A Mini Project Synopsis on

Call Center Management System

S.E. - I.T Engineering

Submitted By

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CERTIFICATE

This to certify that the Mini Project report on **Call Center Management System** has been submitted by Shreyash Pawar (22204002), Shravandeep Yadav (22204003), Sarvesh Takle (22204006), and Anurag Sawant(22204016) who are a Bonafede students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in **Information Technology**, during the academic year **2022-2023** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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Chapter 1

Introduction

A call center management system is a software application that helps businesses manage their inbound and outbound customer interactions efficiently. It is designed to automate and streamline the processes involved in handling large volumes of customer calls and inquiries, such as call routing, call queuing, call tracking, and reporting. The primary objective of a call center management system is to ensure that customers receive prompt, accurate, and personalized service. The development of a call center management system involves several stages, including requirements gathering, design, development, testing, deployment, and maintenance. The system can be customized to meet the specific needs of different businesses, such as those in the healthcare, finance, retail, or telecommunications industries. The implementation of a call center management system can have several benefits for a business, such as increased customer satisfaction, improved efficiency, reduced costs, and better data analysis and reporting. Overall, a well-designed and implemented call center management system can be a valuable asset for businesses that rely heavily on customer interactions.

1.1 Purpose.

- A call center management system is a centralized office used for the purpose of receiving a large volume of request by customers and providing assistance.
- Outgoing calls for telemarketing, clientele, product services, and debt collection are also made.
- The purpose of a call center management system software is to help businesses manage their customer interactions effectively and efficiently.
- It queues calls in an organized manner, reducing wait times and improving customer satisfaction.

1.2 Objectives

- Help Businesses, Companies in making their business more efficient.
- The objective of the call center management system is to streamline and optimize the operations of a call center by providing a centralized platform for managing incoming and outgoing calls, tracking call metrics, and monitoring agent performance.
- The system aims to enhance the efficiency of call center operations, improve customer experience, and increase overall productivity.
- To provide businesses with a comprehensive and efficient tool to manage their customer interactions.

1.3 Scope

- The software should be able to monitor and track call metrics such as call volume, wait times, call duration, and call outcomes.
- The software should be able to manage customer data effectively, when operating for other business systems, such as CRM, ticketing, and knowledge management systems, to provide a seamless customer experience and improve data management.
- One of the future scopes of the software should provide tools such as call scripting to personalize the customer experience and reduce the need for customers to repeat information.
- The software should be secure to ensure the protection of sensitive customer data and prevent unauthorized access.

Chapter 2

Problem Definition

2.1 Existing System

- The existing system is a manual system. Here the employee's needs to save the information in the form of excel sheets or Disk Drives.
- For employee to manage their work and day to day targets is difficult, which result in inefficiency.
- The manual system gives us very less security for saving data and, some data may be lost due to mismanagement.
- It's a limited system and fewer users friendly.
- Searching of particular information about a user is very critical it takes lot of time.
- It is very critical to maintain manually call records of customers, because call center receives huge no of calls per day.
- It is a tedious job to maintain different customers when asking different service details, normally solving these queries are not possible and hence automated system is needed.
- Every employee having different rosters, different shift timings, manually handling these rosters is tough work.
- Searching an employee roster in call center system is a tedious job.

2.1.1 Limitation in Existing System

- **Limited scalability**: Physical call centers are limited by the number of agents that can work in a single location. As call volumes increase, it becomes increasingly difficult to manage calls effectively and efficiently, leading to longer wait times and lower customer satisfaction.

- **Limited flexibility**: Physical call centers are limited in their ability to adapt to changes in call volume, staffing requirements, and business needs. This can result in inefficiencies, missed opportunities, and decreased customer satisfaction.

- **Higher costs**: Physical call centers require significant investments in infrastructure, equipment, and staffing. These costs can be prohibitive for small and medium-sized businesses, leading to a lack of access to critical customer service resources.

- **Geographical limitations**: Physical call centers are limited by geography, which can make it difficult to provide support to customers in different regions or time zones.

- **Lack of real-time visibility**: Physical call centers often lack real-time visibility into call metrics and agent performance, making it difficult for supervisors to monitor and manage their teams effectively.

Chapter 3

Proposed system

- Pages: Login page - where the user can log in with their username and password to access the call management system.
- Dashboard page - where the user can see an overview of the calls and agents. This could include information such as the number of calls currently in progress, the average call duration, and the number of available agents.
- Call queue page - where the user can see a list of all the calls that are currently waiting in the queue. This page should also allow the user to assign an available agent to a call and remove a call from the queue if it is no longer needed.
- Agent management page - where the user can manage the agents who are available to take calls. This page should allow the user to add new agents, update existing agents, and remove agents who are no longer available.
- Call log page - where the user can view a log of all the calls that have been made. This page should include information such as the start time and end time of each call, the caller's phone number, and the agent who handled the call.
- Reports page - where the user can generate reports on call volume, call duration, and other call-related metrics.

3.1 Aims/Benefits of the Micro-Project

Airline Management System is the administration of airports and airlines. It includes the activities of setting the strategy of airports to gather and provide information on airline commercial and operational priorities. It covers abroad overview of the airline management. It is also studied as a branch of study that teaches management of airport and airlines

Benefits:

1) Improved customer satisfaction.
2) Enhanced agent productivity.
3) Better call routing.
4) Real-time monitoring and reporting.
5) Cost savings
6) Increased scalability.

3.2 Features and Functionality

Write all the features & Functionality you are planning to implement.

1. **Login:**

   To access and keep the track of all employees the admin has its own login page, same login authentication is for the employee to meet their daily targets from any device.

2. **Admin dashboard:**

   After successful login the admin can perform crud operations like create, delete, manage, update, employee, and check their stats like calls made and rating.

