate or check whether User Login field accept Password	Enter register	Password:om1234	Password should	Password is accepted.	Pass
		LoginButton	Valid	Validate or check whether	Click on login button.	Login:Click	Add here page shou	Add here page is added	Pass
			Invalid	Validate or check whether User Login field accept LoginButton	Click on login button.	Login:Click	Error message shou	Wrong username passw	Pass
				Verify user should get an error message when he/she enters not registered email id	1. Click on the Forgot password link. 2. Enter unregistered email id and click on the send button.	User should get an error message	Invalid User Name Or Password		
		Forgot Password	Valid	Validate or check whether User Login field accept Forgot Password	Verify user should get an error message when he/she enters not registered email id	1. Go to the reset password link. 2. Enter a new password and a confirm password. 3. Click on the Reset Password button. 2. Enter the previous password. 3. Click on the Reset Password button.	Users should get the success message and the password should get reset.	Password reset Successful	Pass
		Reset Password							
		Welcome Email	Valid	Validate or check whether User Login field accept Welcome Email	Verify new users should get the welcome email once after the login.	1. Go to the Email. 2. Enter Login_Email.	Users should get a welcome email on his/her email id	Successful Login	Pass
TC_012	Invalid User Login	UserLogin	Valid	Validate or check whether invalid User Login field accept UserLogin	Check result when User enter invalid username password	UserID:12 Password:1234	when User enter invalid username and password , system will be show error message -"invalid username,password"	system is showing error message - "invalid username,password"	Pass

TC_013	Open Application	View	Valid	Verify to open application on the device	Click on the view Button	Click:Open	Application should get opened. open on device. Application should be open . open on device open on device Application should be open on device	Application is getting opened	pass
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CHAPTER-10

FUTURE SCOPE

CHAPTER 10

FUTURE SCOPE

- Count the number of people traversing a certain entrance or passage.
- In order to make wise business decisions that help your mall thrive, you need data about your customers and their experience at your location.
- A foot traffic counter from People Counter System can help you improve your mall's customer experience and raise revenue.
- You can also measure and predict the impact of seasonal changes and the draw through rate of the anchor stores within the mall.

CHAPTER-11

ADVANTAGES

CHAPTER 11

ADVANTAGES

- It is beneficial for hospitals and museums.
- The software can be used for security purposes in organizations and in secured zones.
- The system is convenient and secure for the users.
- It saves their time and efforts.
- It grants a quick and efficient verification of a person.
- Effective store management can take place includes breaks, working hours of staff.
- Maintain count of people allowed in a mall at a time.
- Improve customer service.
- Calculate your store conversation ratio.
- Compare store performance across a worldwide network.

CHAPTER-12

DISADVANTAGES

CHAPTER 12

DISADVANTAGE

- Due to voltage fluctuations, chances of hardware damage.
- Internet Connection should be available to access data remotely.

CHAPTER-13

COST ESTIMATION

CHAPTER 13

COST ESTIMATION

It is the most frequently used technique for evaluating the effectiveness of the proposed system. More commonly known as cost/benefit analysis. It determines the benefits savings that are expected from the proposed system compare them with costs. The system is economically feasible since it would not entail additional hardware, thereby savings on the costs the manpower involved. In economical feasibility study we do some calculations.

Phases	Cost /Hour	Hours	Cost Estimation
Requirement gathering	30/-	20H	600
Design	50/-	30H	1500
Code development	50/-	20H	1250
Implementation	60/-	40H	2400
Testing	40/-	10H	400

Time estimate chart

Phases	Time
Analysis	20H
Design	30H
Coding	20H
Testing	30H
Documentation	20H
Maintainance	40H
Total time	160H

CONCLUSION

CONCLUSION

We will be developing a People Counter system. A novel people counter system with IoT via Ultrasonic sensor which detects the change in Ultrasonic radiation of warm blooded moving objects. People counting system collects information about store traffic, in combination with the Smart shelf system, they provide crucial data, help you gain insights into customer behavior to evaluate merchandising and marketing efforts as well as to adjust daily operations and enhance optimal customer experience. Once the intruder moves out of the detection range of the PIR sensor, the webcam and the light gets turn off. This system provides actionable information that help organizations increase profitability and enhance operational efficiency. It helps to determine how much sales revenue is being generated, how much staff is needed and analyze effectiveness to make proper business decisions.

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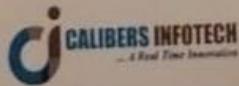
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