Final Year Project Final Draft

Project Title:

Vdrive Ride Sharing App

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DECLARATION

I hereby declare that the work has been done by myself to fulfill the requirement of the BS (Computer Science) and no portion of the work contained in this report has been submitted in support of any application for any other degree or qualification of this or any other university or institute of learning. I hereby further declare that in the event of any infringement of the provision of the Act whether knowingly or unknowingly the university shall not be liable for the same in any manner whatsoever and undertake to indemnify and keep the university indemnified against all such claims and actions.

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Finally, our heartfelt gratitude goes out to the entire IQRA University community. The collective support and camaraderie of our colleagues have been a source of strength during challenging time s. We want to express our thanks for their thoughtful suggestions and encouraging words, which h ave propelled us forward and transformed our project from an idea into a tangible reality. In essen ce, the success of this project is a result of the collaborative efforts and support from our mentors, teachers, and fellow students at IQRA University.

ABSTRACT

The proposed of Vdrive application aims to provide a comprehensive and user-friendly solution for di verse mobility needs, inspired by the successful models of ride-sharing platforms like Uber and Caree m. This multifunctional application is designed with three key features: Ride Sharing, Road Assistanc e, and Rental Service.

Ride Sharing: The core functionality of the application revolves around Ride Sharing, allowing users to seamlessly connect with nearby drivers for shared transportation. This feature focuses on optimizi ng travel experiences, reducing costs, and contributing to a more sustainable and efficient transportati onsystem. Users can easily request rides, choose from various vehicle options, and share their journey s with others heading in the same direction.

Road Assistance: In addition to ride-sharing, our application incorporates a Road Assistance feature t o address unforeseen challenges on the road. Users can access real-time support for vehicle breakdow ns, flat tires, or other roadside emergencies. This feature aims to enhance user safety and provide a qu ick response mechanism, ensuring a reliable and secure travel experience.

Rental Service: Recognizing the varied mobility needs of users, the application introduces a Rental S ervice feature, allowing individuals to rent vehicles for a specific duration. Whether it's for a short trip , a weekend getaway, or an extended period, users can choose from a fleet of vehicles available for re nt.This feature provides flexibility and convenience, catering to diverse travel requirements with very less and affordable cost.

The VDrive Application is envisioned to be a one-stop solution for individuals seeking efficient, relia ble, and flexible transportation options. The integration of Ride Sharing, Road Assistance, and Rental Service features aims to offer a holistic approach to mobility, addressing the evolving needs of users i n a rapidly changing urban landscape. These abstract outlines the key features and objectives of the pr oposed application, paving the way for a comprehensive and innovative solution in the realm of mode rn transportation.

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CHAPTER - 01

1.1 INTRODUCTION:

Introducing VDrive, an innovative mobile application designed to cater to your transportation needs with the convenience and efficiency of popular services like Uber and Careem. VDrive encompasses three key features, making it your go-to app for a seamless and reliable travel ex perience..

At VDrive, we empathize with the struggles encountered by travelers when navigating throug hunfamiliar cities. That's why we've crafted an app specifically tailored to simplify your ride-s haring experience in various parts of Karachi. Through our intuitive interface, effortlessly disc over available rides, explore user reviews, and access detailed information about each driver a nd vehicle. Your journey with VDrive ensures a seamless and convenient ride-sharing experie nce,putting you in control of your travels in Karachi.

Through comprehensive surveys, we guarantee that our ride-sharing app delivers the most genuine and trustworthy information to our users. Our commitment to authenticity ensures a seam less and secure ride-sharing experience, putting your travel needs first. Welco me to VDrive – where every journey is a trusted adventure.

1.2 PROBLEM STATEMENT:

We encounter numerous challenges in our daily lives, and one of the biggest issues we face is the lack of proper transportation in our country. This problem has caused difficulties for many individuals, including those in urgent need of a car or taxi services. One significant concern specifically faced by residents of Karachi is the absence of a reliable transport service. While there are occasional options like Uber and Careem. This scarcity of transportation means that residents often struggle to find a ride, especially when they need to go to their destination.

A considerable portion of Karachi population does not own private vehicles, and if a family does have a car, it is usually being used by someone else for work purposes. In situations where someone experiences a flat tire or encounters mechanical issues with their car, it becomes even more challenging to find a nearby workshop for assistance.

1.3 MOTIVATIONS:

In light of these circumstances, we are determined to offer solutions to address these problems. Our plan is to develop a mobile application that provides a cab service catering specifically to the residence of Karachi and specially the resident of Bahria Town. This app aims to encourage both local residents and nearby individuals to offer their services through the platform. With this app, if someone experiences a car-related issue, such as a flat tire or mechanical trouble, the app will notify nearby cars and individuals who are registered on the platform. They can communicate with the person in need in real time and offer their assistance. Afterward, the person receiving help will pay for the services provided.

Moreover, if someone requires a rental car, they can request it through the app for a specified time period, and a driver can accept the request. Essentially, this single app will encompass all the necessary functions to assist people in various situations and prove beneficial to the community as a whole.

1.4 OBJECTIVE:

1. **Implement SOS Feature:** Integrate and activate the SOS feature in our cab and rental s ervices to ensure customer safety. Enable quick access to emergency services in the eve nt of an accident, tire puncture, or any potential security concerns.

2. **Introduce Rental Service:** Launch a comprehensive rental service to accommodate cus tomers requiring cars for extended durations, offering flexible options for daily, weekly, or monthly rentals.

3. **Ensure Affordable Pricing:** Establish an affordable and transparent pricing model tail ored to meet the financial needs of the residents. Eliminate hidden charges and explore advertising as an additional revenue stream.

4. **Develop User-friendly Interface:** Create a user-friendly interface for our app, ensuring that it caters to both tech-savvy and non-tech-savvy customers. Facilitate easy booking for rides or rental cars to enhance overall user experience.

5. **Implement Fleet Management System:** Develop and implement an effective fleet ma nagement system to guarantee the cleanliness, maintenance, and safety of our vehicles. Ensure a constant availability of cars for bookings to meet customer demand.

6. **Create Part-Time Employment Opportunities:** Introduce a driver sign-up program ta rgeting individuals in Bahria who possess unused cars and are seeking part-time employ ment. Provide them with an opportunity to earn extra income by joining our network as drivers.

1.5 STRUCTURE OF THE REPORT:

Chapter 2: Technology Background

This chapter outlines a literature study and includes example of related application that use the same technology base for solving similar problems.

Chapter 3: Requirements & Technology

This chapter detailed the project's functional, non-functional .and hardware requires and also how to manage to finish it on schedule.

Chapter 4: Project Plan & Initial Design

This chapter describe the project's overall information, system features and system's details design, which can assist developers in implementing the system.

Chapter 5: Project Design & Development

In this chapter, prototype and back-end design are discussed. It also discusses the external libraries are mandatory for the project. Some screenshots of the project will be attached to the chapter.

Chapter 6: Testing

In this chapter, performing various testing procedures, such as usability testing, compatibility testing, functional testing, etc. Also, building test cases for testing various front-end and back-end components is another thing to do.

Chapter 7: Conclusion

The whole project comes to a close in this chapter. It talks about the project's difficulties and system limitations. It also about how the project will be improved in the future. This report will come to a close with chapter 7.

CHAPTER - 02

2.1 INTRODUCTION:

In the ever-evolving landscape of urban mobility, the convergence of technology and transportation has paved the way for innovative solutions to address the challenges faced by commuters and travelers. Among these solutions, mobile applications have emerged as powerful tools, revolutionizing the way people access and utilize transportation services. The aim of this final year project is to design, develop, and evaluate a comprehensive mobile application tailored to meet the diverse needs of users in our city realms of car booking, rental, and road assistance.

The proliferation of smartphones and the ubiquity of mobile internet connectivity have fundamentally transformed the way individuals navigate through their daily routines. In response to this paradigm shift, the transportation industry has witnessed a surge in demand for on-demand car booking and rental services, offering users unparalleled flexibility, convenience, and efficiency in their travel endeavors. Moreover, the need for reliable road assistance services has become increasingly paramount, as motorists seek timely support and guidance in the event of emergencies or unforeseen circumstances on the road.

Against this backdrop, the development of an integrated mobile application capable of seamlessly bridging the gap between car booking, rental, and road assistance services represents a pivotal endeavor in the realm of urban mobility. By harnessing the power of mobile technology, this project endeavors to empower users with a one-stop solution that streamlines the process of accessing transportation services, enhances the overall travel experience, and fosters a sense of safety and security on the road.

2.2 Ethical & Professional Considerations:

Furthermore, this project will also explore the ethical and professional considerations that underpin the development and deployment of mobile applications in the transportation sector. From ensuring the privacy and security of user data to promoting environmentally sustainable practices and adhering to regulatory frameworks, this project will strive to uphold the highest standards of integrity, transparency, and social responsibility

2.3 BACKGROUND TECHNOLOGY:

Our VDrive Application is designed to cater specifically to the needs of local users and drivers in Karachi, offering a comprehensive solution for accessible and reliable transportation within the city. With all-encompassing features consolidated into a single app, VDrive ensures a seamless and efficient experience for both passengers and drivers alike. Say goodbye to the hassle of navigating through multiple apps – VDrive brings everything you need for dependable transportation right to your fingertips in Karachi.

Technology Used:

In developing our application, we utilized a combination of technologies to ensure a seamless and efficient user experience. We collected authentic data through surveys and implemented the following technologies:

2.2.1 Dart: We chose the It enables you to develop cross-platform applications using Flutter, opening up mobile, web, and desktop development opportunities, ensuring compatibility with both Android and iOS devices.

2.2.2 FireBase Database: To store and manage the information, we integrated Firebase Database. This Realtime database technology enables us to manage records properly and ensures the availability of up-to-date data for users.

2.2.3 Android Studio: It facilitates the seamless integration of various features, including API calls for actions such as viewing all listings, accessing listing details, providing feedback, and managing user login and sign-up functionalities.

2.2.4 Google Maps API: The Google Maps API was utilized to integrate maps functionality into our application. Users can easily locate drivers with the help of interactive maps and directions provided by this API.

2.2.5 Social Media Platforms: We leveraged popular social media platforms such as Facebook, Instagram, YouTube, and TikTok to promote our application. Through these channels, we aimed to increase awareness, engage with potential users, and encourage positive word-of-mouth.

2.4 LITERATURE REVIEW:

List of competitors:

1)Uber

2)Indrive

3)Careem

Uber:

Uber is a transportation technology company that operates a smartphone application connecti ng passengers with drivers of vehicles for hire. Users can request rides or deliveries through th e Uber app, track the progress of their request in real-time, and make payments.

Working Principle:

- Ride booking
- Navigation
- Geolocation

Uber Snapshot:

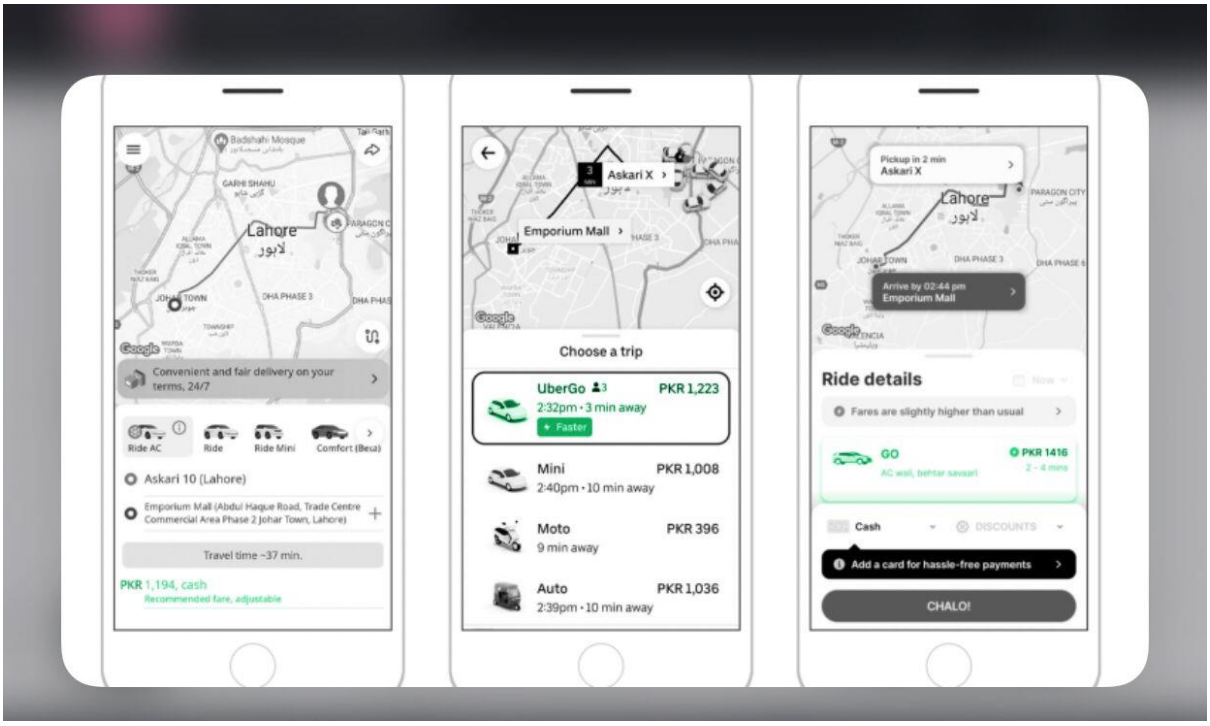


Figure 1 Google Map Uber

Indrive::

InDriver is a ride-hailing app that promotes mobility in the emerging world by helping customers and drivers to negotiate a fair price.

Working Principle:

- negotiations
- ride booking
- navigation
- geolocation

Indrive Snapshot:

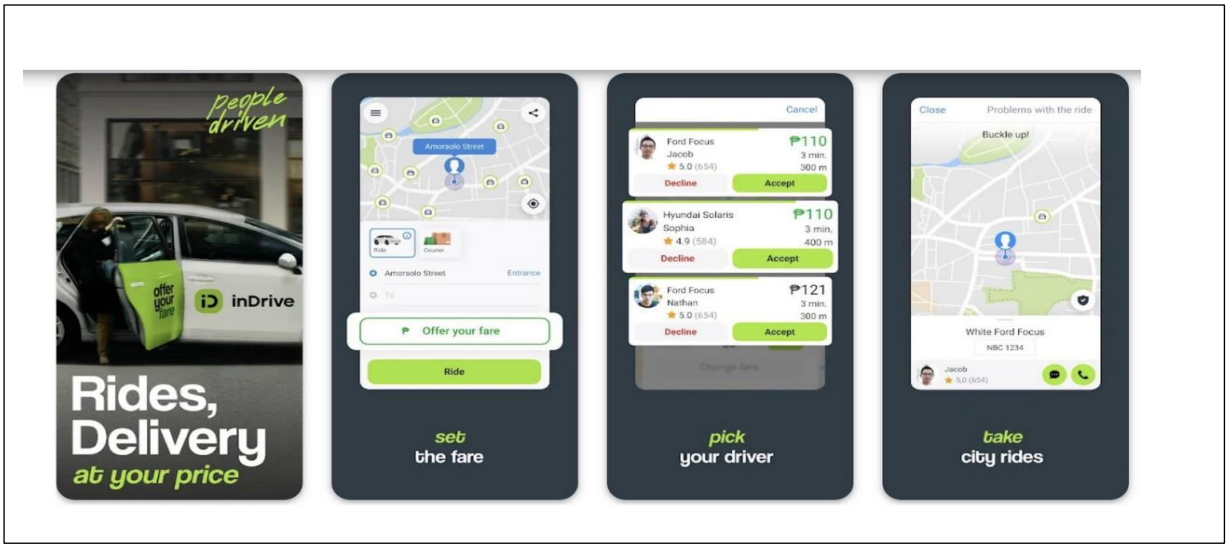


Figure 2 InDrive Screens

Careem:

Similar to uber having the same features and working principles.

Summary:
OpenStreetMap is a free, open-source project editable map of the whole world that is being built by volunteers largely from scratch and released with an open-content license. The OpenStreetMap License allows free (or almost free) access to our map images and all of our underlying map data.

Working Principle:
- Navigation
- Street View
- Liability
- Visual Contrast

Careem Snapshot:

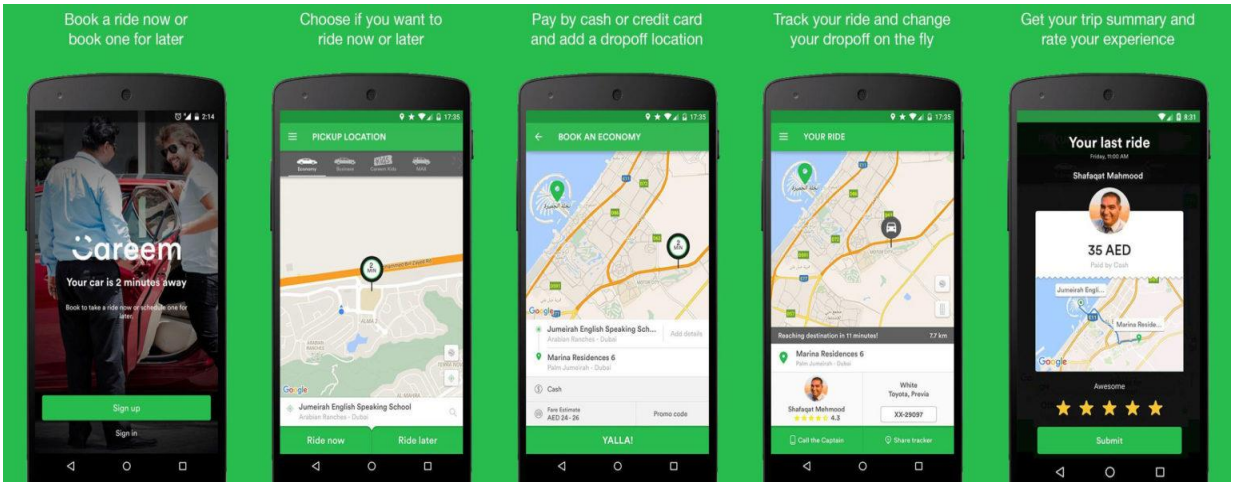


Figure 3 Careem Screens

Comparative Analysis:

Table 1. Comparative Analysis

Product	Key Feature	Platform	Free/Paid Mobile Apps
Careem	An application developed for ride sahrin g delivery and also for food stuff.	Mobile (Android & IOS)	Free
InDrive	InDrive (previously known as inDriver), is an international ride-hailing service wi th more than 200 million downloads ope rating in 700 cities in more than 45 count ries. The uniqueness is bargining of the f are.	Mobile (Android & IOS)	Free
Uber	Uber is known for its technological inno vations, including dynamic pricing (surg e pricing) that optimizes fares based on d emand, as well as a user-friendly mobile app with features like real-time tracking and seamless payment options. These in novations enhance the overall user exper ience.	Mobile (Android & IOS)	Free

Summary:

In this chapter, we discussed briefly about our project, the need of the project and the importance of the project. We also focused on the technology background of our project, and described in detailed what sort of technology stack we are going to use to implement in order to complete the project. We thoroughly described the development technology for the application, the database, and the server end of the project. We also discussed about different competitors available in the market, and did a detail comparative analysis in order to create a perfect USP for our project. So that our project reaches to maximum audience possible.