3. **Employee Dashboard:**

   Employee can keep a track of their stats like call logs, ratings and total calls. Employee can work on solving the active tickets and update them as the get solved. Can get access to customer info where they can find the notes or queries written regarding that customer.

4. **User GUI:**

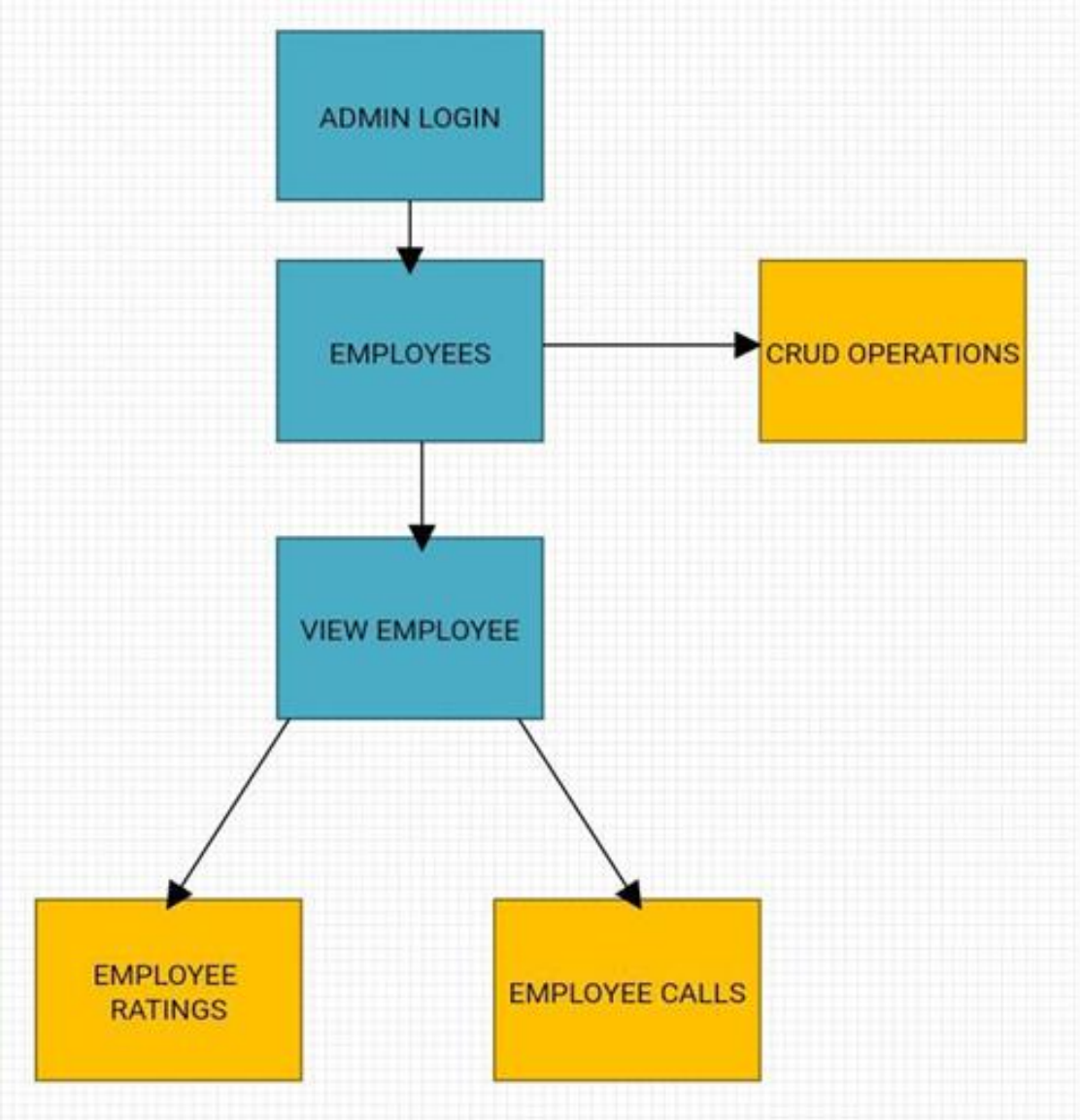
   User can ask any query and the query will be received to the employes. User also gets an option to select the most frequently asked questions, which help the user to identify there problem.

