SE Mini Project-II Report

On

UrbanCommute

Submitted in partial fulfillment of the requirement of
University of Mumbai for the Degree of

Bachelor of Technology
In
Information Technology

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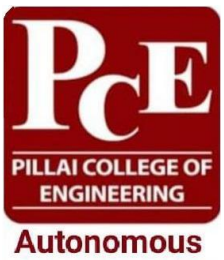

Department of Information Technology

PILLAI COLLEGE OF ENGINEERING

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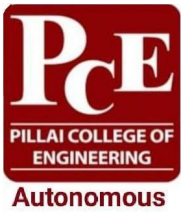
UNIVERSITY OF MUMBAI

Academic Year 2022-23



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CERTIFICATE

This is to certify that the requirements for the SE Mini Project-I report entitled '**UrbanCommute**' have been successfully completed by the following students:

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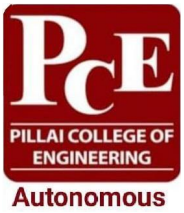

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REPORT APPROVAL

This SE Mini Project-I report entitled "**UrbanCommute**" by **Pranav Rajeevan, Smruti Todkar, Samarth Patill, and Piyush Pandey** is approved for the degree of **Bachelor of Technology** in **Information Technology**.

Examiners:

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2. _____

Supervisors:

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Chairman:

1. _____

Date:

Place:

Declaration

We declare that this written submission for SE Mini Project-I Report Declaration entitled "**UrbanCommute**" represents our ideas in our own words and where others' ideas or words have been included. We have adequately cited and referenced the original sources. We also declared that we have adhere to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any ideas / data / fact / source in our submission. We understand that any violation of the above will cause disciplinary action by the institute and also evoke penal action from the sources which have thus not been properly cited or from whom paper permission has not been taken when needed.

Project Group Members:

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Samarth Patil: _____

Piyush Pandey: _____

Date:

Place:

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Abstract

Transportation is an advocate, if not the judge to our economy. With the forting of technology deep into the roots of our culture, it, the Transportation system, has evolved finding unique ways to commute. After globalization in the 20th century, Internet exempted all the possible flaws in terms of data transfer.

Data is everywhere, clustering around, passing and covering all the extents of our life in binary codes. Data is a powerful reference, mapping our routes and preparing our flights, directing our vehicles and so on.

Though a several many reports, apps and website cover these data granting an useful UI to our journey, there is yet a global generalization to be done useful in every prospect of earth. The contour of our app goals to provide a proficient method to transport between any chosen destination and pick-up point. It is a well known fact that the transportation errors fundamentally cripples the nature of being and hence our app would also inform every Individual viewer's actual cost of every travel.

The route-choosing being done on the following aspects:

1) Budget 2) Time

The suggestion being following:

1) Public transportation 2) Private companies

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Chapter 1

INTRODUCTION

1.1 Fundamentals

UrbanCommute is a mobile application that aims to simplify the process of planning trips and commuting within urban areas. The app is designed to address the issue of using multiple apps to plan a trip, such as checking the time and schedule of public transport, booking a ride-hailing service, and estimating the cost of the trip. UrbanCommute offers an integrated platform that enables users to set their start and destination, select the mode of travel, and view relevant trip data, such as the total time, fare, and route.

1.2 Objectives

The main objective of UrbanCommute is to provide a one-stop solution for all transportation-related needs. With the increasing demand for seamless mobility solutions, the app aims to simplify the process of planning a trip and provide a hassle-free experience to users.

Objectives of the app include:

1. Simplify the process of planning daily commutes for users.
2. Provide accurate and up-to-date information on various modes of transportation.
3. Offer a seamless booking experience for cabs, trains, buses, and other modes of transportation.
4. Enhance the overall travel experience for users.