CHAPTER - 03

3.1 INTRODUCTION:

In this chapter, we delve into the extensive effort invested in the development of our project in accordance with the meticulously crafted project plan. Our focus here is to provide a comprehensive understanding of the project's processes and objectives. The project plan has been strategically devised utilizing a detailed Gantt chart, allocating specific time periods to each activity based on its complexity. Consequently, the duration of workdays may vary. However, challenges encountered during project implementation will also be addressed in this chapter, shedding light on the hurdles faced. Moreover, we will delve into the intricate details of the project's Functional, Non-Functional, and IoT hardware device requirements. Functional requirements are accorded utmost importance, being integral to fulfilling the basic objectives of the project. Conversely, non-functional requirements, such as settings and feedback mechanisms, have been meticulously planned to ensure seamless operation and user satisfaction.

3.2 GANTT CHART:

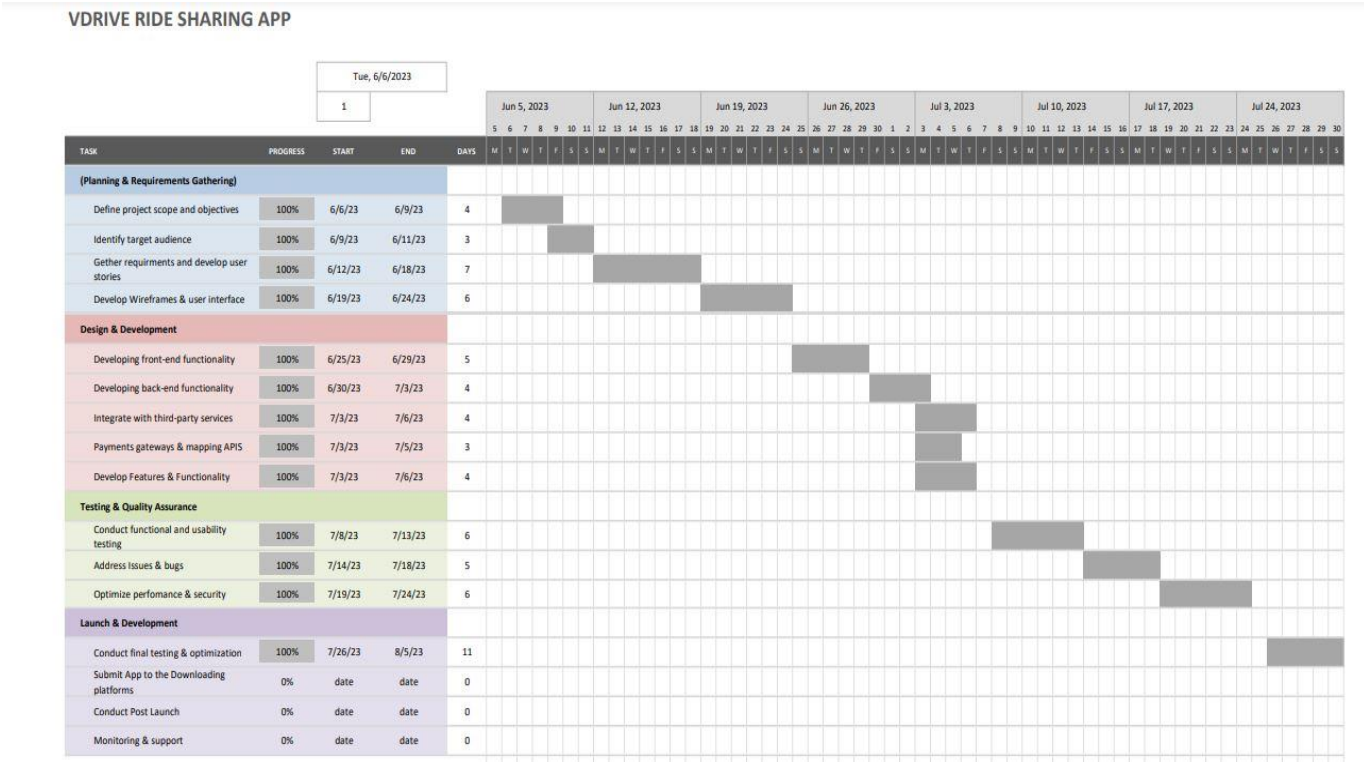


Figure 4 Gantt Chart

3.3 Functional Requirements:

User Registration and Authentication: The app must allow users to register and login using their email or social media accounts.

Booking Service: The app should allow users to book a taxi for an immediate ride or pre-book for a later time. The user should be able to select the pick-up and drop-off location, and the app should provide an estimated fare and duration of the ride.

Rental Service: The app should also allow users to book a taxi for a longer duration, such as for an entire day or multiple days. The user should be able to select the pick-up and drop-off location, along with the start and end time of the rental period.

SOS Service: The app should provide a dedicated SOS button that can be used in an emergency situation. Once pressed, the app should immediately notify the emergency services and provide the user's location.

Payment System: The app must have a secure payment system that allows users to pay for their rides using cash

Rating and Feedback System: The app should allow users to rate their ride experience and provide feedback on the driver and the overall service. This will help improve the quality of the service and help other users make informed decisions.

GPS Tracking: The app must have a GPS tracking system that allows users to track their ride in real-time. This will also help the app keep track of the driver's location and ensure the safety of the user.

Driver Management: The app should have a driver management system that allows drivers to register and verify their identity. The app should also have a rating system for drivers to ensure that only the best drivers are available on the platform.

3.4 NON-FUNCTIONAL REQIREMENTS:

Performance:

The app must have a fast and reliable response time to user requests, with minimal latency.The app should be able to handle a large number of simultaneous users and requests without any performance degradation.The app must be able to handle unexpected spikes in traffic without crashing or slowing down.

Usability:

The app must have a user-friendly interface that is easy to navigate and understand.The app should be accessible to users with disabilities, such as those who are visually impaired or have limited mobility.The app should support multiple languages and localizations to cater to a global user base.

Security:

The app must have a robust security system that protects user data and prevents unauthorized access.

The app should use encryption to protect sensitive user information, such as payment details and location data.The app should have a backup and recovery system to ensure that user data is not lost in case of a system failure.

Reliability:

The app must be available 24/7 without any downtime for maintenance or upgrades.The app should have a monitoring and logging system to detect and fix any errors or issues that may arise.The app should have a disaster recovery plan in case of a system failure or natural disaster.

3.5. HARDWARE REQUIREMENTS:

There is no need of hardware in our project since our project is software based (i.e. Android Application).

SUMMARY:

In this chapter, a detailed Project Plan, Functional, Non-Functional requirements and other planning mechanisms are discussed in detail that will be required in our project. We have also mentioned an introduction regarding our mobile application how we can perform our task so we make a milestone chart in this first we describe our task week wise in summary activity and then we make a Gantt chart according to summary activity.

CHAPTER - 04

4.1 INTRODUCTION:

In this chapter, we are going to discuss about the design and specification of our project, in which we elaborate our project deeply with the help of diagrams like we gather all the information related to our application then set the framework to show the flow of the application so that the application flow will be easily understandable. We have used different diagrams for the complete flow of our application to make it understandable to user. In this phase, we also discussing the Workbreakdowns structure in detailed as according to our application. These diagrams show the system work flow and specification of our application to make it user friendly. It also shows how every screen work flow is working with the help of diagram. After all information has been gathered and design has been created so now, the development has started in order to make sure that it is able to be used by user. The purpose for making the ERD diagram to guide the direction of our system that how we perform each and every thing and also show the flow of our application specifically like in implementation. In detail this will provide a clear understanding of the overall coding of the system for the people who are on user bases. Each diagram is detail with all functional input and output of the system, making sure that the system runs smoothly

4.2 Work Breakdown Structure:

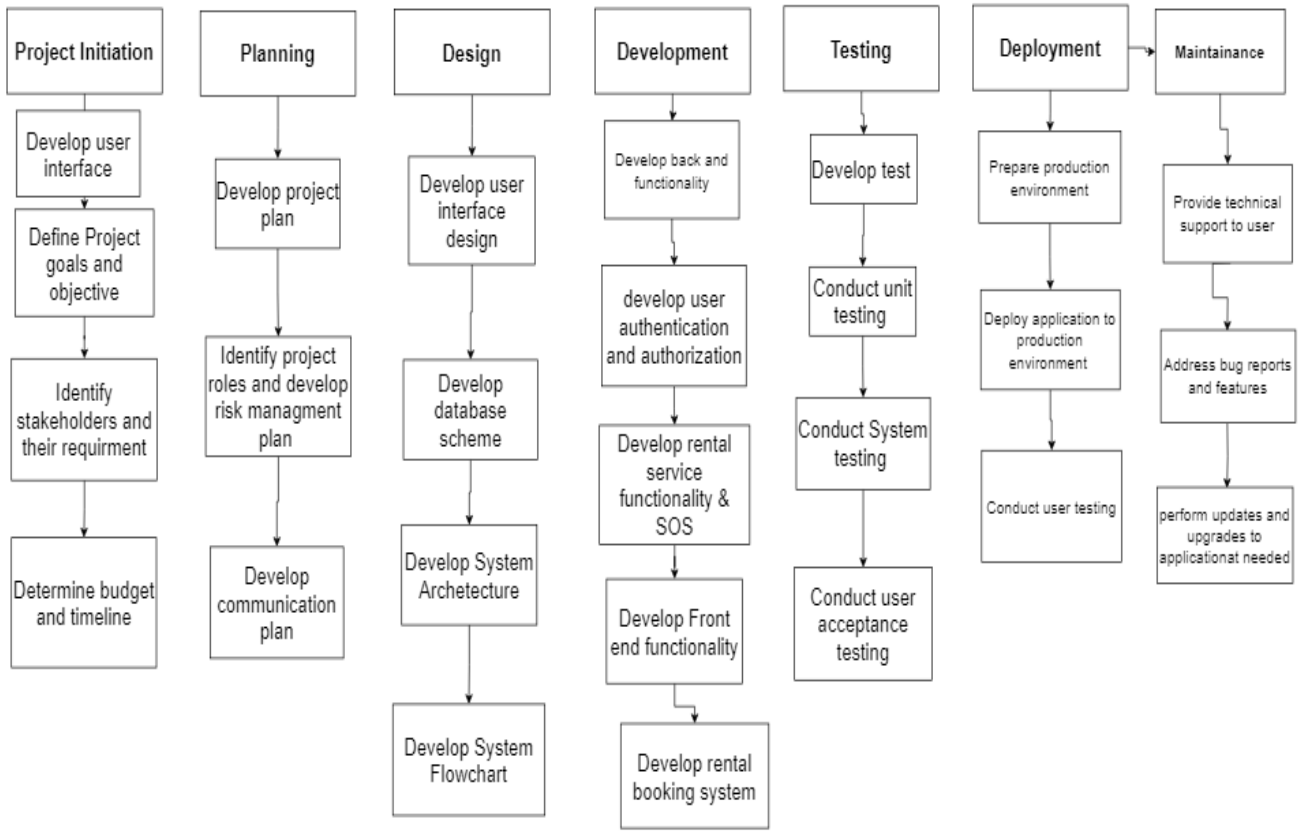


Figure 5 WBS

4.3 Design Philosophy:

1. **User-Centric Approach**

VDrive adopts a user-centric approach in its design, ensuring a seamless and intuitive experience for both passengers and drivers. The user interface is crafted to be visually appealing and easy to navigate, facilitating smooth interactions and enhancing overall user satisfaction.

1. **Real-Time Data Synchronization**

One of the key design principles of VDrive is the use of Firebase for real-time data synchronization. This ensures that users receive instant updates on car availability, SOS alerts, and taxi bookings. Real-time synchronization also allows for efficient handling of reservations, emergency alerts, and driver availability.