5. **Connection between User and Employee:**

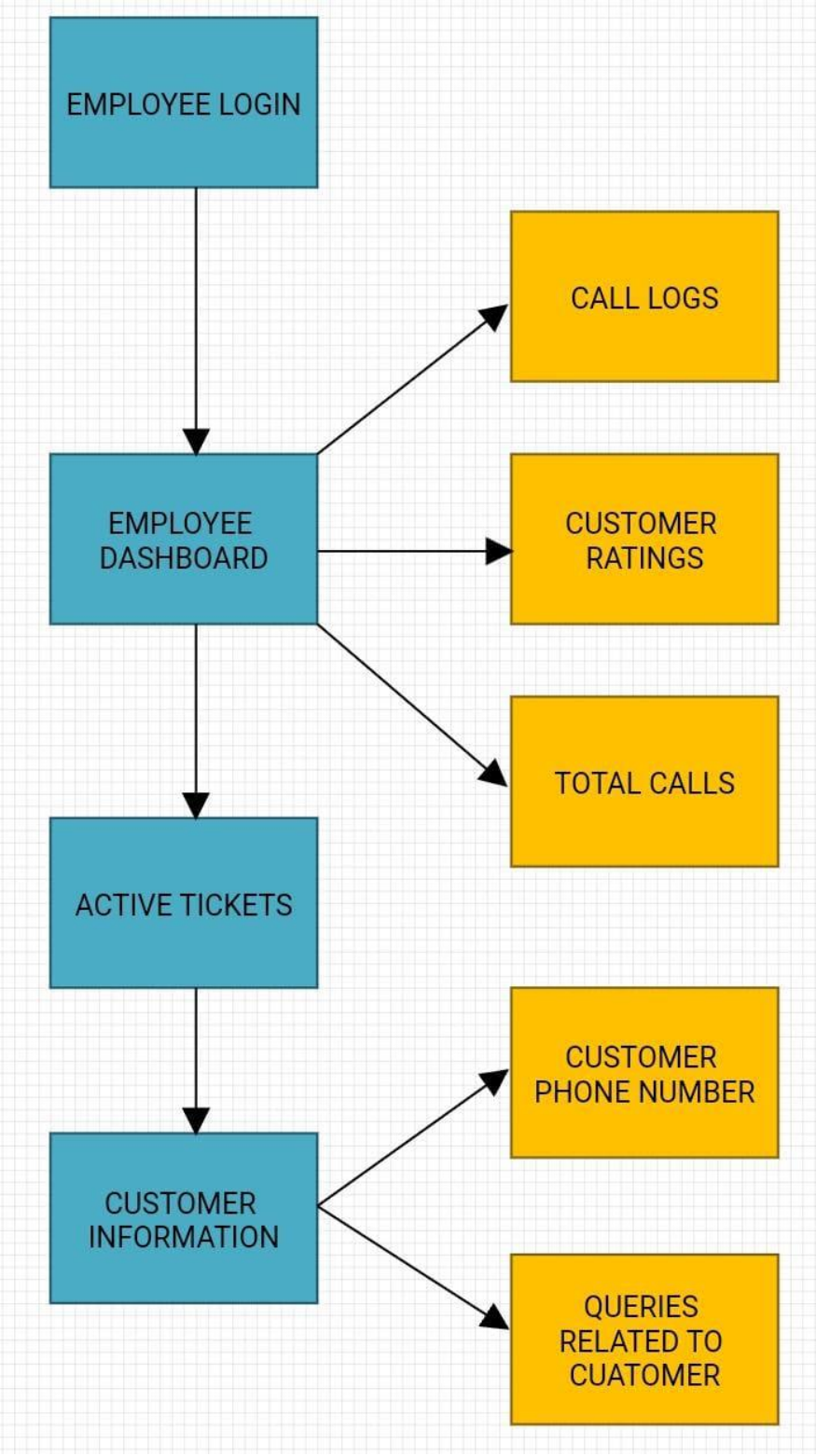
   When a customer sends a query through the customer interaction page, the employee receives it as a token and assigns a unique token number to the customer. Once the query is resolved, the customer is notified via email that their problem has been solved.

3.3 Block Diagram:

Admin:



Employee:


EMPLOYEE LOGIN
EMPLOYEE DASHBOARD
ACTIVE TICKETS
CUSTOMER INFORMATION
CALL LOGS
CUSTOMER RATINGS
TOTAL CALLS
CUSTOMER PHONE NUMBER
QUERIES RELATED TO CUATOMER

Chapter 4

Project Outcomes

1. **User can Login:**

   The user logging in can be an admin or an employee.

2. **Admin authorities:**

   a. Admin can observe and keep a track of the employee by checking the ratings provided by the customers and the calls made.

   b. Admin can create, update and manage all the employees, and provide customer information's that can be used by employee and can be considered as a target to achieve.

3. **Employee Authorities:**

   a. Employees can observe their call logs, active tickets, resolved tickets and work according to them which enhances the employee productivity.

   b. Gets customer info required to solve the queries regarding that customer.

Chapter 5

Technology Stack

1. Fronted HTML, CSS, JavaScript
2. Backend: Python
3. Database Used: MongoDB
4. Session handling JWT
5. Software Used: VS Code
6. Framework: Flask
7. Call Generation: Twilio

Chapter 6

Project Design

Login page for employee’s

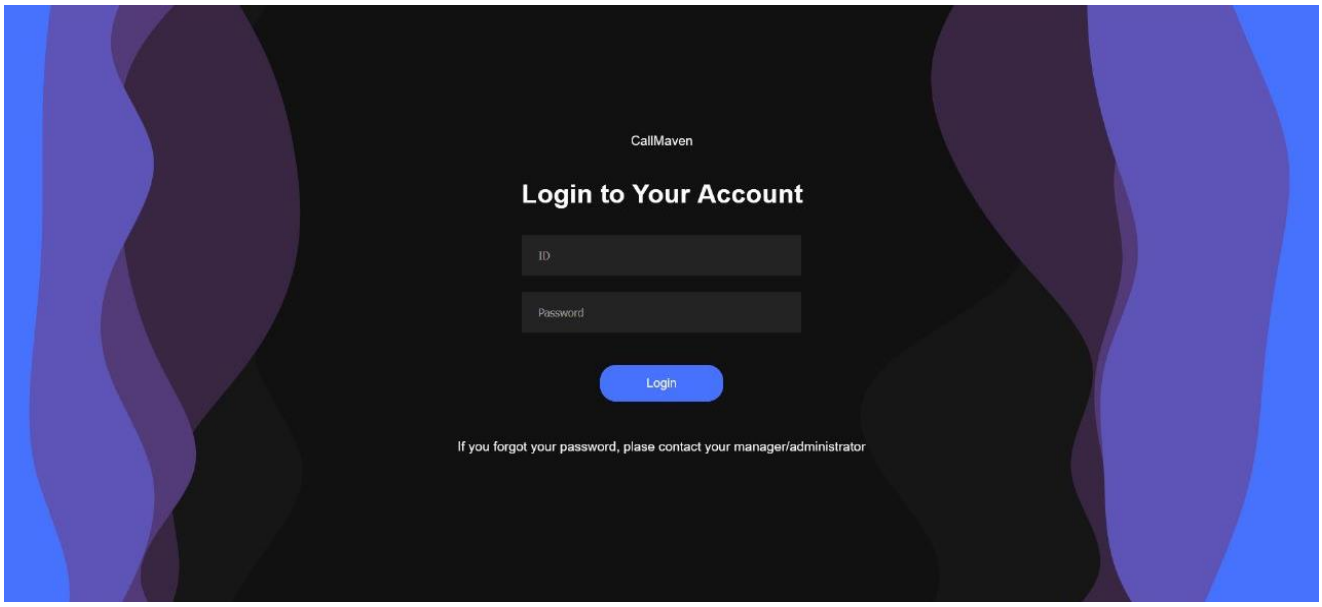


Fig 6.1 Employee Login Page.