1.3 Scope

The scope for UrbanCommute is significant as urbanization continues to grow around the world. With more people living and working in cities, there is a growing need for convenient and efficient transportation options. UrbanCommute has the potential to address this need by providing a one-stop-shop platform for planning and booking trips within urban areas.

In addition to helping individual commuters, UrbanCommute could also benefit employers and organizations by offering a centralized platform for managing employee commuting arrangements. This could include features such as group bookings, expense management, and reporting.

The market for urban mobility solutions is also growing rapidly, with increasing demand for ride-sharing, bike-sharing, and other forms of shared transportation. UrbanCommute has the potential to integrate with these services and provide users with a seamless and integrated experience.

Overall, the scope for UrbanCommute is significant, and the app has the potential to become a leading platform for urban mobility in the future.

1.4 Organization of Project Report

Title: "UrbanCommute: An Integrated Platform for Simplifying Urban Commuting"

Introduction (Chapter 1):

Fundamental terms used in the project

Motivation for the project

Outline of the objectives of the report

Litrature Survey (Chapter 2):

Review of relevant techniques in the literature systems

Pros and cons of each technique.

Project Implementation (Chapter 3):

Project discription and user flow

Project Inputs And Outputs (Chapter 4):

Project inputs and output screenshots

Summary & Scope (Chapter 5):

Summary of the repor and future scopet

Chapter 2

Literature Survey

Table 2.1 Litrature Survey

Title	**Executables/Takeaways**
The Urban Commute: A Summary [1]	1. Cities in India need to focus on clean and low-carbon mobility to reduce their carbon footprint and energy consumption from urban commuting. 2. India's growing dependence on personal vehicles for urban commuting can lead to irreversible negative trends and damage.
India's growing dependence on personal vehicles for urban commuting can lead to irreversible negative trends and damage. [2]	According to the Anatomy of Work Index 2021, knowledge workers switch between 10 apps 25 times per day, leading to missed deadlines, inefficiencies, and duplicated efforts. To combat this, organizations should embrace a purpose-built work management platform with a robust integrations ecosystem to reduce app switching and increase efficiency. Work management platforms that integrate with a team's most important apps will be crucial for maintaining clarity, increasing alignment, and accelerating work.
Designing an app for a travel agency — a UX case study [3]	The case study outlines the design of an app for Kuoni, a travel agency that creates tailor-made trips. The objective was to design a post-log-in app experience that allows customers to view and manage a quote proposed by a personal travel expert, and to view and manage trips that have been booked. The UX/UI designer used various research methods, including surveys, to develop personas, empathy maps, and a product feature roadmap, and created a high-fidelity prototype using Figma and Sketch.
Sustainable Transport [4]	Sustainable transport is transport that takes into account impact on the environment and resource management. The source of energy the fuel comes from, the mode/type of transport, and infrastructure to support the transport are the main factors involved in assessing sustainable transport. Sustainable transport must also consider social, economic, and practical and technical considerations. The main types of sustainable transport include land, air, and water transport, each with its own pros and cons.

Chapter 3

Project Implementation

3.1 Overview

The proposed system for UrbanCommute is a mobile application that aims to simplify the process of planning trips and commuting within urban areas. The application provides an integrated platform that enables users to set their start and destination, select the mode of travel, and view relevant trip data such as the total time, fare, and route.