4.4 ERD Diagram:

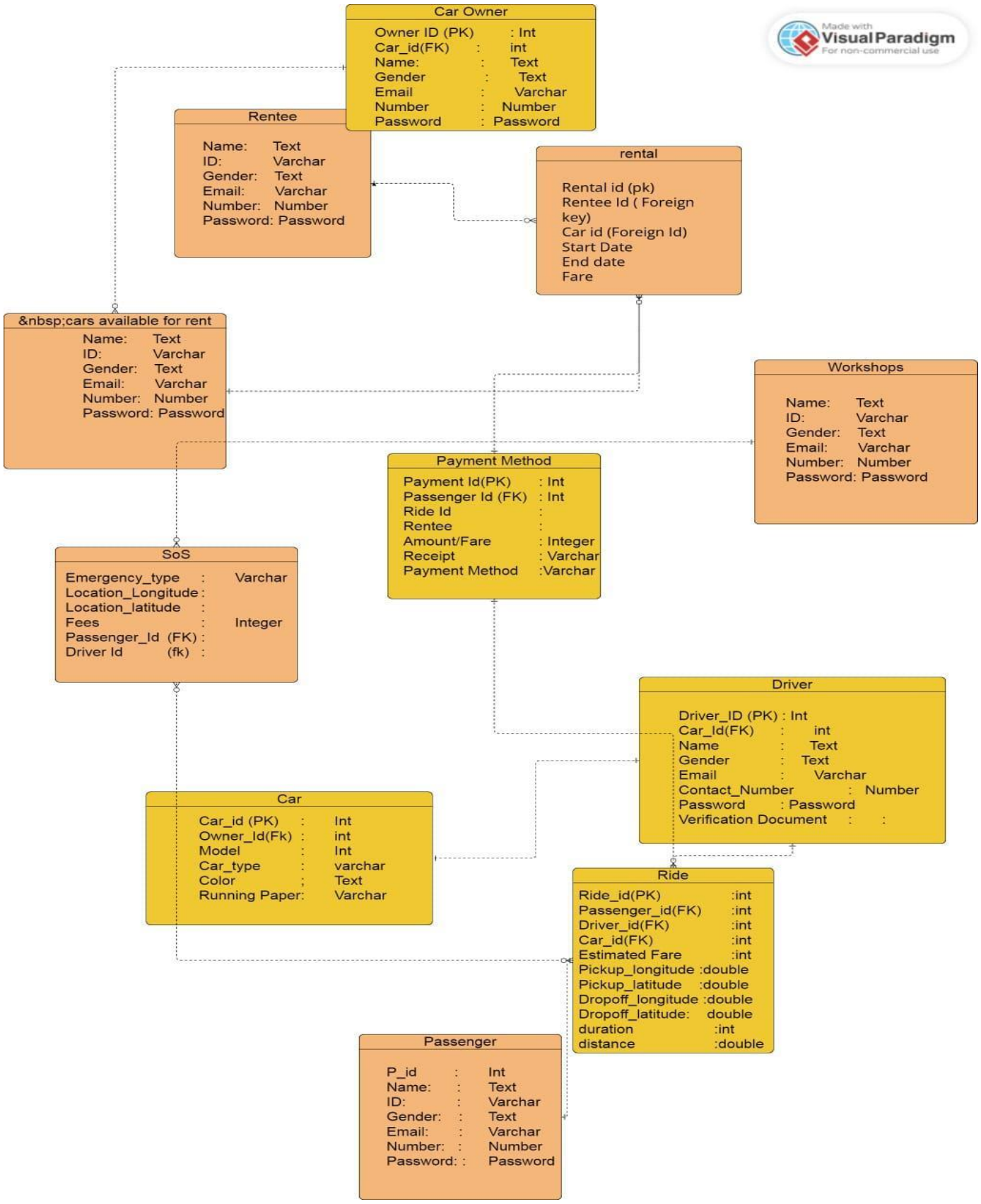


Figure 6 ERD Diagram

4.5 Use Case Diagram:

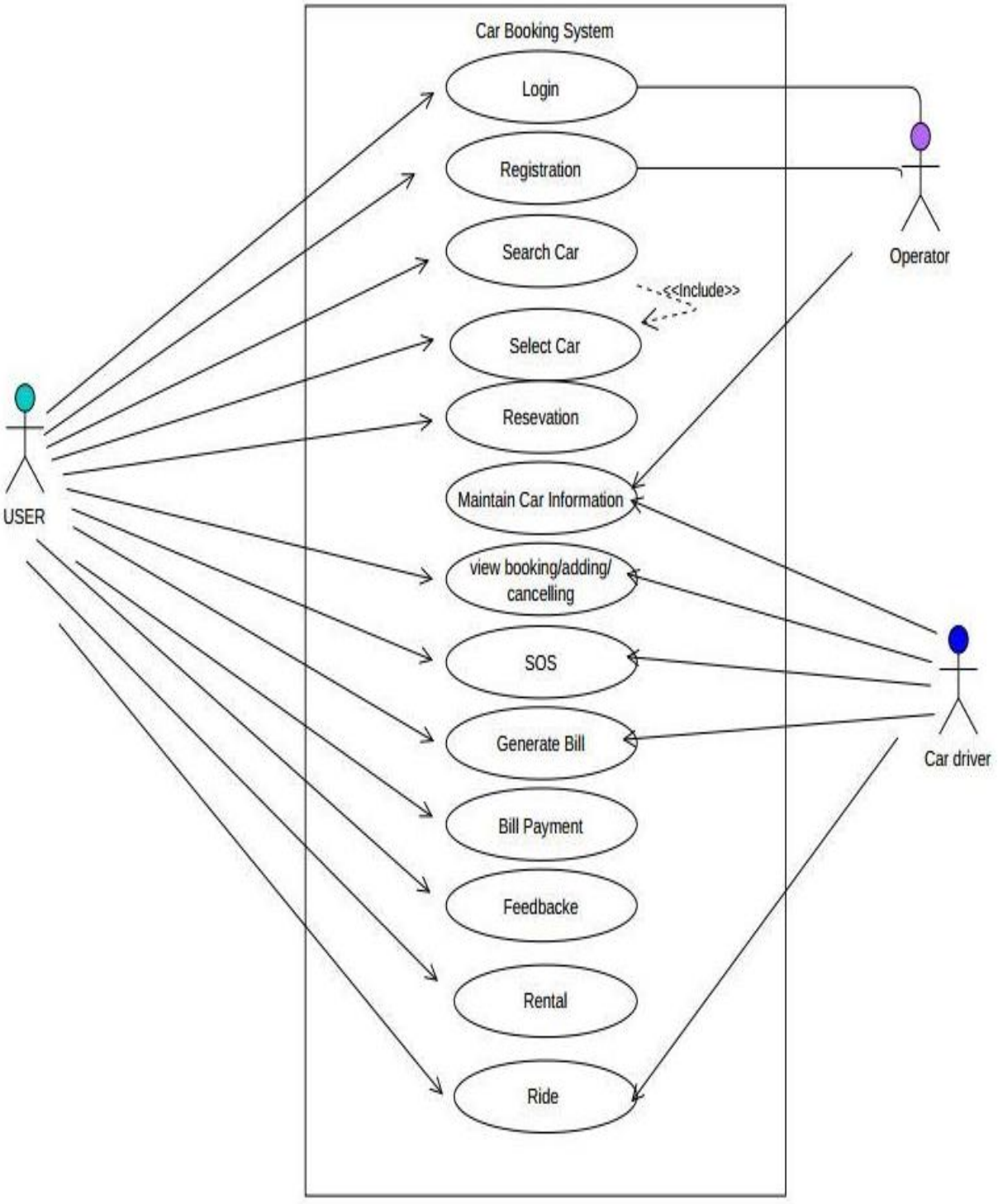
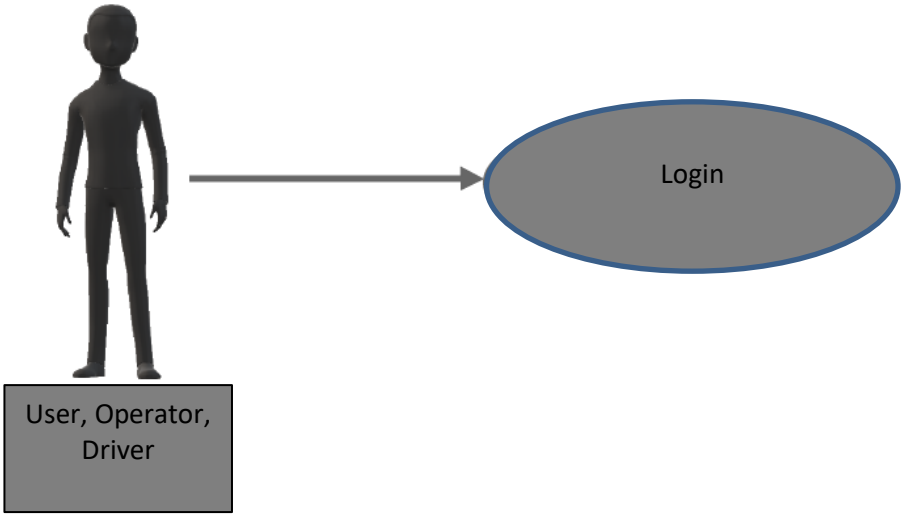


Figure 7 Use Case Diagram

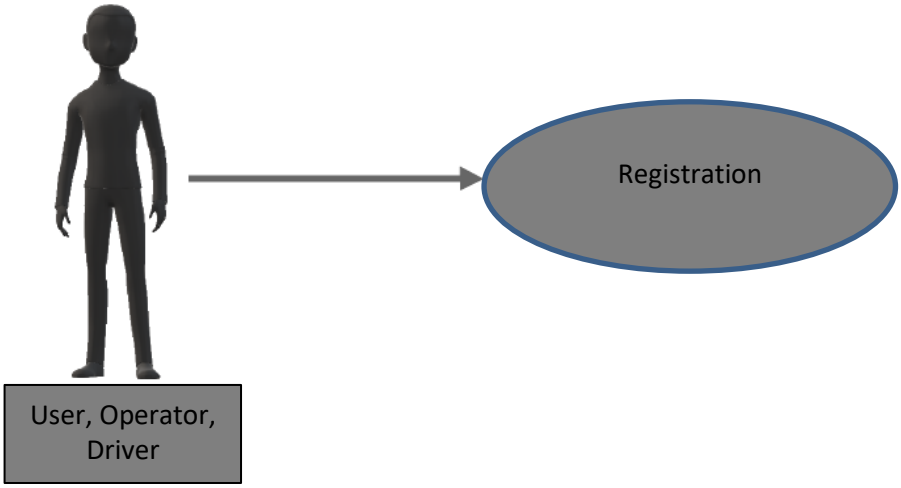
Use Case Narratives:



Use Case 1:

Use Case Name:	Login	
ID:	login	
Actors Involved:	User,Operator,Driver	
Brief Description	The user logs into the system with a valid username and password.	
Pre-Conditions	The user is authenticated and granted access to the system.	
Post-Conditions	The user must have a valid account with the system	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The user navigates to the login page. 2. The user enters their credentials.	1. The system prompts the user to enter their username and password. 2. The system validates the credentials. 3. If the credentials are valid, the system grants the user access to the system.

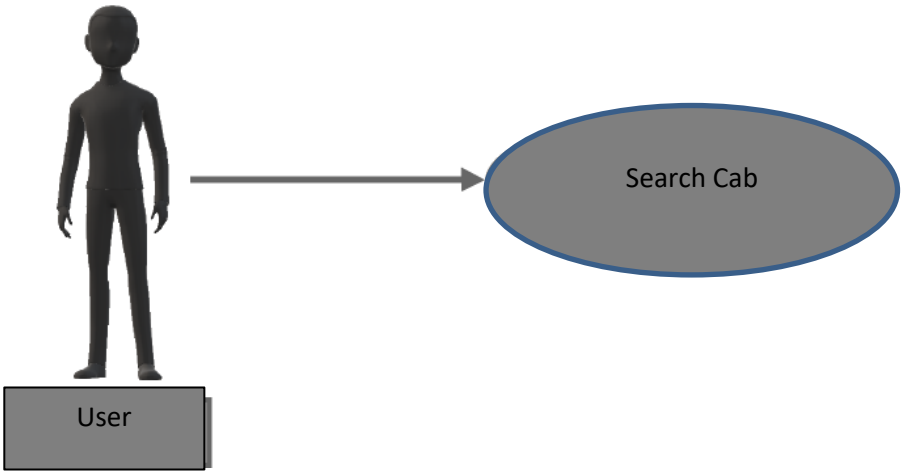
		4. If the credentials are invalid, the system displays an error message.



Use case 2:

Use Case Name:	Registration	
ID:	registration	
Actors Involved:	User,Operator,Driver	
Brief Description	The user creates a new account with the system.	
Pre-Conditions	The user must not have an existing account with the system.	
Post-Conditions	The user's account is created and they can now log into the system.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The user navigates to the registration page. 2. The user enters their information and chooses a username and password.	1. The system prompts the user to enter their personal information and choose a username and password. 2. The system validates the information and creates the user's account.

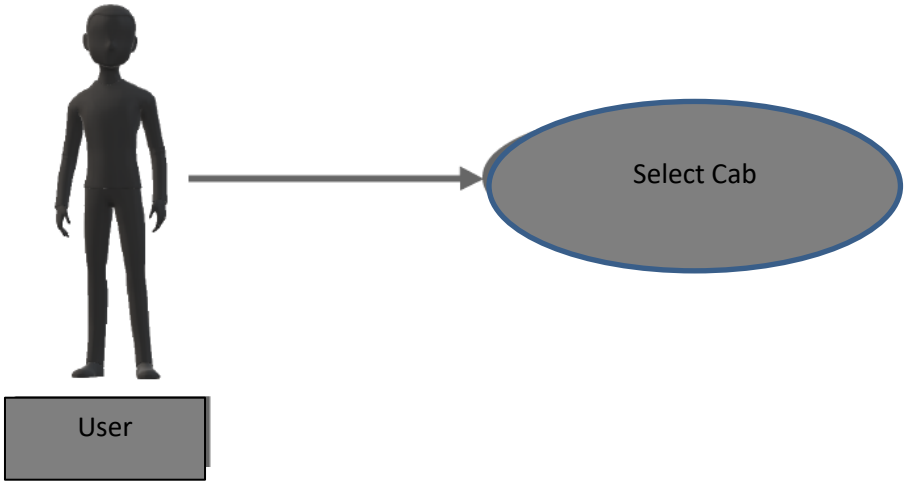
		3. The system displays a message informing the user that their account has been created.



Use Case 3:

Use Case Name:	Search Cab	
ID:	Search_cab	
Actors Involved:	User	
Brief Description	The user searches for available cabs.	
Pre-Conditions	The user must be logged into the system.	
Post-Conditions	The user is presented with a list of available cabs.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The user navigates to the cab search page. 2. The user enters their pickup location and	1. The system prompts the user to enter their pickup location and destination. 2. The system queries the database

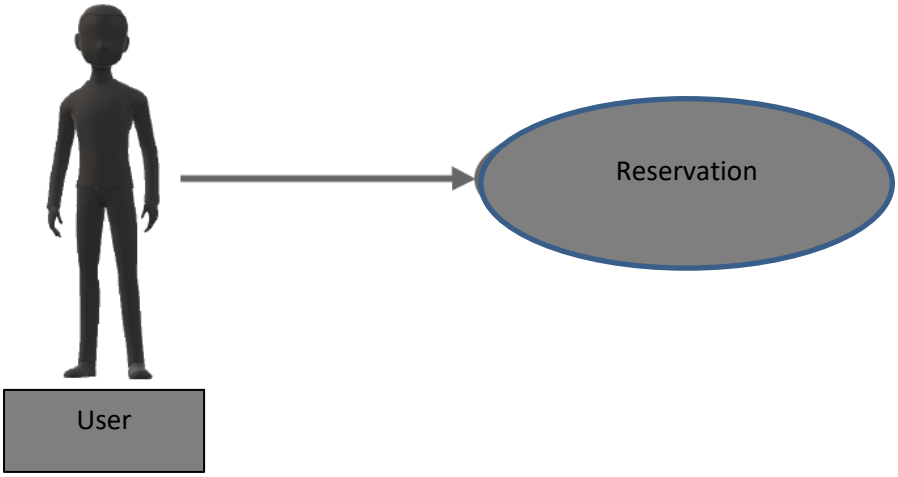
	destination.	for available cabs. 3. The system displays a list of available cabs.



Use Case 4:

Use Case Name:	Select Cab	
ID:	select_cab	
Actors Involved:	User	
Brief Description	The user selects a cab for reservation. If he is willing to have ride in future. On the specific date or event.	
Pre-Conditions	The user must have searched for available cabs.	
Post-Conditions	The user has selected a cab for reservation.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The user can views the list of available cabs. 2. The user confirms their selection.	1. The system prompts the user to confirm their selection.. 2. The system displays a message informing the user that their cab

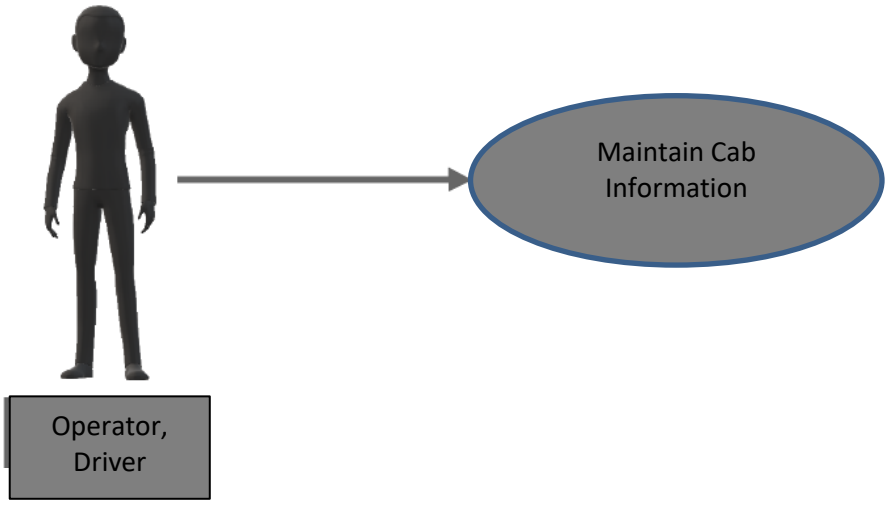
		has been selected.



Use Case 5:

Use Case Name:	Reservation	
ID:	reservation	
Actors Involved:	User	
Brief Description	The user reserves a cab for a specified date and time.	
Pre-Conditions	The user must have selected a cab.	
Post-Conditions	The user's reservation is created.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The user selects a cab. 2. The user enters the date and time of their reservation.	1. The system prompts the user to enter the date and time of their reservation.

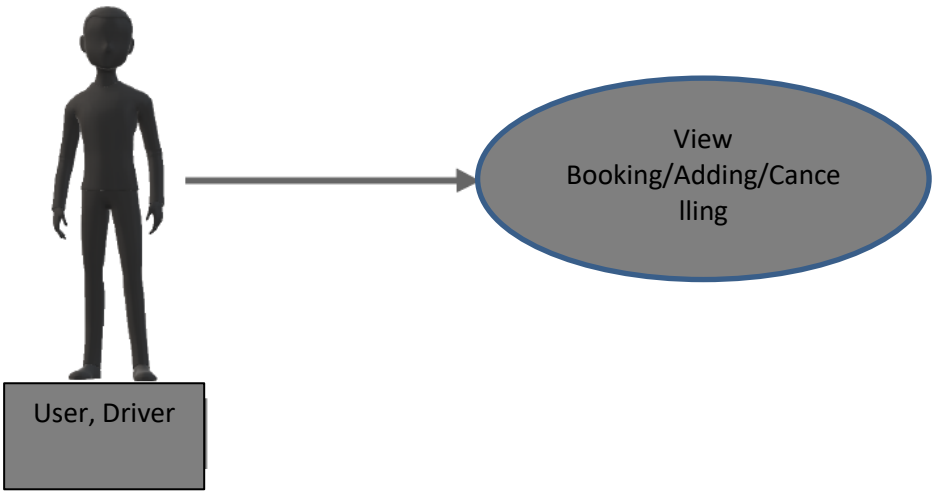
		2. The system creates the user's reservation. 3. The system displays a message informing the user that their reservation has been created.



Use Case 6:

Use Case Name:	Maintain Cab Information
ID:	Maintain_cab_information
Actors Involved:	Operator, Driver
Brief Description	The admin maintains information about cabs.
Pre-Conditions	The admin must be logged into the system.

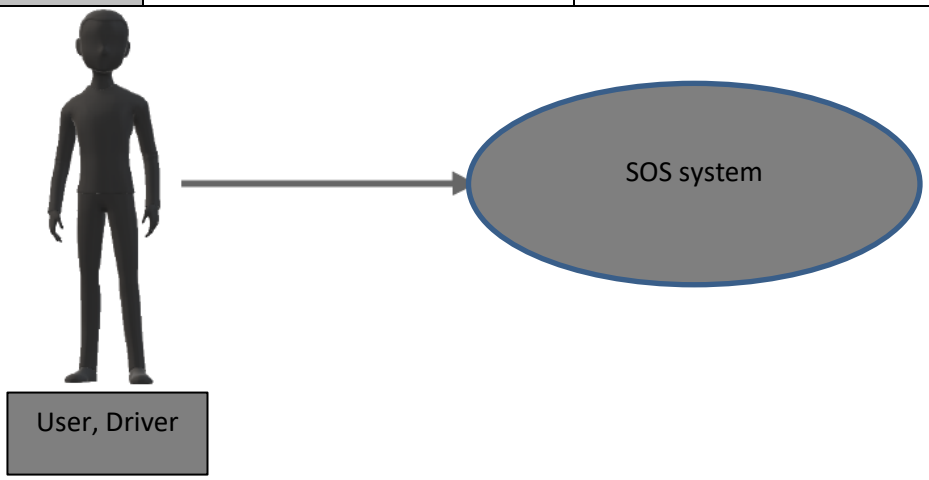
Post-Conditions	The cab information is updated.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The admin navigates to the cab maintenance page. 2. The admin selects a cab to edit. 3. The admin updates the cab's information.	1. The system displays a list of available cabs. 2. The system displays the cab's information. 3. The system saves the updated information.