Dashboard for employees to track progress.

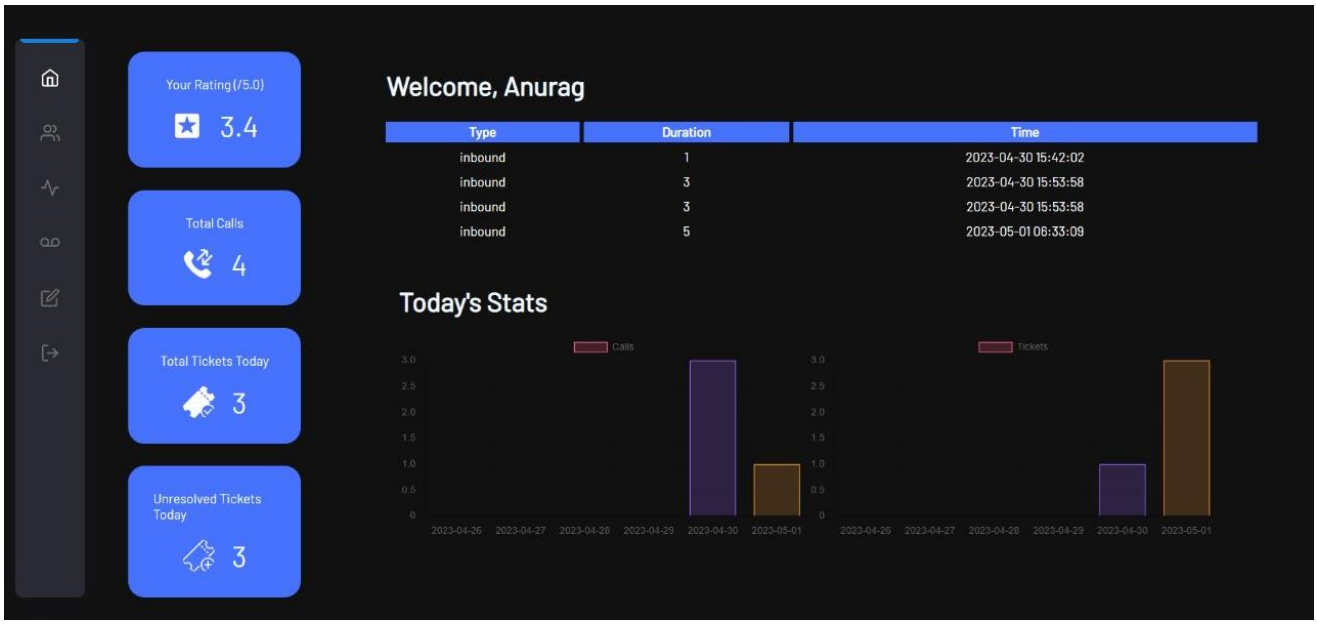


Fig 6.2 Employee Dashboard.

List of Customers

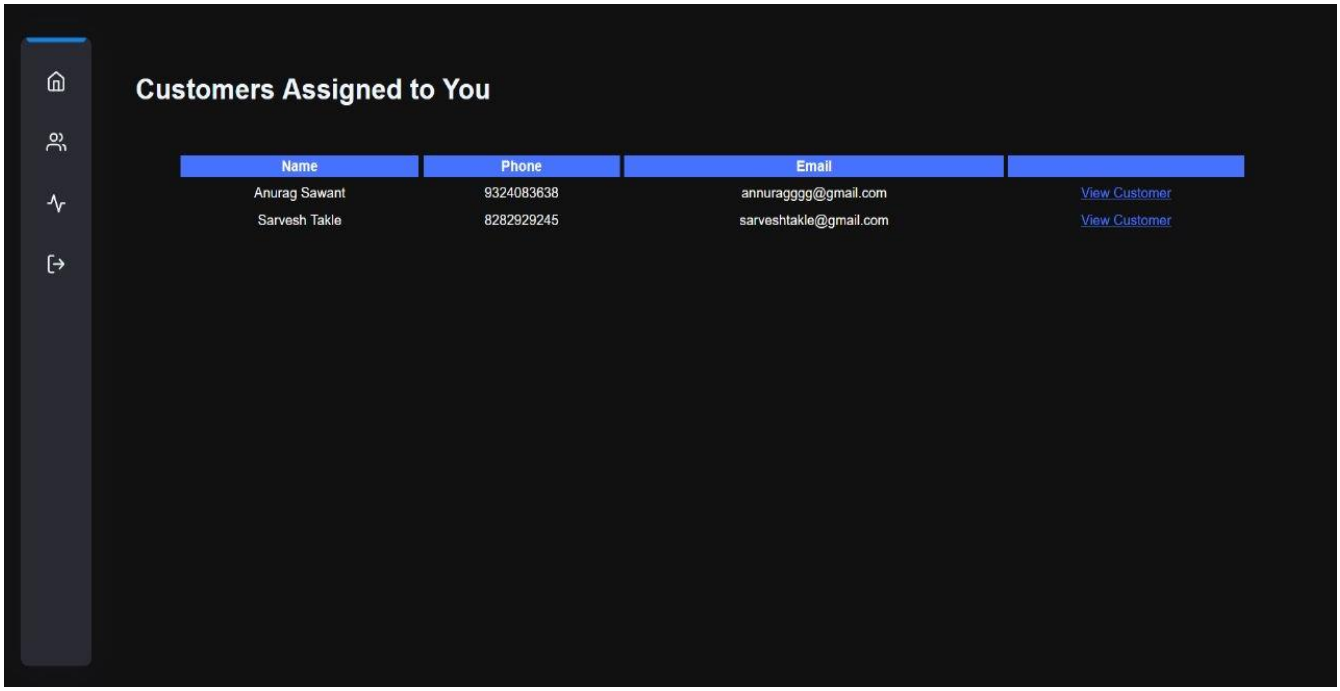


Fig 6.3 Customers Assigned to You Page.

