

A project proposal for partial fulfilment of the course unit IT3162- Group
Project for the degree of Information Technology

ShareMyRide

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Declaration

We hereby declare that the project proposal submitted for evaluation of course module IT3162 leading to the award of a Bachelor of Science in Information Technology is entirely our own work, and the contents taken from the work of others have been cited and acknowledged within the text. This proposal has not been submitted for any degree at this University or any other institution.

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I recommend the project to be carried out by the students,

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Date

I. Introduction

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II. Background

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VI. References

I. Introduction

1.1 Introduction

The "ShareMyRide" mobile application is designed to offer a platform that facilitates ride-sharing. The main goal of this project is to create an efficient, user-friendly system that enables drivers to share available seats in their vehicle with passengers traveling the same route. By connecting drivers and passengers, the application aims to reduce traffic congestion, lower fuel consumption, and decrease travel costs for users. The project will be undertaken as a practice exercise, without any financial investment.

1.2 Objectives

The objectives of the "ShareMyRide" project are to:

- To develop a user-friendly mobile application for ride-sharing.
- To allow drivers to post their travel routes and available seats.
- To enable passengers to find and join rides on their desired routes.
- To ensure secure and efficient communication between drivers and passengers.

1.3 Benefits of this research

The proposed "ShareMyRide" platform offers several benefits:

- **Economic Savings:** By sharing rides, both drivers and passengers can reduce their fuel expenses.
- **Environmental Impact:** Ride-sharing helps decrease the number of single-occupancy vehicles, contributing to reduced carbon emissions.
- **Convenience:** The platform will simplify the process of finding and joining available rides, offering a hassle-free experience for users.

II. Background

2.1 Background

Currently, there are several ride-sharing applications available in the market, such as UberPool and BlaBlaCar, which serve different purposes. However, the "ShareMyRide" application targets a more community-driven approach where drivers offer rides based on real-time availability. It is specifically designed for smaller communities or routes that are not well-served by commercial ride-sharing platforms. This creates a more localized solution for everyday commutes and trips.

2.2 Review on Existing Systems

- UberPool/Lyft Line: Allows users to share a ride with others traveling in a similar direction but has limited availability in smaller cities.
- BlaBlaCar: Focuses on long-distance travel and lacks features for short, city-based commutes.
- The "ShareMyRide" application aims to address these gaps by focusing on both long and short trips, with a simplified interface for route sharing..

III. Material and Methods

To develop the "ShareMyRide" mobile application, the following technologies and methodologies will be used:

- Technology Stack:
 - Frontend: React Native
 - Backend: Node.js, Express.js
 - Database: MongoDB

- Development Methodology: The project will follow an Agile development approach to allow iterative improvements and flexibility. Regular sprints will be conducted to ensure progress is monitored and adjusted as needed.

IV. Expected Results

1. Fully Functional Mobile Application

- The mobile app should enable drivers to easily register, log in, and manage their profiles using a mobile-friendly interface.
- Drivers will be able to post travel routes, specify seat availability, and manage upcoming trips directly through the app.
- Passengers should be able to search for available routes, view detailed route information, and book seats within the app, benefiting from a seamless mobile booking process.
- A streamlined interface should guide users step-by-step from registration to booking, ensuring that each action is accessible with minimal taps.

2. Mobile-Optimized User Interface (UI) and Experience (UX)

- A clean and intuitive mobile interface should be designed, with large buttons, clear icons, and smooth navigation to cater to touch-based interactions.
- Drivers will have a dedicated dashboard for mobile, allowing them to update routes, manage seats, and track upcoming trips effortlessly.
- The passenger's interface will focus on quick ride searches, with intuitive filters and a booking flow designed for mobile screens.
- Special attention will be paid to responsive design, ensuring compatibility with various screen sizes and orientations (portrait and landscape modes).

3. Secure and Efficient Communication System on Mobile

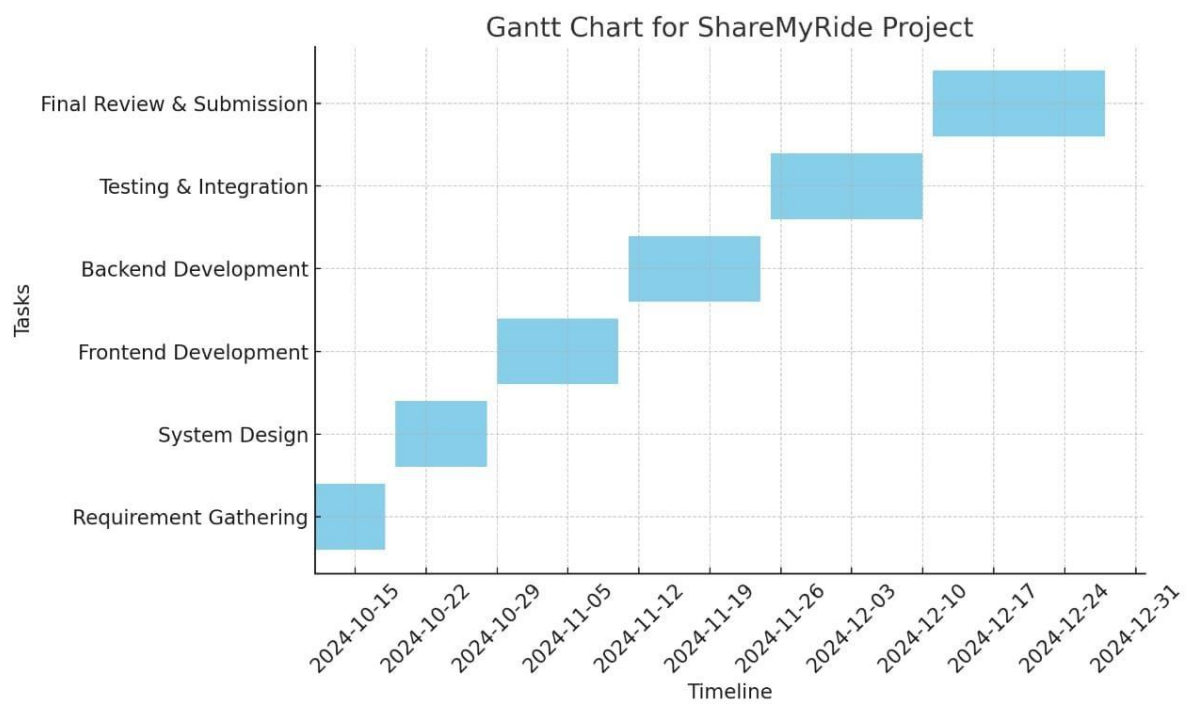
- The app will feature an in-app messaging system that enables secure communication between drivers and passengers once a booking is confirmed.
- Push notifications will be used to alert users about booking confirmations, updates, cancellations, and reminders, ensuring timely information.
- All communications will be encrypted, and sensitive user data will be protected through mobile-specific security features .

4. High-Performance Mobile App with Scalability

- The mobile app should be optimized for performance, ensuring quick load times and a smooth user experience, even on lower-end devices or slow network connections.
- The backend system will handle a growing number of mobile users seamlessly, allowing for future expansion without performance drops.
- Mobile-specific caching mechanisms will be used to enhance performance, minimizing server calls and ensuring faster access to commonly used data.

V. Timeline of the Research

The "ShareMyRide" project is planned to be executed over a 3-month period, starting from 2024-10-09 and ending on 2024-12-31. Below is a detailed breakdown of the project timeline. The Gantt chart will be included to visualize the schedule.



VI. References

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