Use Case 6:

Use Case Name:	View Booking/Adding/Cancelling	
ID:	View_ details	
Actors Involved:	User, Driver	
Brief Description	The user views their current reservations, adds new reservations, or cancels existing reservations.	
Pre-Conditions	The user must be logged into the system.	
Post-Conditions	User book & cancel their ride.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The user navigates to the cab ride booking page. 2. The user adds the pickup and drop off location. 3. The user adds the booking time and date. 4. The user selects a cab.	1. The system displays the cab's information. 2. the system generates the request for the ride to rider 3. if the rider accepts the ride they add their booked ride page

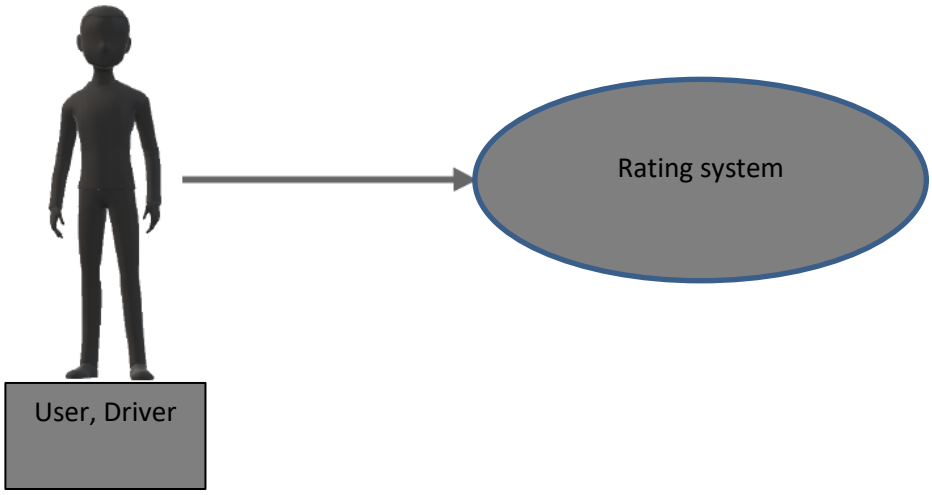
		4. if the rider cancels the ride they start searching again for the available rides 5. The system saves the updated information.



Use Case 7:

Use Case Name:	SOS system	
ID:	Sos_system	
Actors Involved:	User, Driver	
Brief Description	If there is any emergency or any type of help is needed the user can easily use the SOS service and avail the help.	
Pre-Conditions	The user has enabled location services on their device.	
Post-Conditions	The user has successfully contacted emergency services and received confirmation that help is on the way.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The user encounters an emergency situation, such as a medical emergency, fire, or crime.	1. The SOS application automatically detects the user's current location and displays it on the screen. 2. The SOS application connects the user with the appropriate emergency

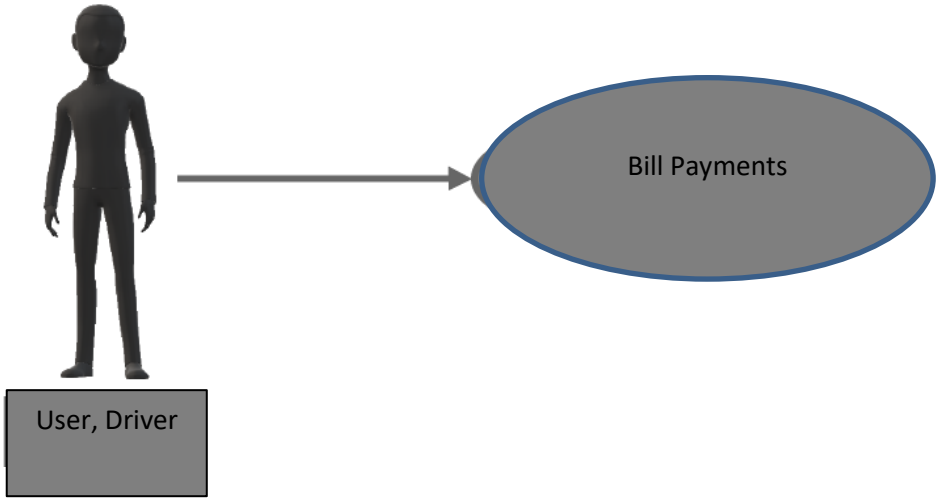
	2. The user opens the SOS application on their mobile device. 3. The user selects the type of emergency they are experiencing, such as medical, fire, or police. 4. The user receives confirmation that their emergency call has been received and help is on the way	service, such as 911 or the local emergency services number. 3. The SOS application sends the user's location information to the emergency service, allowing them to quickly locate the user. 4. the SOS System will show the EST to the user for the current status of the cab



Use Case 8:

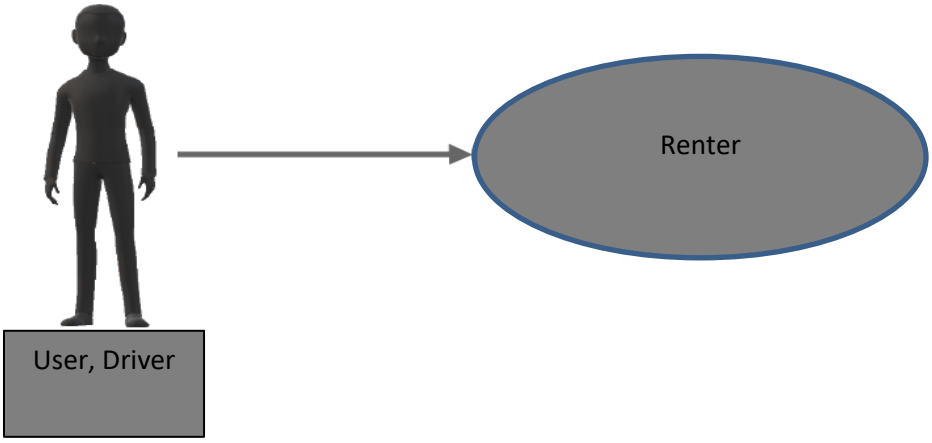
Use Case Name:	Rating system
ID:	Rating_system
Actors Involved:	User, Driver
Brief Description	After the ride has been done successfully the user will be able to give the feedback about the driver and it will be seen by the rider that the following person has given this feedback.

Pre-Conditions	User must have an active account and should be logged in.	
	user should have taken at least one cab ride	
	User with the necessary information about the cab ride, such as the driver's name, cab model, pickup and drop-off locations, and fare, for user to rate and review.	
Post-Conditions	The Rating tab saves user rating and review for the selected cab ride in its database.	
	User can view her rating and review for the selected cab ride on the Rating application's cab ride details page.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. User opens the Rating tab. 2. The tab displays a list of her previous cab rides 3. User selects a cab ride from the list that they wants to rate or searches for a new cab ride. 4. User rates the cab ride by selecting a star rating from 1 to 5 and can also add a written review or comment. 5. user can view other users' ratings and reviews on the cab ride details page and also like or comment on their reviews.	1. The application displays the cab ride details, including the pickup and dropoff location, fare, driver's name, and the cab's model 2. The application saves user's rating and review and save it into the database. 3. The system will automatically selects the cab and will send a feedback message to the following selected driver.



Use Case 9:

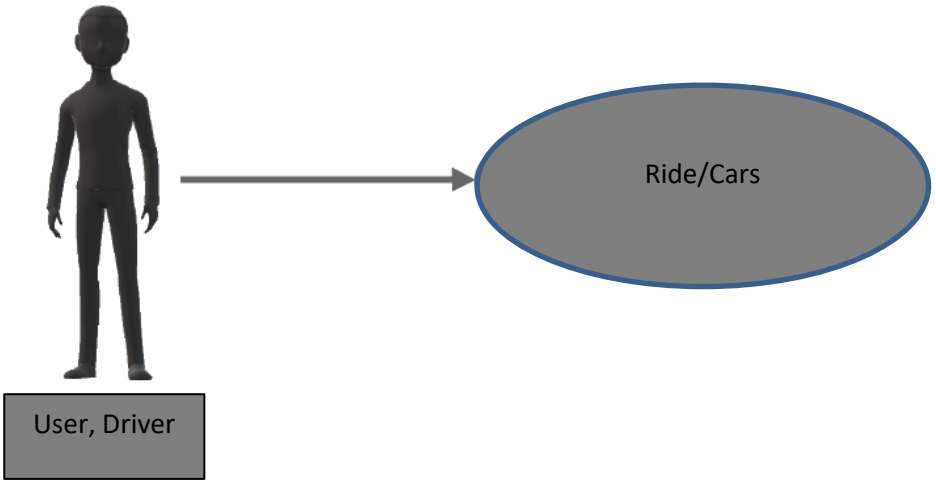
Use Case Name:	Bill Payments	
ID:	payment	
Actors Involved:	User, Driver	
Brief Description	The user have the access for the budget selection and the fare for his destination and will see the final price after the ride has been completed.	
Pre-Conditions	User must have an active account and should be logged in.	
	user should have taken at least one cab ride	
Post-Conditions	The user will be able to see the final price on the screen when the ride has been.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. User can select the fare. 2. user can give his offer to the rider 3. user can pay the driver via easy paisa or cash	1. The system will generate a estimated fare by algorithm. 2. The system will show the user offer to the nearby all the drivers. 3the system will show the driver a massage that this ride is on cash or on online payment.



Use Case 10:

Use Case Name:	Renter	
ID:	renter	
Actors Involved:	User, Driver	
Brief Description	The Renter will be able to add his cars in the system that he is willing to give on rent also any driver is willing to give his car on rent he will be also facilitate and the renter will be used as a rider	
Pre-Conditions	Rent Driver must have selected an option for the rental service.	
Post-Conditions	The Rent Driver must accept the request of the user for rent a car.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The driver can post his car on the database for rent. 2. The driver can set the offer for a car rent.	1. The system will show the cars that are available for rent. 2. The system will show the Driver offer for the rent car

	3. The driver has an option to use his car as a driver or as aren't a car.	3. The system will categorized the needs of the user upon the circumstances.



Use Case 11:

Use Case Name:	Ride/Cars	
ID:	Cars	
Actors Involved:	User, Driver	
Brief Description	The driver will be able to add their cars that will be available for rent and the cars he is using for cab service, the user will be able to see all the cars data	
Pre-Conditions	The driver must be logged in with the accurate selection type that he is trying to add car as a renter or car as a cab.	
Post-Conditions	The driver must update the status that the car is available or not.	
Normal Flow of Events:	**Actor Action**	**System Response**
	1. The driver can add the cars with the details. 2. The driver can add more than one car in the system.	1. The system will add the cars in the database according to the user requirements.

	3. the user can select the cars at the time of booking that he wanted a car as a rent or as a pick and drop 4. Driver will be able to set the details that the car is available with or without driver.	2. The system will show the details for the car that should be selected. 3. The system will show the details for the car that is it available or not if not it will show pop up message that the car is not available on rent.

SUMMARY:

In this chapter, we met with the ERD diagrams and work breakdown diagram. Our application covered the all-major modules, which were used to fulfill the requirements so the workbreak down elaborate this in detailed because when we gathered the information so it show the flow of our system specifically like in implementation we make sure that the development is start or not then after this testing process will be occurred so if there is any error occur so it must be s olved at that time then we monitor our application by time to time to make sure that everything is complete or not that why we make use casses to focus on our mistake. In spite of everythin g, information has been accumulated and layout has been created so now, the implementation has been initiated according to the applications' requirement to make sure that it is beneficial f or the user on a long run. The link between use cases, actors, and your application was explore d at a crucial level.

CHAPTER - 05

5.1. INTRODUCTION:

In this chapter, we are discussing about the aspects which are used in our mobile application, user interface.and backend design are another topic of our discussion. The prototype for our ride-sharing app embodies the culmination of extensive research, innovative design, and user -centric development. It serves as a tangible manifestation of our commitment to revolutionize th e transportation landscape, providing users with a seamless and enjoyable commuting experienc e

5.2. PROTOTYPE DESIGN:

User App

Figure 8 prototype

Rider App:

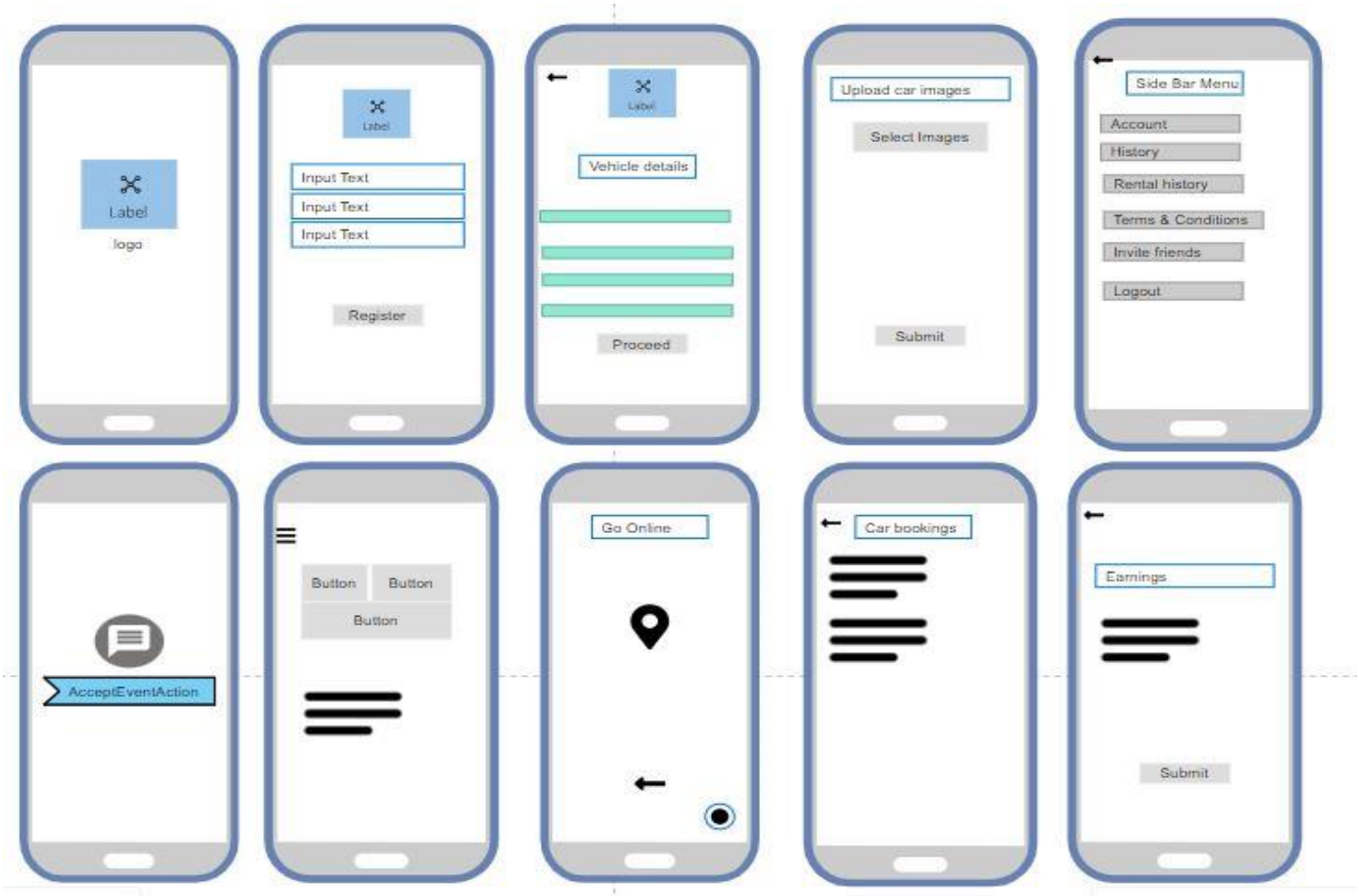


Figure 9 prototype1

SUMMARY:

This chapter covers system development, including frontend and backend design, some database queries using third-party libraries, and application screenshots. This chapter provides a quick description of the many types of system mistakes, the source code for verification, and other topics. To learn how the system assignation functions, certain information flows are provided in the following section. The UI design provides the clear view of working screens one by one. The UI also informs about the overall description and functionality of the screen, while providing a specific description trough background, color scheme and images. To demonstrate how we represented the data in our schema, database queries are also supplied. Due to the system's complexity, several additional libraries were needed to satisfy the user's requ est all of these external libraries are listed above.

CHAPTER – 06

6.1 INTRODUCTION:

In this chapter we conducted a comprehensive testing conducted on our application **"Market Help"**. After the completion of the implementation phase testing plays a vital role for making sure that the system works properly. Once the Application was developed the testing phase started. Each and every screen and button were tested according to the requirements and functionalities. The objective of this testing was to assess the application's performance, functionality, security, usability and overall quality. The tests were designed to evaluate various aspects of the application to ensure that it meets the required standards and fulfills its intended purpose. Do to the re usability of our code the total test cases of the application turned out to be 16. Each test case has the requirement reference, project name, application name while providing all the details of the test case. In detail attributes of the test case, such as test case ID, Test case description, test steps, expected result, pass or fail status, preparation date, running date end the date at which it was tested.

6.2 Testing Strategy

- **Unit Testing**

Objective: Verify the correctness of individual components and functions within the application.

Implementation:Unit tests will be written for each function, class, and module in the codebase using Dart's testing framework. These tests will focus on isolating and testing the smallest units of code to ensure they function as expected.

- **Integration Testing**

Objective: Validate the interactions between different modules and components to ensure they work seamlessly together.

Implementation: Integration tests will be conducted to examine the interfaces and interactions between various parts of the application. This includes testing the integration of Firebase with Dart code to ensure proper data flow and synchronization.

- **System Testing**

Objective: Evaluate the entire system to ensure all components work together as intended.

Implementation: System tests will be conducted to assess the overall functionality of VDrive. This includes testing end-to-end scenarios such as car reservations, SOS alerts, and taxi bookings to ensure a smooth and coherent user experience.

- **User Acceptance Testing (UAT)**

Objective: Validate that VDrive meets the expectations and needs of its intended users.

Implementation: UAT involves real users interacting with the application to assess its usability, efficiency, and overall satisfaction. Feedback from real users will be collected and analyzed to make any necessary adjustments.

Methodologies

1. Automated Testing

Automated testing tools will be utilized for unit testing and some integration testing. This ensures that repetitive and time-consuming tests are executed consistently, providing quick feedback to developers.

2. Manual Testing

Manual testing will be employed for scenarios that require human judgment, such as user interface (UI) testing, usability testing, and UAT. Manual testing allows for a comprehensive evaluation of the application's user experience.