Employee can see the Information of particular Ticket.

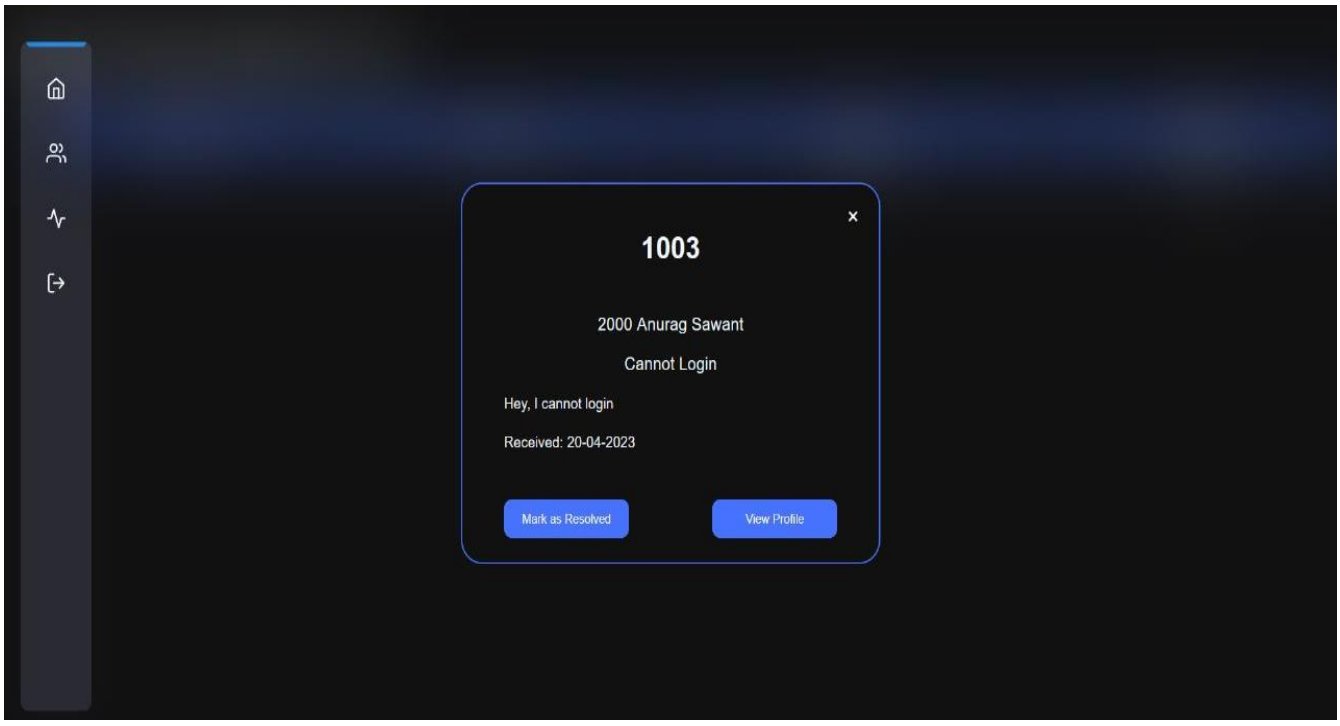


Fig 6.4 Ticket.

