OCTOBUS

PROJECT PRESENTATION

Mobile App

for

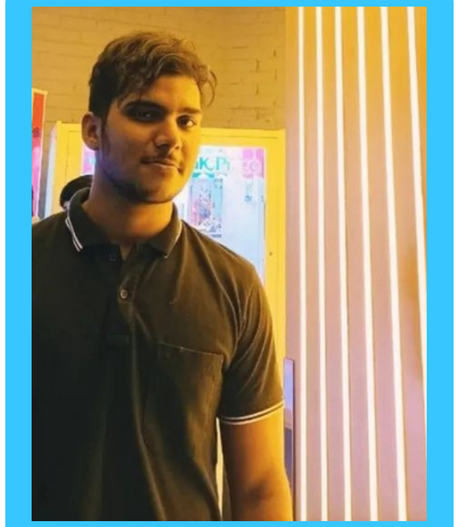
Bus Monitoring

OUR TEAM

Aasim

Anjaly

Thajudheen



Shyam

Problem

- Right now, there are no apps available to get information about private buses in Kerala. This causes problems as not everyone has access to infomation about the bus schedules.
- The buses change schedule frequently, and knowledge of such changes are not easily available to the public.
- The real-time location of buses is not available to the users.
- The users could not get information of nearby buses, or of buses following a particular route.

Solution

Bringing our bus management system online

- This project aims to create a digital platform for the current bus monitoring system.
- The platform can track the live-location of passengers.
- People can search for buses on different routes and check the entire schedule.
- Passengers can also check the fare between any two stops.

Project Stages

1. Problem Statement
2. Requirement Analysis
3. Use Case Diagram
4. Data Flow Diagram
5. Building Backend
6. Building Frontend
7. Testing
8. Risk Estimation

App Features

Login & Registration

- The registration page requires a user to provide valid email id and a strong password
- The login page requires a user to provide registered email id and password
- The user credentials are stored in the database
- Overall, the login system with email id and password provides a secure and convenient way for users to authenticate and access the app

Bus Schedule

- The system displays a list of possible journeys by accessing data from the database
- The user selects a journey and requests the schedule
- The system sorts the schedule according to the starting time and displays the bus name, starting time and ending time of the journey
- By providing accurate and up-to-date bus schedule information, the app helps users plan their trips efficiently and stay informed about the status of their bus

Fare Calculator

- The system displays a list of possible source and destination locations by accessing data from the database
- The user selects a source and destination and requests the fare
- The system displays the fare
- Overall, the fare calculator provides with a convenient and efficient way to calculate their travel cost and plan their journeys more effectively

Live Tracking

- The live tracking feature enables the passengers to track their current location in real time
- This feature enhances the user experience and helps them stay informed about their journey's progress
- The system provides 3 buttons to manage live tracking: Add My Location, Enable Live Location, Stop Live Location

App Development Tools

Tools

- Flutter SDK
- Android Studio
- Firebase
- Git
- GitHub
- Google Maps
- Visual Studio Code

Process of Development

Setting up Frontend

- We installed Flutter and Android Studio on our development machine, created a new Flutter project and set up the necessary dependencies
- We added a virtual Android Emulator using Android Studio
- We implemented the necessary functionality for user authentication and database connectivity

Setting up Firebase

- We created a new Firebase project on Firebase Console
- We enabled Firebase services for the project, including authentication and real time database
- We added the Firebase configuration file to our project file

Setting up Git

- Using Git as a version control system allowed us to keep track of changes made in our code over time
- With this, we could create different versions of code, collaborate with other team members and easily roll back changes if necessary
- Our team members could work on different aspects of the project concurrently. As a result, it improved productivity, reduced errors and ultimately led to a better end product

Setting up GitHub

- We used GitHub as a web-based hosting service for our Git repositories
- It allowed us to store our code online, and collaborate with team members by sharing code, reviewing changes and merging code changes together
- We could access the code at any time through any platform

Setting up Google Maps

- We implemented Google Maps API for our project
- We added the necessary dependencies into our Flutter project
- We used Google Maps API to display the user's current location on the map
- We implemented the necessary functionality for tracking the user's real time location

Future Development Plans

- Real-time Analytics: The app could be enhanced to provide real-time analytics on performance of the buses, including average speed, number of stops, on-time performance, number of passengers, peak hours and much more
- Integration with other transportation services
- Integration with payment systems for a cashless future
- Expand into more cities across the country
- Different views for bus administrator and bus staff

Thank You