6.3 Test Cases:

User App:

Test Case 01:

Requirement Reference	1	**Project Name**	VDrive!
Test Case Id	1.1	**Test Type**	In app Functionality Testing
Test Case Description	Signup process:		
Test Steps	• Open the driver app. • Navigate to the signup screen. • Enter valid signup details and complete the registration process .		
Expected Result	Users can easily sign up for the app by providing necessary information such as name, email, and password. The process should be smooth and intuitive.		
Actual Result	The signup process is straightforward, with clear instructions guiding users through each step. Users can easily create an account without encountering any technical glitches or confusion.		
Pass/Fail	Pass		

Test Case 1.2:

Requirement Reference	1	**Project Name**	VDrive!
Test Case Id	1.2	**Test Type**	In app Functionality Testing
Test Case Description	Login process:		
Test Steps	• Open the driver app. • Navigate to the login screen. • Enter valid login credentials and verify successful login.		
Expected Result	Users can log in to the app using their registered email address/username and password. The login process should be secure, with proper validation of credentials and error handling for incorrect inputs. Upon successful login, users should be directed to the app's main interface.		
Actual Result	The login process functions as expected, with users able to enter their credentials and log in securely. The app verifies the entered information and grants access to authenticated users. In case of incorrect login details, appropriate error messages are displayed to guide users. After successful login, users are directed to the main interface of the app without any issues		
Pass/Fail	Pass		

Test Case 1.3:

Requirement Reference	1	**Project Name**	Vdrive!
Test Case Id	1.3	**Test Type**	In app Functionality Testing
Test Case Description	Verification Process		
Test Steps	• Open the driver app. • Complete the signup process. • Check email/SMS for verification code, enter it in the app, and verify.		

Expected Result	After completing the signup form, users should receive a verification email or text message containing a unique verification code/link to confirm their email address or phone number. The email/text should clearly instruct users on how to proceed with the verification process, and it should be delivered promptly to the provided contact information.
Actual Result	Upon completing the signup process, users receive a verification email or text message without delay. The message contains a clear explanation of the verification process and includes a unique code/link for users to confirm their email address or phone number. Users can easily follow the provided instructions to verify their contact information and proceed with using the app
Pass/Fail	Pass

Test Case 1.4:

Requirement Reference	1	**Project Name**	Vdrive!
Test Case Id	1.4	**Test Type**	In app Functionality Testing
Test Case Description	Error Handling		
Test Steps	• Attempt login/signup with invalid credentials. • Verify that appropriate error messages are displayed.		
Expected Result	When users enter incorrect credentials (such as email/username or password) during the login process, the app should provide clear and informative error messages indicating the nature of the error. Messages should differentiate between incorrect username/email and password entries, guiding users on how to correct their input.		
Actual Result	Upon entering incorrect credentials, the app promptly responds with informative error messages. If the username/email is incorrect, the app specifies that the entered email is not registered with the system. Similarly, if the password is incorrect, the app indicates that the password is invalid. These messages guide users on how to rectify their input, ensuring a smooth login experience.		
Pass/Fail	Pass		

Test Case 1.5:

Requirement	1	**Project Name**	Vdrive!

Reference			
Test Case Id	1.5	**Test Type**	In app Functionality Testing
Test Case Description	Accuracy & Map Opening:		
Test Steps	• Open the user app. • Initiate a ride request or select pickup/drop-off locations. • Verify that the map interface opens and displays the selected locations.		
Expected Result	• The app should accurately determine the user's location using GPS or other location services available on the device. The location accuracy should be within a reasonable range, typically a few meters, to ensure precise navigation and location-based services.		
Actual Result	Upon opening the map feature, the app quickly loads the map interface, providing users with a clear view of their current location and nearby points of interest. The map navigation is smooth, allowing users to zoom in/out and pan across the map effortlessly. Users can easily access additional features like search and route planning, ensuring a seamless mapping experience.		
Pass/Fail	Pass		

Test Case 2.1:

Requirement Reference	2	**Project Name**	Vdrive!
Test Case Id	2.1	**Test Type**	Taxi Booking
Test Case Description	Initiating Taxi Booking		
Test Steps	• Open the user app. • Select the option for booking a taxi ride. • Enter the pickup location and desired destination.		
Expected Result	Users should be able to initiate a taxi booking process seamlessly by accessing the designated feature within the app. The process should involve specifying the pickup location, destination, preferred vehicle type, and any additional preferences (such as payment method or ride-sharing options). The booking interface should be user-friendly and intuitive, guiding users through each step effortlessly		

Actual Result	Users can initiate the taxi booking process without encountering any obstacles. The app's booking interface is intuitive, allowing users to input their pickup location, destination, and preferred vehicle type with ease. Users can also specify additional preferences, such as payment method or ride-sharing options, if available. Upon confirming the booking, the app provides real-time updates on the assigned driver's location and estimated time of arrival, ensuring a smooth and convenient ride experience
Pass/Fail	Pass

Test Case 2.2

Requirement Reference	2	**Project Name**	Vdrive!
Test Case Id	2.2	**Test Type**	Taxi Booking
Test Case Description	Vehicle Selection		
Test Steps	• Verify that available taxi options are displayed. • Select a taxi based on preferences such as vehicle type or capacity.		
Expected Result	Users should be presented with a variety of vehicle options to choose from when booking a ride, catering to different preferences, needs, and budgets. The app should provide clear and detailed information about each vehicle type, including vehicle capacity, amenities, and pricing. Users should be able to easily select their preferred vehicle type based on their requirements.		
Actual Result	The app offers a range of vehicle options for users to choose from, including economy cars, standard sedans, SUVs, and luxury vehicles. Each vehicle type is accompanied by detailed information, such as seating capacity, vehicle model, and fare estimates. Users can easily compare and select their preferred vehicle type based on factors like comfort, pricing, and availability. The selection process is seamless, allowing users to proceed with their booking without any difficulties.		
Pass/Fail	Pass		

Test Case 2.3:

Requirement Reference	2	**Project Name**	Vdrive!

Test Case Id	2.3	**Test Type**	Taxi Booking
Test Case Description	Booking Confirmation:		
Test Steps	• Confirm the taxi booking. • Verify that a confirmation message appears with details of the booked taxi and estimated fare.		
Expected Result	After users have selected their desired vehicle and specified their pickup location and destination, the app should provide a clear confirmation message indicating that the booking has been successfully processed. This confirmation should include details such as the booking reference number, pickup location, destination, selected vehicle type, and estimated time of arrival (ETA) of the driver		
Actual Result	Upon completing the booking process, users receive a clear and concise confirmation message confirming their booking. The message includes all relevant details, such as the booking reference number, pickup location, destination, selected vehicle type, and the ETA of the assigned driver. Users can easily verify that their booking has been successfully processed and proceed with confidence knowing that their ride is confirmed.		
Pass/Fail	Pass		

Test Case 2.4:

Requirement Reference	2	**Project Name**	Vdrive!
Test Case Id	2.4	**Test Type**	Taxi Booking
Test Case Description	Real-Time Tracking		
Test Steps	• After booking a taxi, track its real-time location on the map. • Ensure that the user receives updates on the taxi's arrival time.		
Expected Result	Users should be able to track the location of their assigned vehicle in real-time within the app. The tracking interface should display the current location of the vehicle on a map. Users should have access to accurate and up-to-date information throughout their journey.		
Actual Result	The app provides robust real-time tracking functionality, allowing users to monitor the location of their assigned vehicle seamlessly. The tracking interface displays the vehicle's current location accurately on a map, along		

	with the ETA and any pertinent updates regarding the journey. Users can observe the progress of their ride in real-time, ensuring transparency and peace of mind throughout the journey
Pass/Fail	Pass

Test Case 2.5:

Requirement Reference	2	**Project Name**	Vdrive!
Test Case Id	2.5	**Test Type**	Taxi Booking
Test Case Description	Driver Details:		
Test Steps	• Verify that details of the assigned driver are displayed. • Check driver's name, profile picture, and vehicle details.		
Expected Result	After a ride has been confirmed, users should receive detailed information about the assigned driver within the app. This information should include the driver's name, profile picture, vehicle details (such as make, model, and license plate number), and contact information (if available). Users should have access to this information to verify the driver's identity and ensure a safe and secure ride experience.		
Actual Result	Upon confirming a ride, users are provided with comprehensive details about the assigned driver within the app. This includes the driver's name, profile picture, vehicle make, model, and license plate number. Additionally, users have the option to contact the driver directly through the app if needed. The provided information allows users to verify the driver's identity and feel confident about their ride choice		
Pass/Fail	Pass		

Test Case 2.6:

Requirement Reference	2	**Project Name**	Vdrive!
Test Case Id	2.6	**Test Type**	Taxi Booking
Test Case Description	In-ride Experience		

Test Steps	• Once the taxi arrives, board the vehicle. • Ensure that the app provides real-time updates on the ride progress.
Expected Result	During the ride, users should have access to essential features and information within the app to enhance their experience. This includes real-time tracking of the ride's progress, estimated time of arrival (ETA) updates, the ability to communicate with the driver, and access to any additional services or features offered by the app (like payment options).
Actual Result	The in-ride experience meets users' expectations by providing seamless access to essential features and information. Users can track the ride's progress in real-time, with accurate ETA updates displayed within the app. They also have the option to communicate with the driver directly through the app if needed. Additionally, users can access any additional services or features offered by the app, such as payment options, enhancing their overall ride experience
Pass/Fail	Pass

Test Case 2.7:

Requirement Reference	2	**Project Name**	Vdrive!
Test Case Id	2.7	**Test Type**	Taxi Booking
Test Case Description	Payment and Receipt:		
Test Steps	• After reaching the destination, complete the ride. • Verify that the app calculates the fare accurately based on distance and time. • Check for payment options and generate a receipt..		
Expected Result	Users should be able to conveniently pay for their ride within the app using various payment methods such as credit/debit cards, mobile wallets, or other electronic payment options. After completing the ride, users should receive a detailed electronic receipt confirming the payment transaction. The receipt should include information such as the fare breakdown, date and time of the ride, pickup and drop-off locations, and any applicable taxes or fees.		
Actual Result	The app offers a seamless payment experience, allowing users to pay for their ride using a variety of payment methods, including credit/debit cards, mobile wallets, or other electronic payment options. After the ride is completed, users receive a comprehensive electronic receipt via email or within the app. The receipt includes detailed information such as the fare breakdown, date		

	and time of the ride, pickup and drop-off locations, and any additional charges or discounts applied. Users can easily review and save the receipt for their records.
Pass/Fail	Pass

Test Case 3.1:

Requirement Reference	3	**Project Name**	Vdrive!
Test Case Id	3.1	**Test Type**	Rental Service
Test Case Description	Rental Service Booking		
Test Steps	• Open the user app. • Navigate to the rental service section. • Enter pickup and dropoff locations, select duration, and confirm booking.		
Expected Result	Users should be able to easily browse available rental vehicles within the app and select their desired rental period, vehicle type, and any additional preferences (such as optional features or insurance coverage). The booking process should be intuitive, guiding users through each step and providing clear information about rental rates, terms, and conditions. After completing the booking, users should receive a confirmation of their reservation, along with relevant details such as pickup location		
Actual Result	The app offers a user-friendly interface for browsing and booking rental vehicles. Users can easily search for available vehicles based on their preferences and select their desired rental period and optional features. The booking process is straightforward, with clear information provided about rental rates, terms, and conditions. Upon completing the booking, users receive a confirmation of their reservation, including details such as pickup location, rental period, and any additional instructions		
Pass/Fail	Pass		

Test Case 3.2:

Requirement Reference	3	**Project Name**	Vdrive !
Test Case Id	3.2	**Test Type**	Rental Service

Test Case Description	Vehicle Selection
Test Steps	• Navigate to the rental service section. • Browse available vehicle options. • Select a vehicle based on type, capacity, and hourly rates.
Expected Result	Users should have access to a diverse range of vehicles to choose from when booking a rental service. The app should provide clear information about each vehicle, including make, model, year, seating capacity, features, and rental rates. Users should be able to filter vehicles based on their preferences
Actual Result	The app offers a comprehensive selection of vehicles for rental, catering to various preferences and needs. Users can browse through different vehicle categories, such as sedans, SUVs, trucks, and vans, and view detailed information about each vehicle, including specifications and rental rates.
Pass/Fail	Pass

Test Case 3.3:

Requirement Reference	3	**Project Name**	Vdrive!
Test Case Id	3.3	**Test Type**	Rental Service
Test Case Description	Booking Confirmation		
Test Steps	• Complete the rental service booking process. • Verify that a confirmation message appears with booking details.		
Expected Result	After users have selected their desired vehicle and specified their rental details (such as pickup location, rental period, and any additional preferences), the app should provide a clear confirmation message indicating that the booking has been successfully processed. This confirmation should include details such as the booking reference number, rental period, pickup location, selected vehicle, and any additional charges		
Actual Result	Upon completing the booking process, users receive a confirmation message confirming their rental reservation. The message includes essential details such as the booking reference number, rental period, pickup location, selected vehicle, and any additional preferences or agreements. Users can easily verify that their booking has been successfully processed and proceed with confidence knowing that their rental reservation is confirmed.		

Pass/Fail	Pass

Test Case 3.4:

Requirement Reference	3	**Project Name**	Vdrive!
Test Case Id	3.4	**Test Type**	Rental Service
Test Case Description	Cancellation Policy		
Test Steps	• Open the user app. • Navigate to the booking history section. • Cancel a rental service booking and verify cancellation policy adherence.		
Expected Result	Users should have access to clear and transparent information about the app's cancellation policy for rental bookings. The cancellation policy should outline factors such as cancellation fees, refund eligibility, and any deadlines or conditions for canceling a reservation. Users should be able to easily understand the terms of the cancellation policy and make informed decisions about canceling their rental reservation if necessary.		
Actual Result	The app provides detailed information about its cancellation policy for rental bookings. Users can easily access the cancellation policy within the app's help or FAQ section, where they find clear explanations of factors such as cancellation fees, refund eligibility criteria, and any deadlines for canceling reservations. The cancellation policy is presented in a user-friendly manner, allowing users to understand the terms and conditions easily and make informed decisions about canceling their rental reservations.		
Pass/Fail	Pass		

Test Case 3.5:

Requirement Reference	3	**Project Name**	Vdrive
Test Case Id	3.5	**Test Type**	Rental Service
Test Case Description	Rating and Feedback		
Test Steps	• After completing a rental service, navigate to the feedback section. • Rate the driver and provide feedback.		

	• Verify that the rating and feedback are submitted successfully.
Expected Result	After completing a rental service, users should have the option to provide a rating and feedback about their experience within the app. The rating system should be intuitive, allowing users to assign a numerical rating (e.g., on a scale of 1 to 5 stars) based on various aspects of the rental service (e.g., vehicle condition, cleanliness, customer service). Additionally, users should be able to provide written feedback to provide more detailed comments or suggestions for improvement
Actual Result	Upon completing a rental service, users are prompted to provide a rating and feedback about their experience within the app. The rating system is user-friendly, allowing users to assign a numerical rating and provide written feedback if desired. Users can rate different aspects of the rental service, such as vehicle condition, cleanliness, and overall satisfaction. The feedback is submitted seamlessly through the app, providing users with an opportunity to share their opinions and help improve the rental service experience for future users.
Pass/Fail	Pass

Test Case 4.1:

Requirement Reference	4	**Project Name**	Vdrive
Test Case Id	4.1	**Test Type**	SOS Feature
Test Case Description	SOS Button Visibility		
Test Steps	• Open the user app. • Ensure that the SOS button is prominently displayed on the main interface.		
Expected Result	The SOS button should be prominently displayed within the app interface, preferably in a location that is easily accessible and recognizable to users. It should be clearly labeled and identifiable by a universally recognized symbol or text. Users should be able to locate the SOS button quickly in case of emergencies or when they need immediate assistance.		
Actual Result	The SOS button is prominently featured within the app interface, typically located in a visible and easily accessible area such as the home screen or navigation menu. It is clearly labeled with recognizable text or symbols, making it easy for users to identify. Additionally, the app may offer the		

	option to customize the appearance or location of the SOS button based on user preferences. Overall, the SOS button's visibility meets or exceeds user expectations, ensuring that users can quickly access emergency assistance when needed.
Pass/Fail	Pass

Test Case 4.2:

Requirement Reference	4	**Project Name**	Vdrive
Test Case Id	4.2	**Test Type**	SOS Feature
Test Case Description	SOS Alert Trigger		
Test Steps	• Open the user app. • Tap on the SOS button. • Verify that an emergency alert is triggered.		
Expected Result	The SOS alert trigger feature should be designed to initiate emergency assistance promptly and effectively when activated by the user. Upon triggering the SOS alert, the app should send distress signals to predefined emergency contacts or emergency services, along with the user's location information. The alert trigger should work reliably, even in challenging network conditions or low connectivity areas, to ensure timely response to emergencies.		
Actual Result	The SOS alert trigger feature functions as expected, reliably initiating emergency assistance when activated by the user. Upon triggering the SOS alert, the app sends distress signals to predefined emergency contacts and/or emergency services, providing them with the user's precise location information. The alert trigger works effectively in various network conditions, ensuring that users can receive timely assistance during emergencies.		
Pass/Fail	Pass		

Test Case 4.3:

Requirement Reference	4	**Project Name**	Vdrive
Test Case Id	4.3	**Test Type**	SOS Feature
Test Case Description	Location Accuracy		

Test Steps	• Trigger an SOS alert. • Check the SOS alert details to verify accurate user location information
Expected Result	The app's location services should provide accurate and precise location data to users. This includes accurately determining the user's current location and updating it in real-time as the user moves. Location accuracy should be within a reasonable range, typically a few meters, to ensure reliable navigation and location-based services
Actual Result	The app's location services deliver accurate and precise location data to users, meeting or exceeding expectations. The user's current location is accurately determined, and updates are provided in real-time as the user moves. Location accuracy typically falls within the expected range, ensuring reliable navigation and accurate location-based services. The app may utilize a combination of GPS, Wi-Fi, and cellular data to enhance location accuracy and reliability, even in challenging environments
Pass/Fail	Pass

Test Case 4.4:

Requirement Reference	4	**Project Name**	Vdrive
Test Case Id	4.4	**Test Type**	SOS Feature
Test Case Description	Emergency Contacts Notification		
Test Steps	• Trigger an SOS alert. • Verify that emergency contacts receive notifications with user's location details..		
Expected Result	When a user triggers an emergency alert or SOS feature within the app, the app should promptly notify the designated emergency contacts specified by the user. The notification should include relevant information such as the user's name, location, and the nature of the emergency. The notification should be sent via multiple channels if possible (e.g., SMS, email, push notification) to ensure timely communication with the emergency contacts.		
Actual Result	Upon triggering an emergency alert, the app promptly notifies the designated emergency contacts as specified by the user. The notification includes essential information such as the user's name, current location, and details about the emergency situation. The notification is sent via multiple channels, such as SMS, email, and push notification, to ensure that emergency contacts receive the information promptly. Additionally, the app		

	may provide options for emergency contacts to acknowledge receipt of the notification or respond with assistance
Pass/Fail	Pass

Test Case 4.5:

Requirement Reference	4	**Project Name**	Vdrive
Test Case Id	4.5	**Test Type**	SOS Feature
Test Case Description	SOS Confirmation Prompt		
Test Steps	• Tap on the SOS button. • Verify that a confirmation prompt appears. • Cancel the SOS alert to ensure the prompt works as expected		
Expected Result	After a user triggers the SOS feature within the app, the app should prompt the user to confirm their intention to send an emergency alert. This confirmation prompt serves as a safety measure to prevent accidental activations of the SOS feature. The prompt should clearly explain the consequences of sending an SOS alert and provide options for the user to cancel or confirm the action		
Actual Result	Upon triggering the SOS feature, the app displays a confirmation prompt to ensure user consent before sending an emergency alert. The prompt clearly explains the consequences of sending an SOS alert and provides options for the user to cancel or confirm the action. This confirmation prompt helps prevent accidental activations of the SOS feature and allows users to proceed with sending an emergency alert only when necessary		
Pass/Fail	Pass		

Driver App:

Test Case 1.1:

Requirement Reference	1	**Project Name**	VDrive (Driver App)!
Test Case Id	1.1	**Test Type**	In app Functionality Testing
Test Case Description	Signup process:		

Test Steps	• Open the driver app. • Navigate to the signup screen. • Enter valid signup details and complete the registration process .
Expected Result	Drivers can easily sign up for the app by providing necessary information such as name, contact details, driver's license, vehicle registration, and insurance information. The process should be straightforward and should include verification steps to ensure the authenticity of drivers.
Actual Result	The signup process for drivers is streamlined, requiring essential information such as name, contact details, driver's license, vehicle registration, and insurance details. Verification steps are included to authenticate drivers, ensuring compliance with regulatory requirements and enhancing trust within the platform. .
Pass/Fail	Pass

Test Case 1.2:

Requirement Reference	1	**Project Name**	VDrive (Driver App)!
Test Case Id	1.2	**Test Type**	In app Functionality Testing
Test Case Description	Login process:		
Test Steps	• Open the driver app. • Navigate to the login screen. • Enter valid login credentials and verify successful login. 		
Expected Result	Drivers should be able to log in securely using their registered credentials, such as username/email and password. The login process should include proper validation and error handling for incorrect inputs. Additionally, it		

	should provide a streamlined experience for quick access to the driver dashboard.
Actual Result	The login process for drivers is secure and efficient. Drivers can log in using their registered username/email and password, with proper validation and error handling implemented. The process is streamlined, allowing quick access to the driver dashboard for managing rides and other tasks
Pass/Fail	Pass

Test Case 1.3:

Requirement Reference	1	**Project Name**	VDrive (Driver App)!
Test Case Id	1.3	**Test Type**	In app Functionality Testing
Test Case Description	Verification Process		
Test Steps	• Open the driver app. • Complete the signup process. • Check email/SMS for verification code, enter it in the app, and verify.		
Expected Result	Drivers should receive a one-time password (OTP) via SMS or email upon signup to verify their phone number or email address. The OTP should be sent promptly and should be easy to input for verification. This process ensures that drivers' contact information is accurate and helps prevent fraudulent accounts.		
Actual Result	Upon signup, drivers receive a one-time password (OTP) via SMS or email to verify their phone number or email address. The OTP is sent promptly and is easy to input for verification. This process ensures the accuracy of drivers' contact information and enhances the security of the platform by preventing fraudulent accounts. Once the OTP is verified, drivers gain access to the app's features and services		
Pass/Fail	Pass		

Test Case 1.4:

Requirement	1	**Project Name**	VDrive (Driver App)!

Reference			
Test Case Id	1.4	**Test Type**	In app Functionality Testing
Test Case Description	Error Handling		
Test Steps	• Attempt login/signup with invalid credentials. • Verify that appropriate error messages are displayed.		
Expected Result	In case a driver enters incorrect information during signup or login, the app should provide clear error messages indicating the nature of the error. Messages should differentiate between incorrect username/email, password, or other required fields, guiding drivers on how to correct their input		
Actual Result	If a driver enters incorrect information during signup or login, the app promptly responds with informative error messages. These messages clearly indicate the type of error, such as incorrect username/email or password, guiding drivers on how to rectify their input. The error handling ensures a smooth user experience and helps drivers correct their mistakes efficiently.		
Pass/Fail	Pass		

Test Case 2.1:

Requirement Reference	2	**Project Name**	VDrive (Driver App)!
Test Case Id	2,1	**Test Type**	Taxi Booking
Test Case Description	Receiving Taxi Booking Requests		
Test Steps	• Open the driver app. • Ensure that notifications for new taxi booking requests are enabled. • Accept a taxi booking request received from a user		
Expected Result	When a user requests a taxi through the app, drivers should receive a clear notification indicating the booking details, including pickup location, destination, and any special instructions. The notification should be accompanied by audible alerts or vibration to ensure drivers can respond promptly.		

Actual Result	Drivers receive a clear notification on their app when a user requests a taxi, containing all necessary booking details such as pickup location, destination, and any special instructions. The notification is accompanied by audible alerts or vibration to ensure drivers can respond promptly. This ensures that drivers can efficiently accept or decline booking requests based on their availability and proximity to the pickup location.
Pass/Fail	Pass

Test Case 2.2:

Requirement Reference	2	**Project Name**	VDrive (Driver App)!
Test Case Id	2,2	**Test Type**	Taxi Booking
Test Case Description	Navigating to Pickup Location		
Test Steps	• After accepting a booking request, navigate to the user's pickup location using the map navigation feature.		
Expected Result	After accepting a booking request, the driver should have access to integrated navigation features within the app. This navigation system should provide clear and accurate directions to the pickup location, utilizing real-time traffic data to optimize the route and estimate the time of arrival.		
Actual Result	Upon accepting a booking request, the driver can access integrated navigation features within the app. The navigation system offers clear and accurate directions to the pickup location, leveraging real-time traffic data for route optimization. The estimated time of arrival (ETA) is provided to ensure efficient navigation, allowing the driver to reach the pickup location promptly and pick up the passenger		
Pass/Fail	Pass		

Test Case 2.3:

Requirement Reference	2	**Project Name**	VDrive (Driver App)!
Test Case Id	2.3	**Test Type**	Taxi Booking
Test Case	Arrival Confirmation		

Description	
Test Steps	• Upon reaching the pickup location, confirm arrival in the app. • Ensure that the user is notified of the driver's arrival.
Expected Result	Once the driver arrives at the pickup location, the app should prompt them to confirm their arrival. This confirmation ensures that the passenger is notified and can proceed to the vehicle
Actual Result	Upon reaching the pickup location, the driver is prompted by the app to confirm their arrival. This confirmation triggers a notification to the passenger, indicating that the driver has arrived.
Pass/Fail	Pass

Test Case 2.4:

Requirement Reference	2	**Project Name**	VDrive (Driver App)!
Test Case Id	2.4	**Test Type**	Taxi Booking
Test Case Description	Pickup and Drop-off Confirmation		
Test Steps	• After the user boards the taxi, confirm pickup in the app. • Navigate to the user's destination and confirm drop-off upon arrival.		
Expected Result	After picking up a passenger, the driver should be prompted by the app to confirm the pickup. Similarly, upon reaching the drop-off location, the app should prompt the driver to confirm the completion of the trip. These confirmations ensure accurate tracking of completed rides and help maintain transparency between the driver and the passenger.		
Actual Result	The driver app prompts the driver to confirm the pickup of the passenger once they have boarded the vehicle. Similarly, upon reaching the drop-off location, the app prompts the driver to confirm the completion of the trip. These confirmations help maintain accurate records of completed rides and facilitate transparent communication between the driver and the passenger. Additionally, they ensure that the driver receives proper compensation for completed trips.		
Pass/Fail	Pass		

Test Case 2.5:

Requirement Reference	2	**Project Name**	VDrive (Driver App)!
Test Case Id	2.5	**Test Type**	Taxi Booking
Test Case Description	End Ride and Fare Calculation		
Test Steps	• End the taxi ride in the app after dropping off the user. • Verify that the fare is calculated accurately based on distance and time.		
Expected Result	When the driver reaches the drop-off location, they should have the option to end the ride within the app. Upon ending the ride, the app should calculate the fare based on factors such as distance traveled, time taken, and any additional charges. The fare calculation should be transparent and clearly displayed to both the driver and the passenger.		
Actual Result	In the driver app, the driver can end the ride upon reaching the drop-off location. Once the ride is ended, the app calculates the fare based on factors such as distance traveled, time taken, and any additional charges. The fare calculation is transparent and clearly displayed to both the driver and the passenger, ensuring clarity and fairness in pricing. This allows for a smooth and efficient end to the ride process.		
Pass/Fail	Pass		

Test Case 2.6:

Requirement Reference	2	**Project Name**	VDrive (Driver App)!
Test Case Id	2.6	**Test Type**	Taxi Booking
Test Case Description	Payment Processing		
Test Steps	• Ensure that payment from the user is processed smoothly. • Verify that earnings from the ride are updated in the driver's dashboard.		
Expected Result	After the ride is completed and the fare is calculated, the driver app should facilitate payment processing. This involves securely processing the payment from the passenger using their preferred payment method, such as		

	credit/debit card or mobile wallet. The app should ensure that payment transactions are encrypted and comply with relevant security standards.
Actual Result	Once the ride is completed and the fare is calculated, the driver app facilitates payment processing securely. Passengers can pay for the ride using their preferred payment method, including credit/debit cards or mobile wallets. Payment transactions are encrypted to ensure security, and the app complies with relevant security standards to safeguard users' financial information. This allows for seamless and secure payment processing, enhancing the overall user experience .
Pass/Fail	Pass

Test Case 3.1:

Requirement Reference	3	**Project Name**	Vdrive (Driver App)!
Test Case Id	3.1	**Test Type**	Rental Service
Test Case Description	Accepting Rental Requests		
Test Steps	• Open the driver app. • Navigate to the rental service requests section. • Accept a rental service booking and confirm.		
Expected Result	When a rental request is received, the driver should be able to review the details of the request, including the rental period and any special instructions. The driver app should provide a clear option to accept the rental request, allowing the driver to confirm their availability for the requested period		
Actual Result	In the driver app, when a rental request is received, the driver can review the details of the request, such as the rental period and any special instructions provided by the user. The app provides a clear option to accept the rental request, allowing the driver to confirm their availability for the requested period. This ensures efficient communication between the driver and the user and enables smooth processing of rental requests.		
Pass/Fail	Pass		

Test Case 3.2:

Requirement Reference	3	**Project Name**	Vdrive (Driver App)!
Test Case Id	3.2	**Test Type**	Rental Service
Test Case Description	Navigation for Rental Service		
Test Steps	• Accept a rental service booking. • Use navigation feature to reach user's pickup location. • Confirm pickup and navigate to dropoff location.		
Expected Result	Upon accepting a rental request, the driver app should provide integrated navigation features to guide the driver to the pickup location where the rental begins. The navigation system should offer clear and accurate directions, optimizing the route based on real-time traffic data to ensure timely arrival at the pickup location.		
Actual Result	After accepting a rental request, the driver app offers integrated navigation features to guide the driver to the pickup location where the rental begins. The navigation system provides clear and accurate directions, leveraging real-time traffic data to optimize the route. This ensures that the driver can reach the pickup location promptly and begin the rental process smoothly.		
Pass/Fail	Pass		

Test Case 3.3:

Requirement Reference	3	**Project Name**	Vdrive!
Test Case Id	3.3	**Test Type**	Rental Service
Test Case Description	Start and End Rental Service		
Test Steps	• Reach the user's pickup location for a rental service booking. • Start the rental service in the app. • After reaching the dropoff location, end the rental service.		
Expected Result	The driver app should provide clear options for starting and ending the rental service. When the driver arrives at the pickup location, they should have the option to initiate the rental service within the app, marking the beginning of the rental period. Similarly, when the rental period ends and		

	the driver reaches the drop-off location, they should be able to end the rental service, marking the completion of the rental period
Actual Result	In the driver app, the driver can start the rental service upon arriving at the pickup location by initiating the service within the app. This action marks the beginning of the rental period. Similarly, when the rental period ends and the driver reaches the drop-off location, they can end the rental service within the app, marking the completion of the rental period. This streamlined process ensures accurate tracking of rental services and facilitates smooth transitions between rental periods.
Pass/Fail	Pass

Test Case 3.4:

Requirement Reference	3	**Project Name**	Vdrive (Driver App)!
Test Case Id	3.4	**Test Type**	Rental Service
Test Case Description	Fare Calculation		
Test Steps	• Complete a rental service. • Check fare details in the driver app and verify accuracy.		
Expected Result	Upon completing the rental service, the driver app should calculate the fare based on factors such as the duration of the rental period and any additional charges (e.g., mileage, fuel surcharge). The fare calculation should be transparent and clearly displayed to both the driver and the user, ensuring fair pricing and accurate billing.		
Actual Result	After completing the rental service, the driver app calculates the fare based on factors such as the duration of the rental period and any applicable charges. The fare calculation is transparent and clearly displayed to both the driver and the user, ensuring transparency and accuracy in pricing. This enables fair billing for the rental service and enhances trust between the driver and the user.		
Pass/Fail	Pass		

Test Case 3.5:

Requirement Reference	3	**Project Name**	Vdrive (Driver App)!
Test Case Id	3.5	**Test Type**	Rental Service
Test Case Description	Payment and Earnings		
Test Steps	• Complete a rental service. • Verify earnings in the driver app dashboard. • Check for payment processing.		
Expected Result	The driver app should facilitate secure payment processing for completed rides or rental services. Drivers should have access to detailed earnings reports, showing their total earnings for a given period, breakdown of earnings per ride or rental, and any deductions or fees. Payment processing should be transparent and timely, ensuring drivers receive their earnings promptly.		
Actual Result	In the driver app, secure payment processing is facilitated for completed rides or rental services. Drivers have access to detailed earnings reports, which provide information on their total earnings for a specified period, breakdown of earnings per ride or rental, and any deductions or fees. Payment processing is transparent and timely, ensuring that drivers receive their earnings promptly and enabling them to track their earnings effectively. This enhances transparency and trust between the platform and the drivers.		
Pass/Fail	Pass		

Test Case 4.1:

Requirement Reference	4	**Project Name**	Vdrive (Driver App)!
Test Case Id	4.1	**Test Type**	SOS
Test Case Description	SOS Alert Notification		
Test Steps	• Open the driver app. • Ensure that notifications are enabled. • Trigger an SOS alert from a user account and verify receipt of notification.		

Expected Result	In case of an emergency, the driver app should include an SOS alert feature that allows drivers to quickly send distress signals to emergency contacts or authorities. Upon triggering the SOS alert, the app should notify emergency contacts and provide them with the driver's location and relevant details of the situation.
Actual Result	The driver app includes an SOS alert feature for emergencies. When activated, the app promptly notifies emergency contacts with the driver's location and relevant details of the situation. This ensures that drivers can receive timely assistance in emergency situations, enhancing their safety and peace of mind while on the road
Pass/Fail	Pass

Test Case 4.2:

Requirement Reference	4	**Project Name**	Vdrive (Driver App)!
Test Case Id	4.2	**Test Type**	SOS
Test Case Description	SOS Response		
Test Steps	• Receive an SOS alert notification. • Acknowledge the alert and respond accordingly.		
Expected Result	Upon receiving an SOS alert from a driver, the app should immediately notify designated emergency contacts or authorities. The app should provide real-time updates on the driver's location and facilitate communication between emergency responders and the driver to ensure prompt assistance.		
Actual Result	When an SOS alert is received from a driver, the app promptly notifies designated emergency contacts or authorities. Real-time updates on the driver's location are provided, enabling emergency responders to locate and assist the driver quickly. The app facilitates communication between emergency responders and the driver, ensuring prompt assistance in emergency situations. This robust SOS response mechanism enhances driver safety and provides peace of mind while on the road.		
Pass/Fail	Pass		

Test Case 4.4:

Requirement Reference	4	**Project Name**	Vdrive (Driver App)!
Test Case Id	4.4	**Test Type**	SOS
Test Case Description	SOS Alert Acknowledgment		
Test Steps	• Receive an SOS alert notification. • Acknowledge receipt of the SOS alert.		
Expected Result	When an SOS alert is sent by a driver, the driver app should include a feature to acknowledge receipt of the SOS alert. This acknowledgment confirms that emergency contacts or authorities have been notified and are responding to the emergency situation.		
Actual Result	In the driver app, upon sending an SOS alert, drivers have the option to acknowledge receipt of the alert. This acknowledgment confirms to the system that emergency contacts or authorities have been notified and are responding to the emergency situation. This feature helps ensure that drivers receive timely assistance and provides reassurance during emergency situations.		
Pass/Fail	Pass		

SUMMARY:

We tested our Application and based on the comprehensive testing conducted, we can confidently state that our Application **"VDrive"** has successfully met all the required criteria and passed all the tests. The application has demonstrated its excellence in performance, functionality, security, usability and user satisfaction.

CHAPTER – 07

7.1 INTRODUCTION:

This chapter will summarize all of the work completed during the final year of the project, as well as the challenges, limitations, and future work for this project. In this chapter all the major and minor work will be discussed. We have included the limitations of the system in order to help the users to understand the system better. With the passing time the software has a lot vacancies for better additions. This will make the application more effective, and useful.