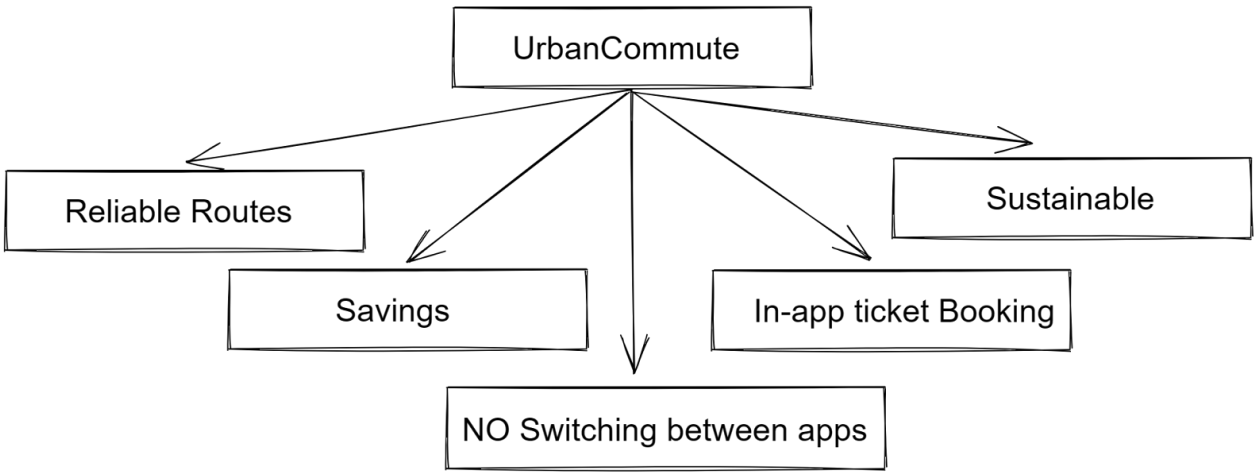

Figure 3.1 Benifits of UrbanCommute

The proposed system utilizes several techniques to achieve its objectives. One of the key techniques used is route planning, which involves identifying the optimal route for a given trip.

Real-time data analysis is another technique used in the proposed system. The application collects and analyzes data in real-time to provide users with up-to-date information on their trips. This includes real-time information on public transport schedules, delays, and disruptions.

To provide users with a seamless experience, the proposed system also includes features such as booking ride-hailing services and estimating the cost of the trip. Users can book ride-hailing services directly from the application and view the estimated fare for their trip.

Overall, the proposed system aims to simplify the process of planning trips and commuting within urban areas by providing an integrated platform that combines multiple features such as route

planning, real-time data analysis, and ride-hailing services. The system provides users with up-to-date information and enables them to make informed decisions about their travel plans, ultimately saving time and effort.

3.2 User Flow in UrbanCommute

1. **User Registration/Login**: Users will have to register themselves with the app to use its services. They can register by providing their email and password or by using their Google or Facebook accounts. Once registered, users can log in to the app using their credentials.
2. **Entering Source and Destination**: After logging in, users can enter their source and destination locations. They can do this by typing in the address or by using the app's auto-suggestion feature to select the locations.
3. **Estimating Travel Charges**: After entering the source and destination, the app will display estimated travel charges for all available modes of travel. The app will retrieve the latest fare data for public transport modes and use a fare estimator API for ride-hailing services.
4. **Selecting Mode of Travel:** Users can then select the mode of travel that is most convenient for them. The app will provide the user with multiple options, including public transport, ride-hailing, and personal vehicles.
    a. **Booking Train Tickets:** If the user chooses to travel by train, the app will display a list of available trains. The user can select a train and then proceed to a booking form based on their selected class and details.
    b. **Booking a Cab:** If the user chooses to travel by cab, the app will prompt them to select the type of cab they want to book. They can choose from a range of options, including economy, premium, and luxury. The app will use the Google Maps API to provide real-time ride-hailing services and estimate the fare for the user's selected cab type.
5. **Payment and Confirmation:** Once the booking is complete, the app will display a summary of the trip, including the fare and other details. Users can then pay for their trip within the app using a payment gateway integration. Finally, the app will provide a confirmation of the booking and any other relevant details, such as the driver's name, vehicle number, and arrival time.

Chapter 4

Project Inputs and Outputs

The mobile application project was developed using Flutter as the development framework, Firebase for authentication and database storage, and Google Maps API for location and routing services. Flutter provided a seamless user interface and experience across both Android and iOS platforms. Firebase offered secure and reliable user authentication and database storage, allowing users to create accounts and store relevant data. Google Maps API enabled the incorporation of location-based services such as real-time routing, traffic updates, and customized mapping features into the app. The resulting application is a fully functional and user-friendly platform for trip planning and commuting within urban areas.