Details of Employee’s

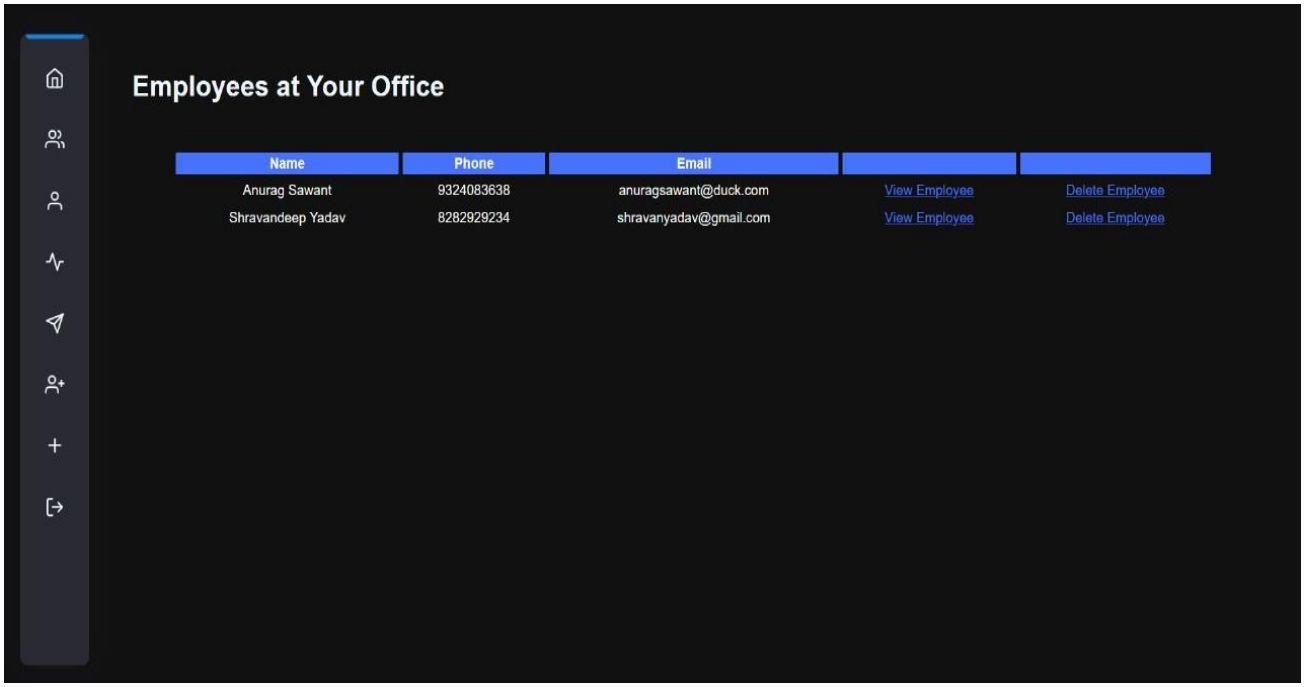


Fig 6.5 Employee Detail Page.

Login Page for Admin

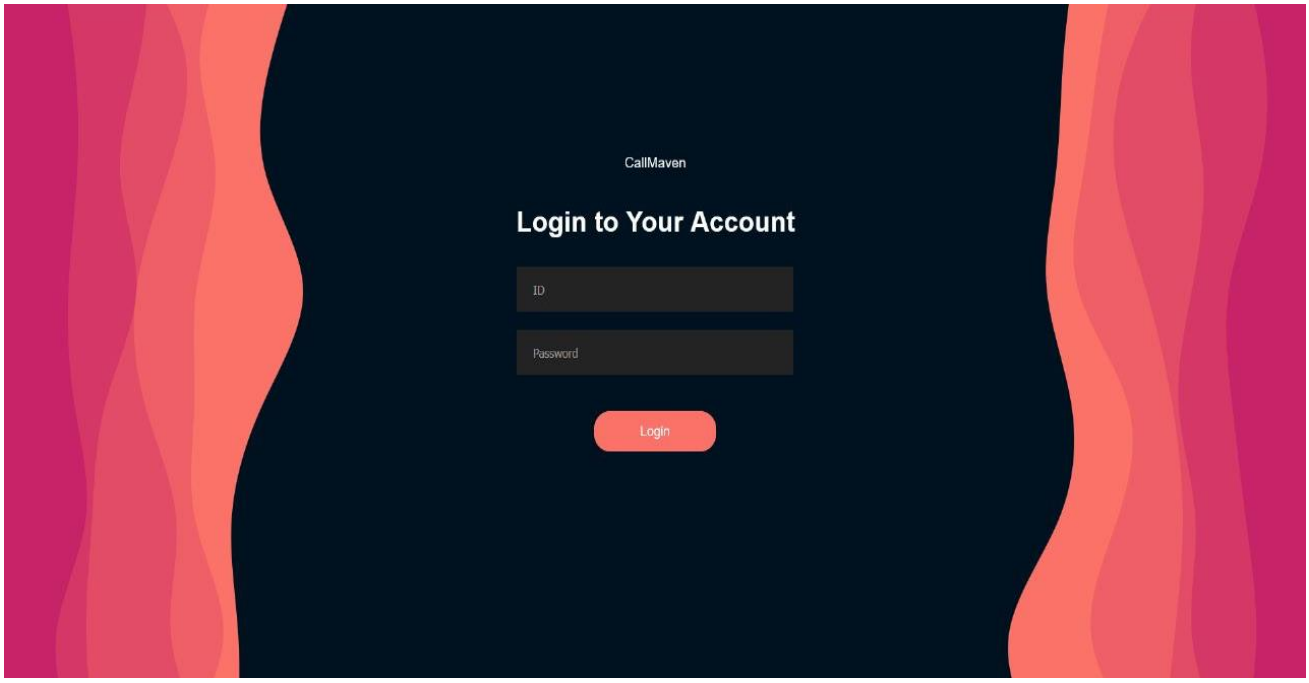


Fig 6.6 Admin Login.

Call Center for Past 6 Days Statistics.