7.2 SYSTEM LIMATATION AND CHALLENGES:

You're in Bahria Town and need a ride. No more waiting by the roadside or hailing random cabs. With our innovative app, you can request a comfortable and reliable cab in just a few taps

1. **Set Your Location:** The app will automatically detect your location within Bahria Town. You can confirm this or manually set your pickup point if needed.
2. **Choose Your Service:** Select the type of service you require. Options might include:
    - **Regular Cab:** For a quick ride within Bahria Town.
    - **Rental Car:** Choose a car for a longer-term rental, perfect for extended stays or errands.
    - **Road Assistant:** In case of a breakdown, flat tire, or other car troubles, request assistance from our dedicated team.
3. **See Fare Estimates (For Cab Service):** The app will provide you with an estimated fare based on your chosen destination and distance. This allows for transparent pricing before you book your ride.
4. **Request Your Ride:** Once you've confirmed everything, simply tap a button to request your chosen service. The app will connect you with the nearest available driver or roadside assistant.
5. **Track Your Ride:** You can see the live location of your approaching cab or assistant on the app's map. This ensures peace of mind and allows you to plan your arrival.
6. **Payment Options (For Cab & Rentals):** Choose your preferred payment method, such as credit card, debit card, or Bahria Town wallet integration (if available).
7. **Rate Your Experience:** After completing your ride or receiving assistance, you can rate your experience and provide feedback to help us improve our services.

SOS Feature for Emergencies:

The app will also be equipped with a prominent SOS button. In case of an accident or any other emergency situation, simply tap the SOS button, and the app will:

- Immediately connect you to local emergency services.
- Share your live location with emergency responders for faster assistance.

Additional Features (to consider):

- **Schedule Rides:** Pre-book a cab for a later time, ensuring you have transportation secured for important appointments.
- **Track Your Rental:** Easily monitor the remaining time on your car rental and manage extensions if needed.
- **Promotions & Discounts:** Keep an eye out for special offers and discounts on rides and rentals within the app.

Stay tuned for the app's launch and experience a new level of convenience and peace of mind when it comes to getting around Bahria Town.

7.3 References:

1. **Transportation Industry Reports**:
    - Reports from organizations like Deloitte, PwC, and McKinsey often provide insights into trends, challenges, and opportunities in the transportation industry. They may offer valuable data and analysis to guide your project.
2. **Market Research Reports**:
    - Market research reports specific to the transportation and mobility sector in Pakistan can provide information about consumer preferences, market size, growth projections, and competitive landscape.
3. **Government Regulations and Policies**:
    - Understanding local regulations and policies related to transportation services, road safety standards, and emergency services in Bahria Town is crucial. Government websites, local transportation authorities, and legal databases can be valuable sources of information.
4. **Case Studies**:
    - Analyzing case studies of successful cab and rental services, as well as road assistance applications, can provide insights into effective business models, strategies, and technologies employed in similar projects worldwide.
5. **Technology and Development Resources**:
    - Explore resources related to app development, GPS tracking systems, emergency service integration, and other relevant technologies. Platforms like GitHub, Stack Overflow, and developer forums can be helpful for technical guidance and troubleshooting.
6. **Customer Surveys and Feedback**:
    - Conducting surveys or gathering feedback from potential customers in Bahria Town can provide valuable insights into their transportation needs, preferences, and pain points. This data can inform the design and features of your service.
7. **Industry Events and Conferences**:

- Participating in transportation industry events, conferences, and networking sessions can help you stay updated on the latest trends, technologies, and best practices in the field.

8. **Academic Research Papers**:

    - Academic journals and research papers in fields such as transportation engineering, urban planning, and human-computer interaction may contain relevant studies and findings that can inform your project.

By leveraging these resources and conducting thorough research, you can develop a well-informed and robust plan for your cab and rental service with a road assistance application in Bahria Town.

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SUMMARY:

In summary, this chapter will examine the limitations faced during the development and operation of the "Market Help" mobile application, highlighting the challenges associated with data accuracy, user-generated content, technical compatibility, and navigation accuracy. However, it will also present an exciting vision for the future work of the application, encompassing user engagement, personalization, online marketplace integration, expansion to

other cities, and a commitment to privacy and security.

APPENDIX A:

Appendix A: Survey Questionnaire

1. Please indicate your age range:
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55 and above
2. How frequently do you use cab services in Bahria Town?
    - Daily
    - Weekly
    - Occasionally
    - Rarely
    - Never
3. What factors are most important to you when choosing a cab service? (Select all that apply)
    - Price
    - Availability
    - Safety
    - Cleanliness
    - Reliability
    - Ease of booking
    - Other (please specify): _____
4. Have you ever experienced difficulty in accessing emergency services during a road-related emergency in Bahria Town?
    - Yes
    - No
5. How likely are you to use a cab service equipped with a road assistance application that includes an SOS feature for emergencies?
    - Very likely

- Likely
- Neutral
- Unlikely
- Very unlikely

DETAILED GANTT CHART:

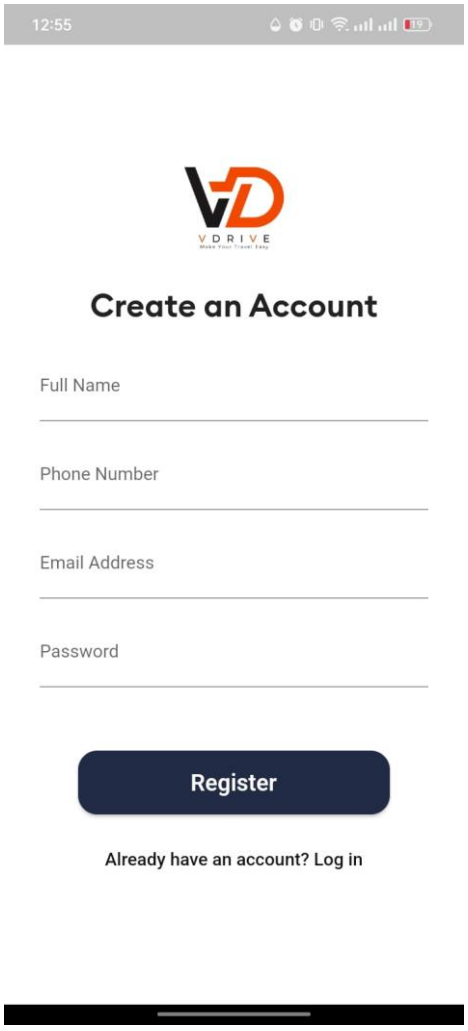
Task #	Task Description	Start Date	End Date	Deleiverable	
		Week 1 14th October- 21st October			
	Designing Logo	14th October	14th October	A structure of the App will be created and the connection of the database will also be established	
	Connect Project with Firebase	17th October	17th October		
	Create UI for Login and Signup Page of User	18th October	21st October		
		Week 2 22nd October- 28th October			
	Create a Homepage and adding Google Map in home page	22nd October	23rd October	User are able to sign up and sign in through their credentials	
	Navigation and Set Route	24th october	24th October		
	implement backend functionality code for signup page	25th October	26th October		
	implement backend code for login page	27th October	28th October		
		Week 3 29th October - 5th November			
	Testing and Fixing Errors	29th October	30th October	User are able to see their current location and able to search their destination address	
	Progress Dialogue	31st October	31st October		
	Navigation Drawer	1st November	1st November		
	Getting User Current Location and enable geo coding	2nd November	2nd November		
	reverse geocoding and display address,feature to save the curr	3rd November	3rd November		
	search and create Destination Package	4th November	5th November		
		Week 4 6th November - 21st November			
	Enabling Google Place Api deserialize place predictions result & display it on listview get place details lat lng of selected place	6th November	6th November	finalise user feature for booking/ cancelling rides.	
	get direction from pickup to dropoff location using google direction api draw polyline on map & fit polyline on map - LatLng Bounds & add Markers Circles	7th November	15th november		
	design ride fare estimates panel	16th November	17th November		
	Feature for Calculate ride fares amount using distance and duration	18 th November	21st november		
	request ride and find driver design panel	18 th November	21st november		
	create ride request and cancel ride request	18 th November	21st november		
	if already user loggedin and signout user	18 th November	21st november		
		Week 5 22nd November - 27th November			
	Version 1 releasing Testing and fixing errors	22nd november	23rd november	Driver can register their vehicle User are able to see the online drivers	
	register and save Driver and Driver's Car Info	24th november	25th November		
	bottom Navigation for Driver App Home Screen.	25th November	26th November		
	set google map __ geo Locater services for Driver app	26th Novemer	27th November		
	driver online and offline panel	26th November	27th November		

Figure 10 Gantt Chart

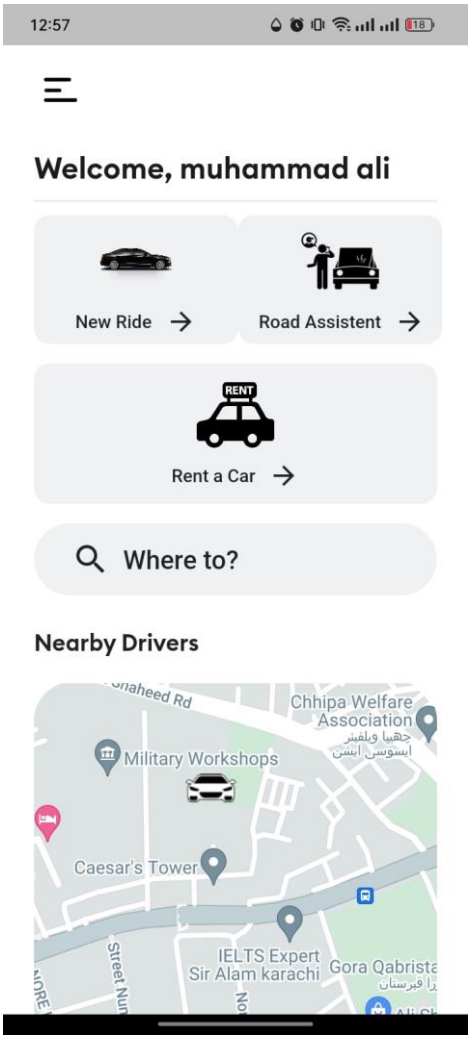
Figure 10.1 Gantt Chart

Week 6 28th November - 1st December					
	get live Location updates and save to Database at Real Time using GeoFire	28th November	28th November	Online and Offline Feature	
	implement Go Online and Go Offline feature	29th November	30th November		
	version 2 releasing fixing errors and loopholes	30th November	1st December		
Week 7 1st December - 5th December					
	set geofire and handle geofire callbacks to find nearby drivers	1st December	2nd December		
	display nearby drivers to rider (on rider map) with custom car	3rd December	5th December	User can see their nearby drivers and rides	
Week 8 Mid Term					
Week 9 6th December - 13th December					
	Creating a panel for SOS feature	6th December	8th December	user can call the available SOS Service	
	Implementing Backend of the Sos Feature	9th December	13th December		
Week 10 14th December - 21st December					
	Creating a Panel for Rental Function	14th December	16th December	user can use the rental function	
	Implementing Backend of the rental Function	17th December	21st December		
Week 11 22nd December - 29th December					
	version 2 released and its unit testing	22nd december	24th December		
	quality Assurance,Manual Testing	25th December	26th December		
	Bug Fixing	27th December	29th December	Loophole and bug fixing	

Screen Shots:

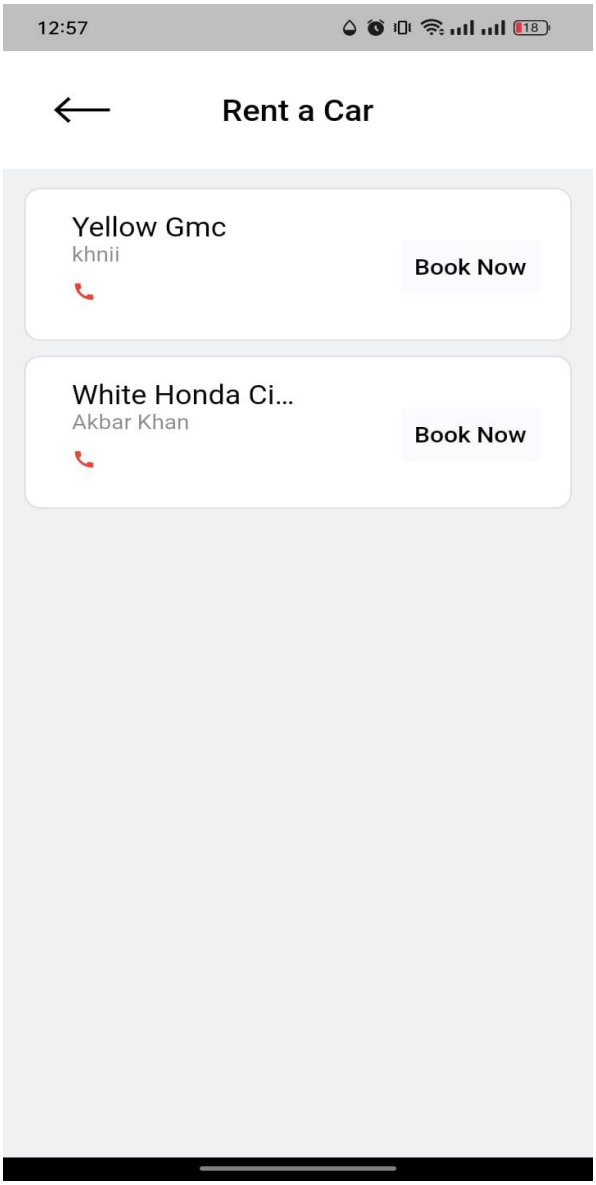


Registration screen for User



Home screen for User

Figure 11 Screenshots



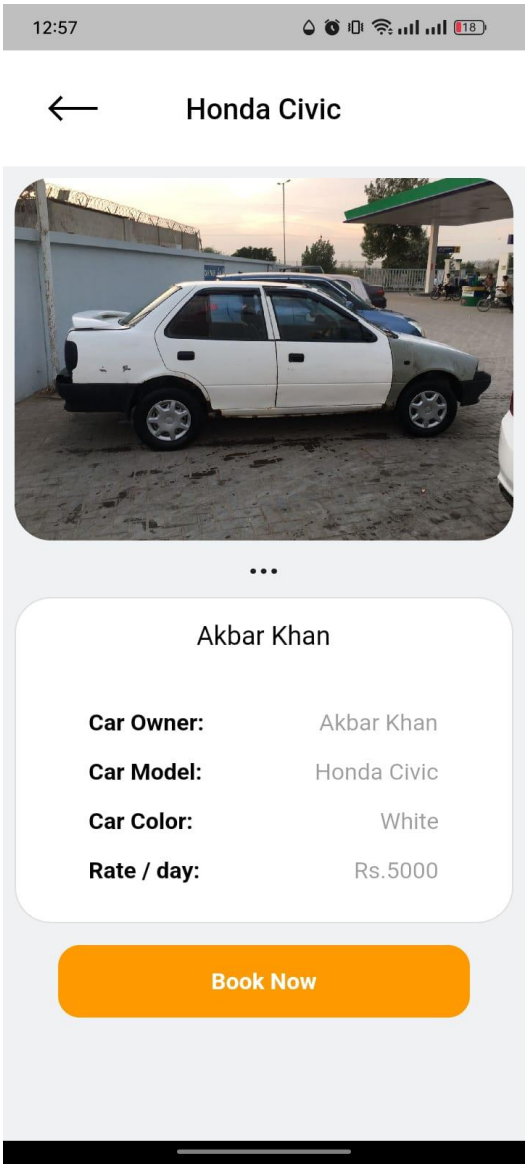
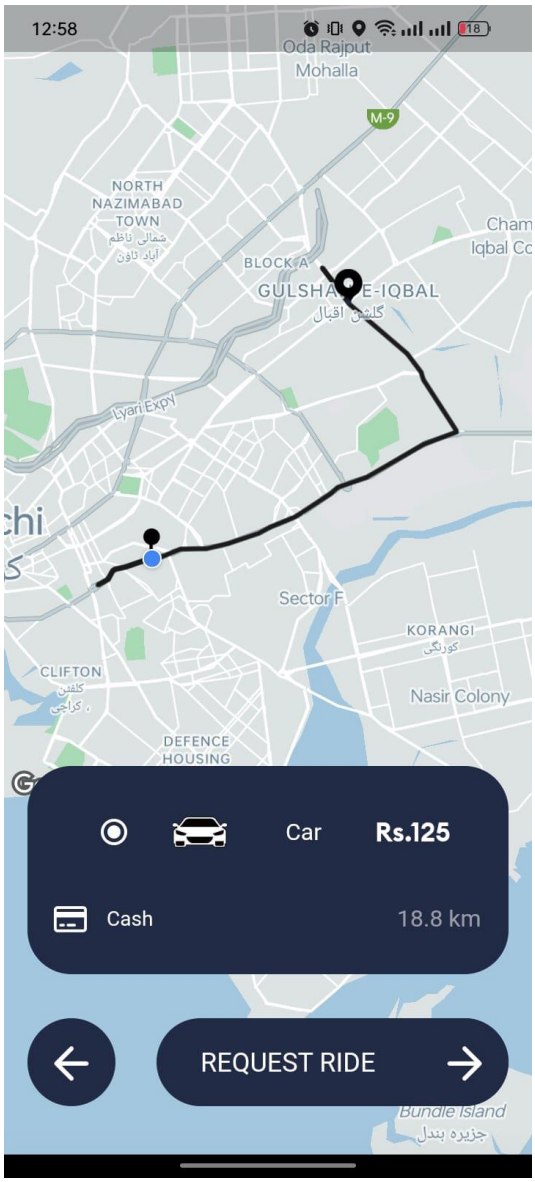