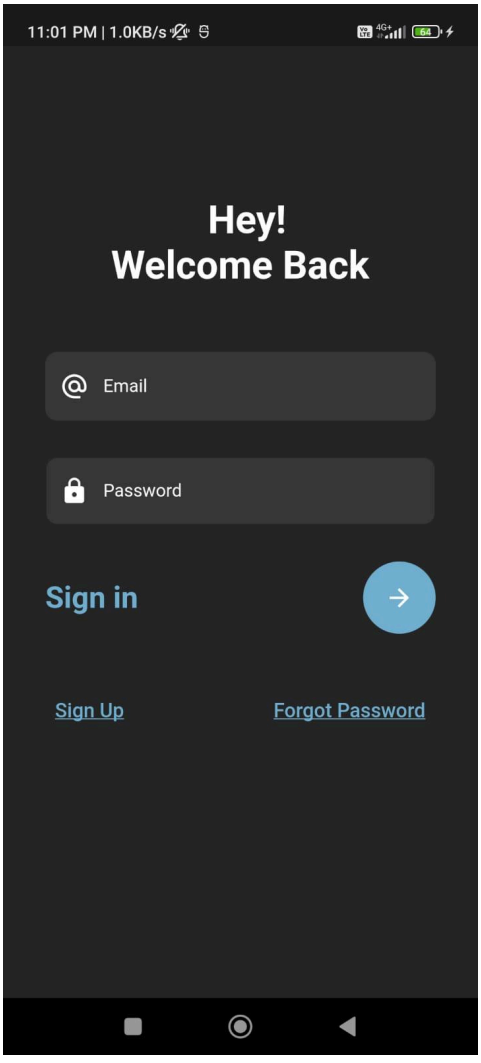

Figure 4.1 Login Screen

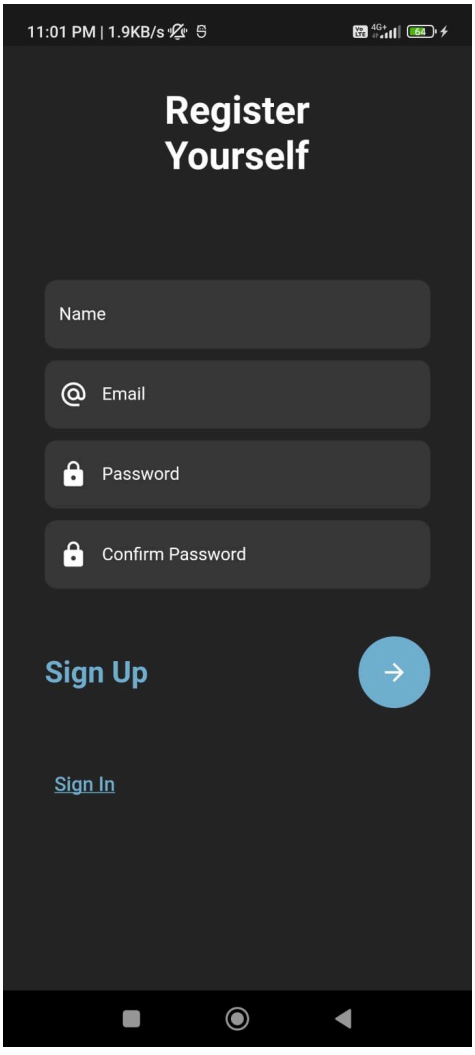

Figure 4.2 Registration Screen

Figure 4.3 Main Screen

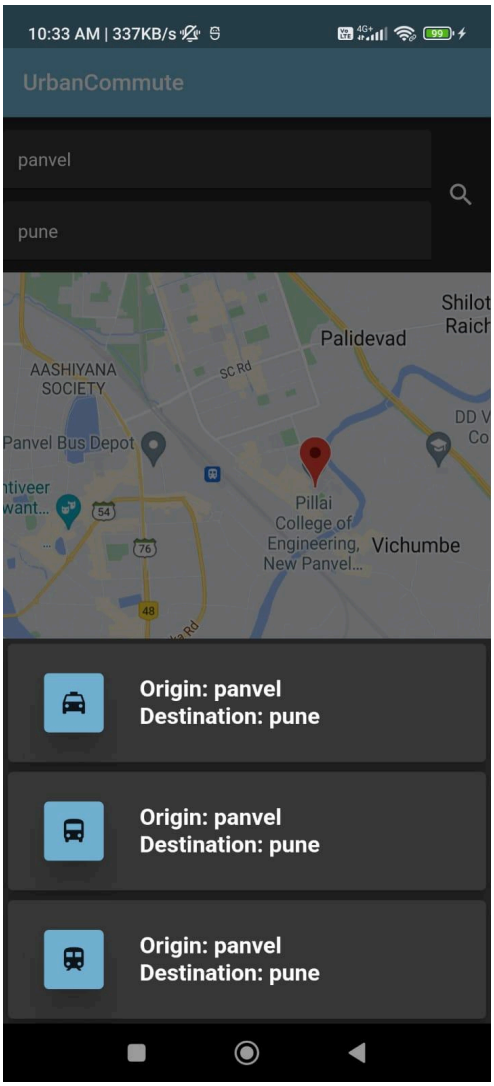

Figure 4.4 Select Mode of Travel

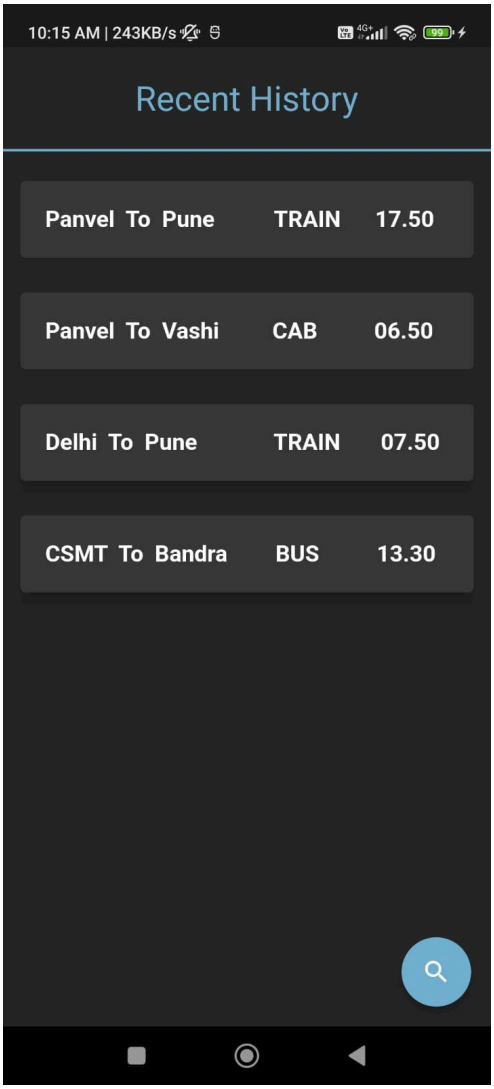

Figure 4.5 Recent Search History

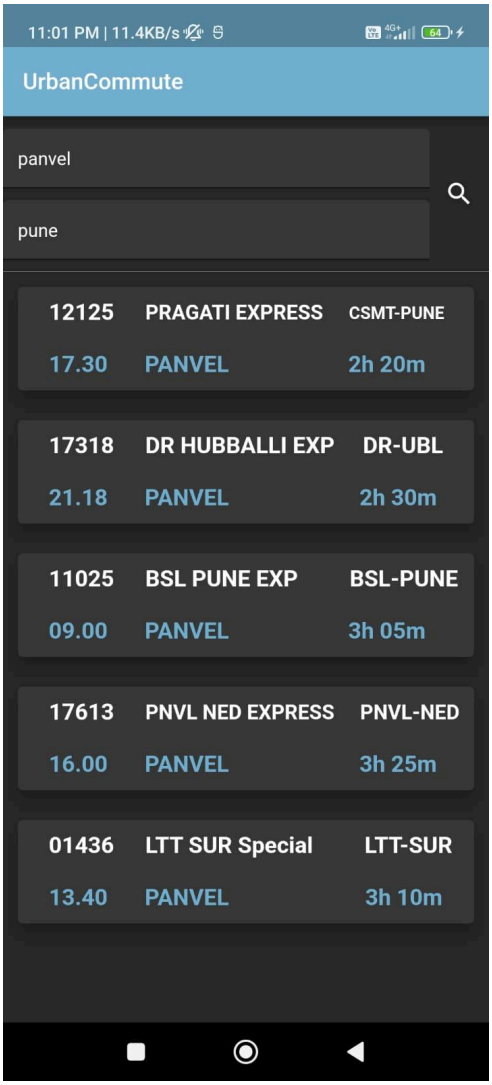

Figure 4.6 Availablity of Trains

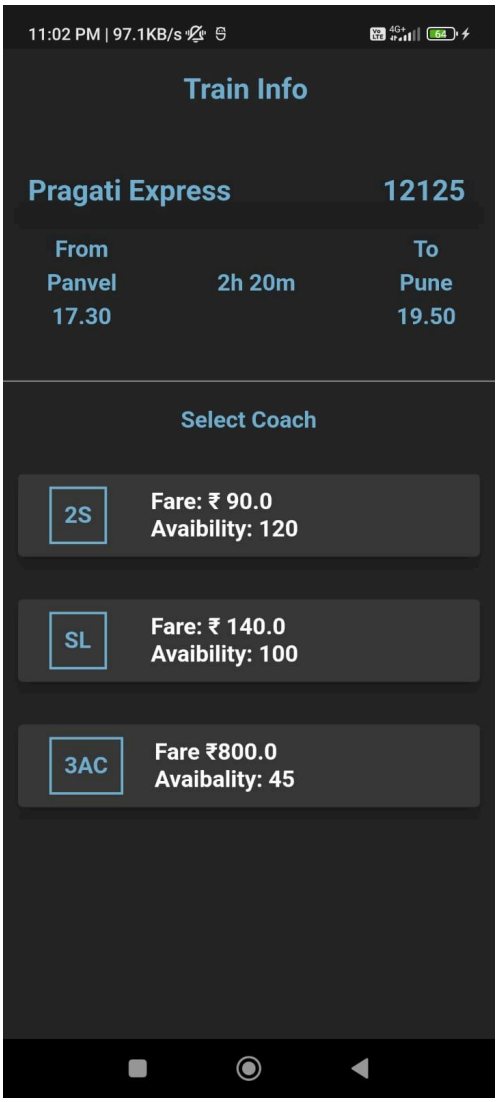

Figure 4.7 Train Info

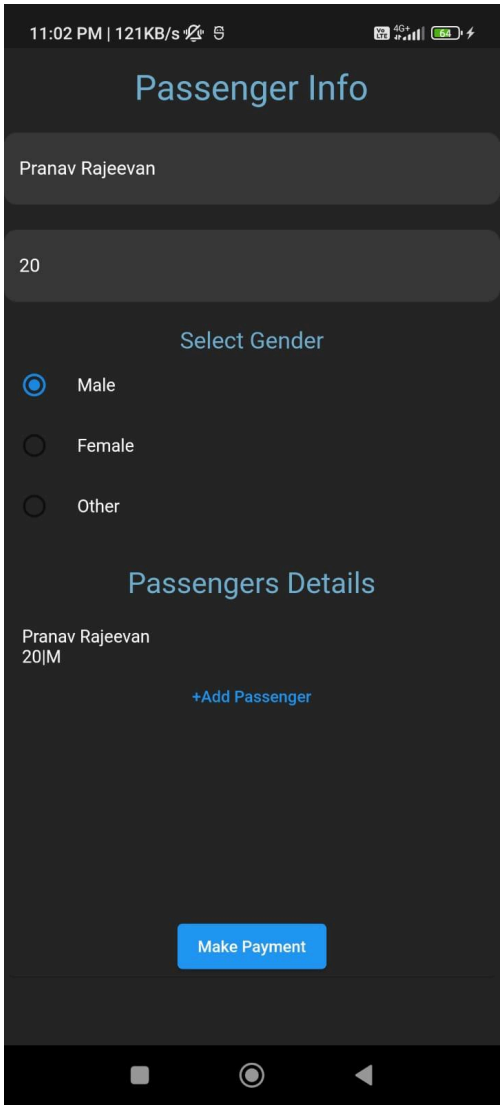

Figure 4.8 Train Booking

Chapter 5

Summary & Future Scope

5.1 Summary

UrbanCommute is a comprehensive mobile application designed to simplify the process of commuting within urban areas. The app integrates various trip planning and booking features into a single platform, including checking transit schedules, booking ride-hailing services, and estimating trip costs. Users can input their start and destination points, select their preferred mode of transportation, and view real-time schedules and estimated travel times. The app also provides users with different route options based on their preferences and the most efficient routes available.