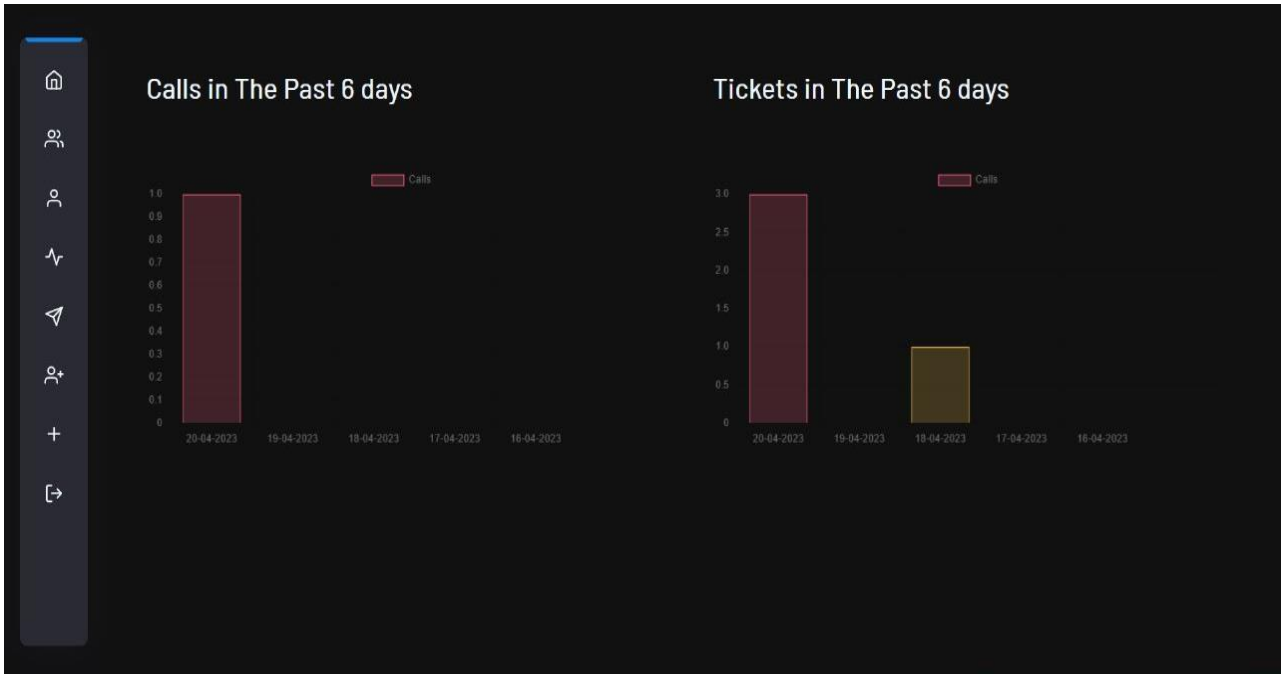


Fig 6.7 Call Statistics.

Add Employee

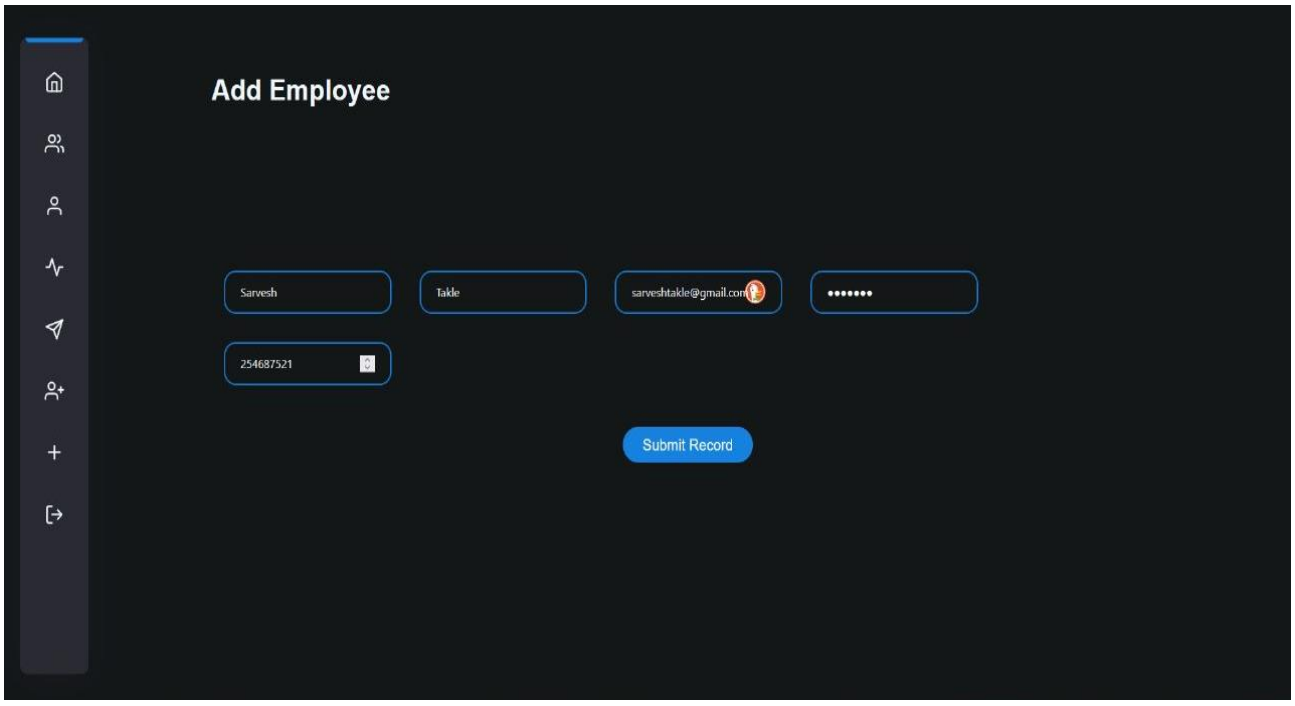
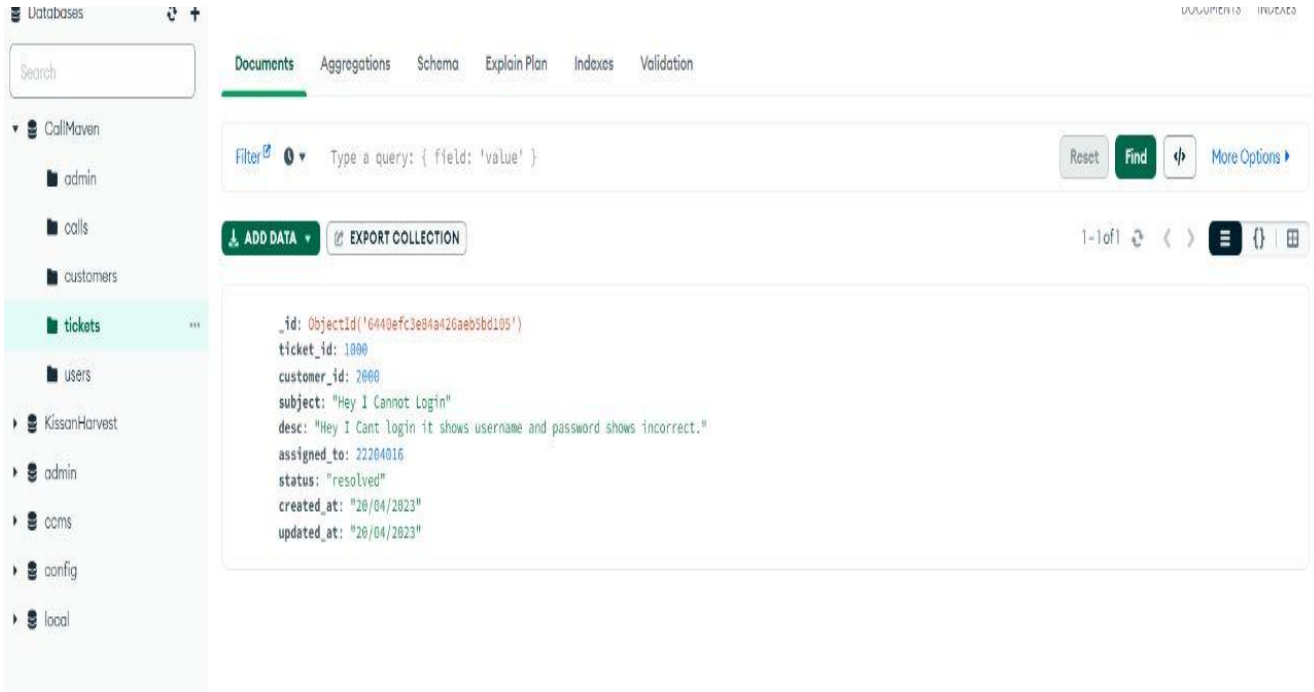