UrbanCommute offers features such as fare estimates, ride-sharing options, and booking capabilities for ride-hailing services, making it easier for users to compare and choose the most cost-effective transportation options. Users can also customize the app's features based on individual preferences, such as setting their preferred mode of transportation and filtering search results by factors such as price, distance, and travel time.

The app's integration with various ride-hailing services and public transit systems provides users with a wider range of transportation options. The app can also provide personalized recommendations based on the user's frequently visited locations, travel history, and preferred travel modes. Additionally, the app can provide real-time traffic updates and route recommendations to avoid traffic congestion or roadblocks, helping users save time and arrive at their destination on time.

Overall, UrbanCommute has the potential to revolutionize the urban transportation industry by providing a one-stop solution for trip planning and booking. The app's ability to integrate multiple travel modes, offer personalized recommendations, and provide real-time updates can help users make informed decisions and save time and money while commuting. With its comprehensive features and user-friendly interface, UrbanCommute is an excellent solution for urban commuters looking for an all-in-one platform for their travel planning and booking needs.

5.2 Future Scope

In addition to the core features of the proposed UrbanCommute system, there are several additional features that could be added to further improve the user experience and functionality of the application.

Multi-language support: To cater to users from different regions and backgrounds, the application could be enhanced to support multiple languages. This would make the application more accessible to a wider audience and improve user engagement.

Voice-based navigation: To make the application more user-friendly and accessible for users on the go, voice-based navigation could be added to the application. This would enable users to navigate the application and plan their trips using voice commands.

Parking information: For users who travel by car, the application could include information on parking facilities near their destination. This would enable users to plan their trips more effectively and avoid parking-related issues.

In-app payment: To make the booking and payment process more convenient, the application could include an in-app payment system. This would enable users to book ride-hailing services and pay for their trips directly through the application, without having to use external payment systems.

Social sharing: To increase user engagement and improve the user experience, the application could include social sharing features that enable users to share their trip details with friends and family through social media platforms. This would enable users to share their travel experiences and recommendations with others, and could help to increase user engagement with the application.

By incorporating these additional features into the proposed UrbanCommute system, the application could be further improved and enhanced to provide users with a more comprehensive and engaging experience.

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