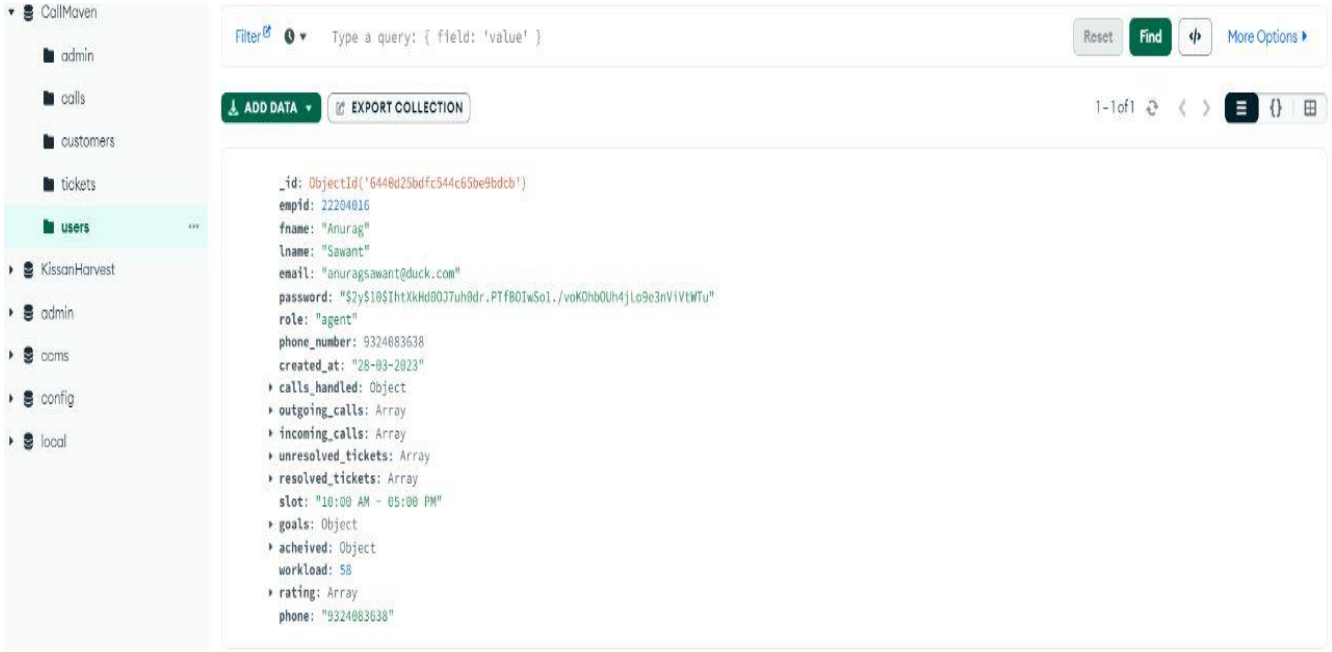
Fig 6.8 Add Employee Page.

Database

Tickets:



Users:



Chapter 7

Project Scheduling:

Sr No.	Group Members	Time Duration	Work to be done
1.	Shreyash Pawar Sarvesh Takle Shravandeep Yadav Anurag Sawant	In the Month of January.	Creating GUI of website using HTML, JavaScript and CSS and developing backend of website using Python.
2.		In the Month of February.	Creating a connectivity between frontend and Backend using Flask Framework.
3.		In the Month of March and April.	Connecting database and final completion of project.

Chapter 8

Conclusion

In conclusion, a well-designed call center management software can significantly improve the efficiency and effectiveness of call center operations. It can streamline call center operations, provide real-time insights into agent performance, and enhance the overall customer experience. With features like customer support page, call logs, and integration with other business tools, a call center management software can help businesses reduce costs, increase productivity, and achieve better outcomes. Therefore, investing in a robust call center management software can be a wise decision for businesses looking to optimize their customer service operations and stay ahead of the competition.

References

[1] https://www.twilio.com/blog/build-call-center-system-python-twilio

[2] https://medium.com/@djangostars/a-complete-guide-to-building-a-call-center-application-with-python-7e6d63f6b1f6

[3] https://pypi.org/project/flask-call-center/

[4] https://pypi.org/project/asterisk-callcenter/