Figure 11.1 Screenshots

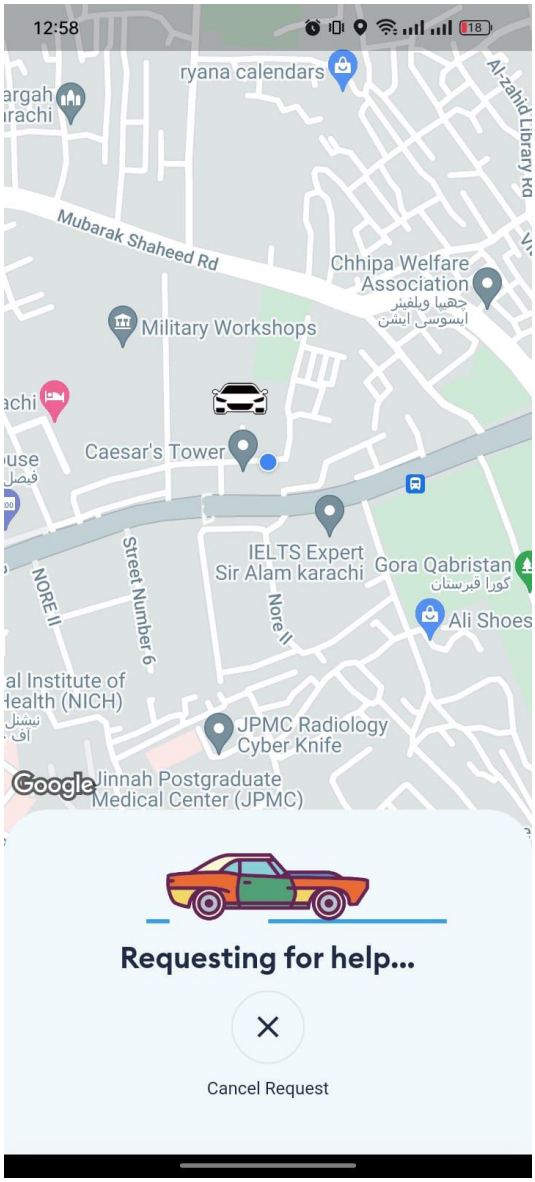
Rent a Car screen for User

Rent a car screen for User

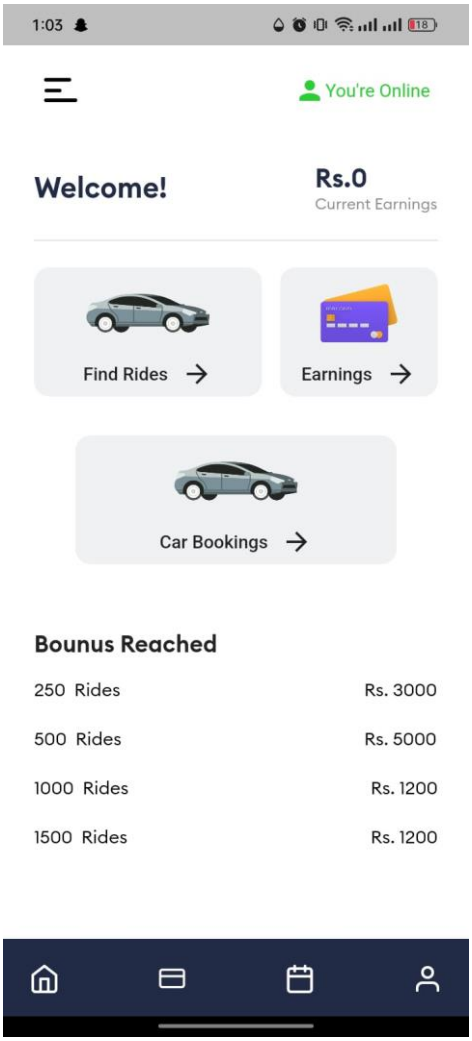
figure 11.2 Screenshots



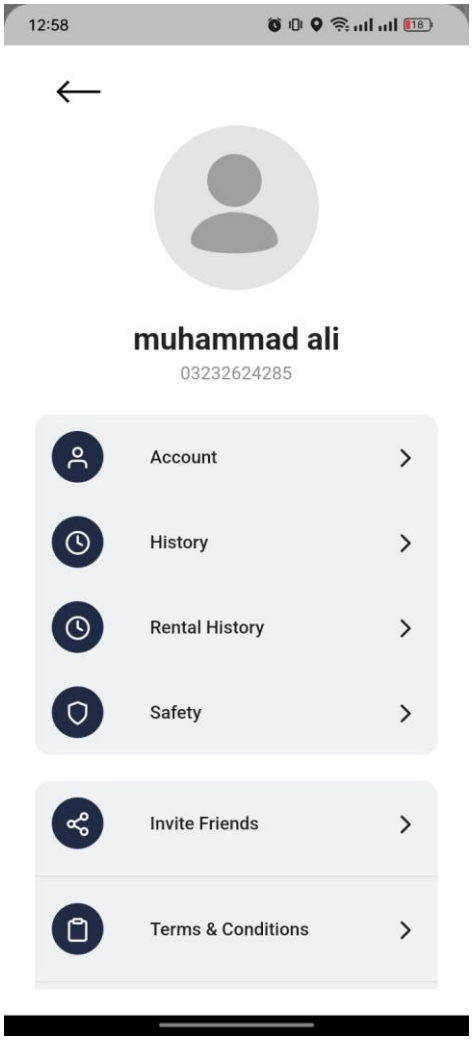
Ride Booking Screen for User



Requesting Ride Booking



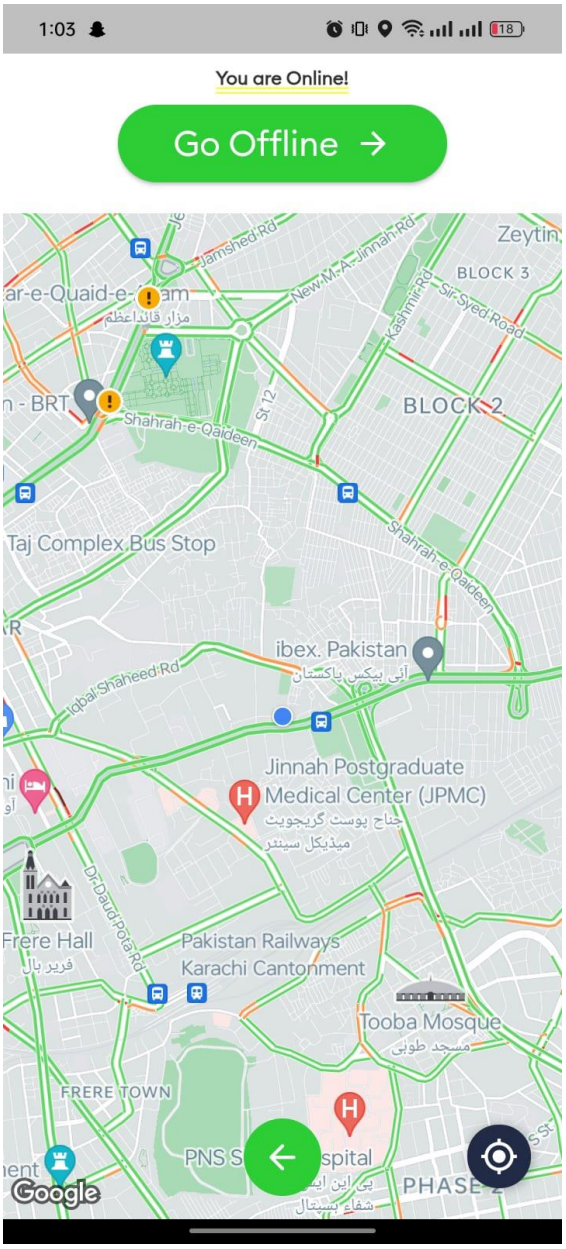
Drivers Homepage Menu



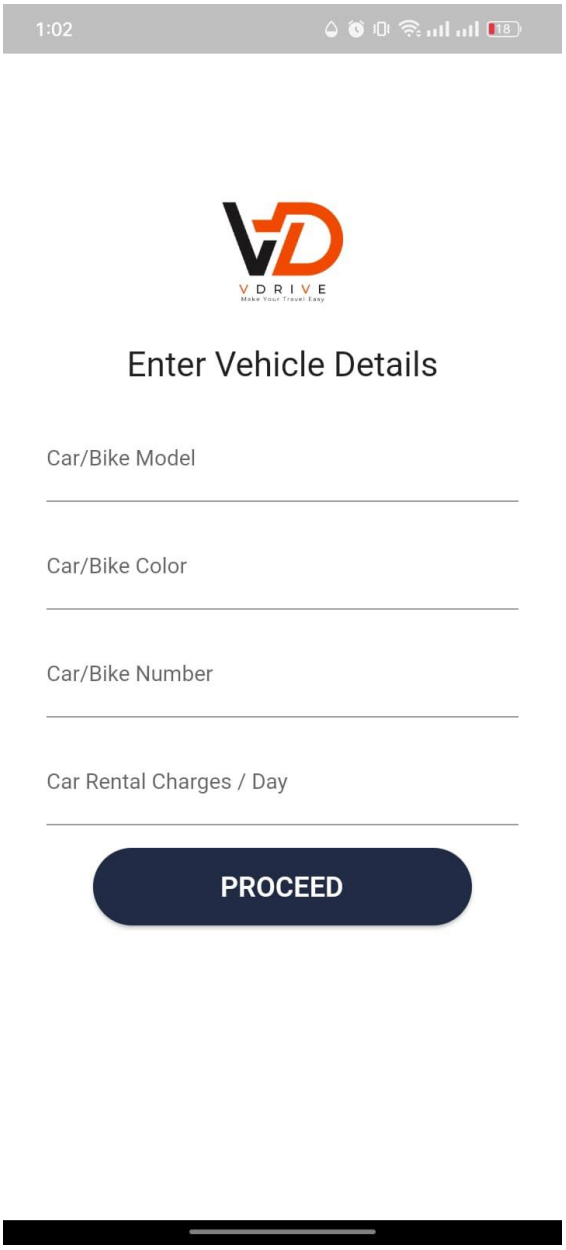
User Side Bar Menu

Figure 11.3 ScreenShots

figure 11.4 Screenshots

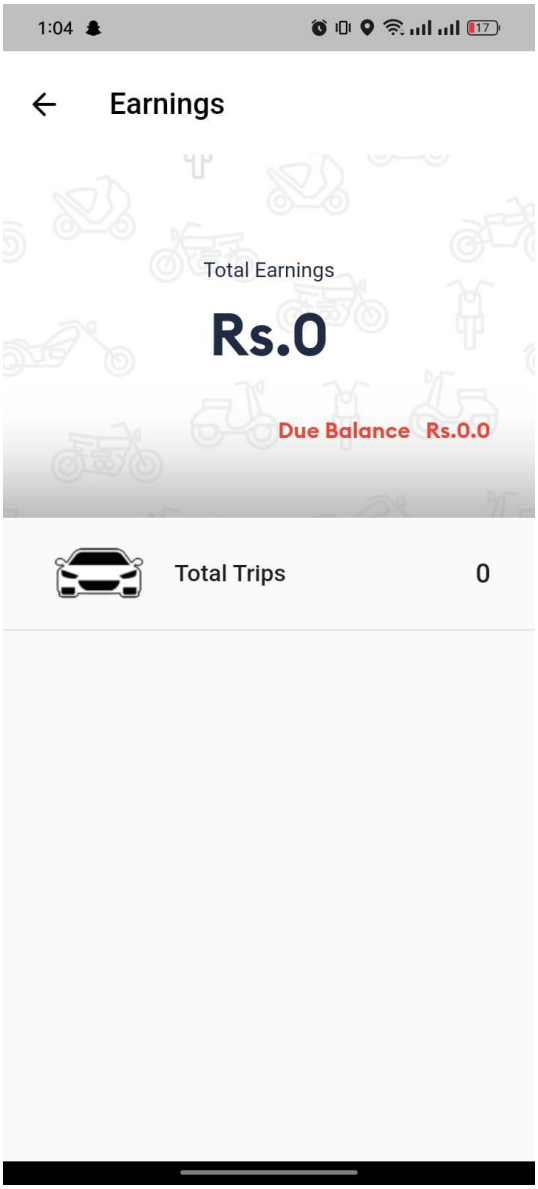


Driver Go Online Screen

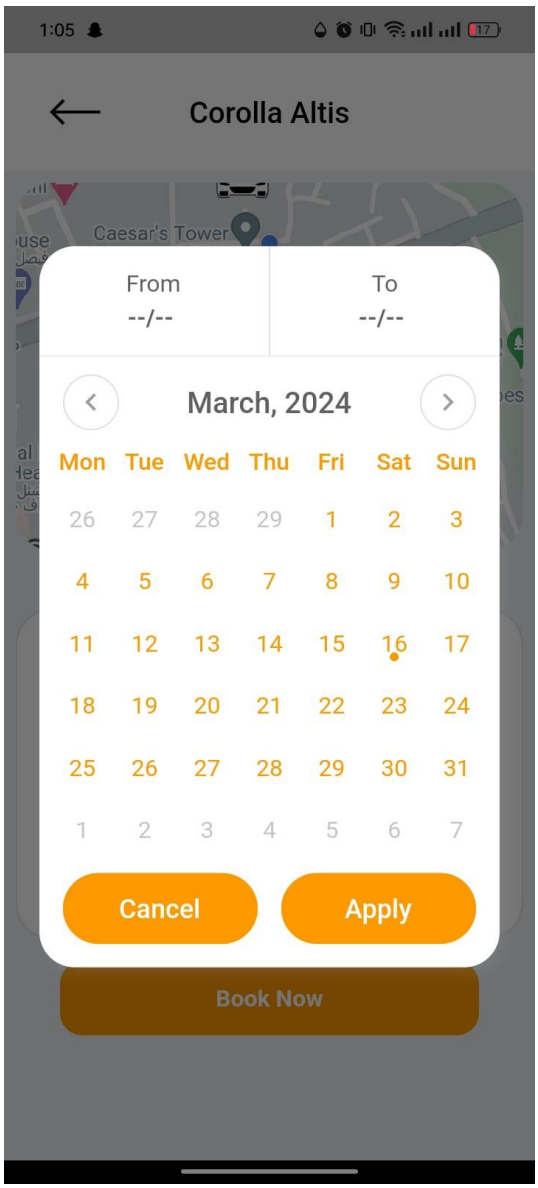


Driver Car Registration Details Screen

figure 11.5 Screenshots

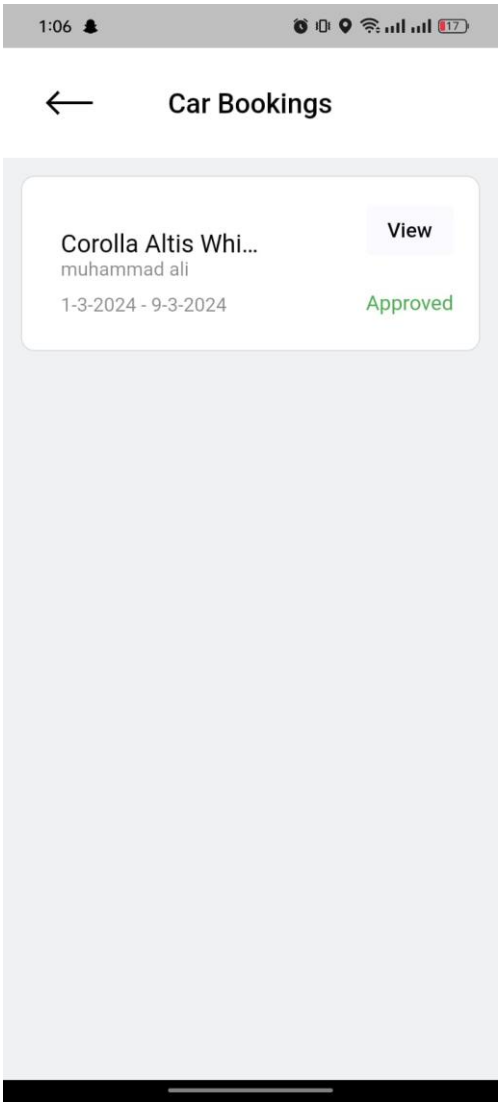


Driver Earning Screen

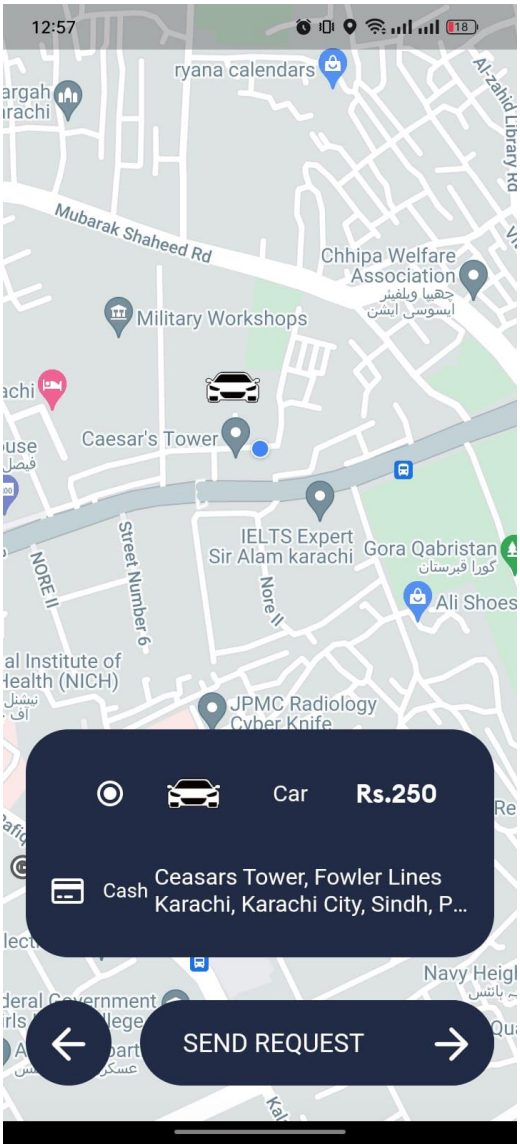


User Rent A car Booking Screen

figure 11.6 Screenshot



Driver Car Booking Screen



Requesting Road Assitant Screen for USer

APPENDIX B

Appendix B: Competitor Analysis

Competitor Name	Key Features	Pricing Model	Market Presence
Competitor A	- GPS tracking - In-app payments - 24/7 support	- Fixed fare per km - Surge pricing during peak hours	- Established presence in major cities
Competitor B	- Emergency SOS button - Driver ratings - Loyalty rewards	- Variable pricing based on demand - Subscription options	- Growing presence in suburban areas
Competitor C	- Real-time driver tracking - Multiple vehicle options (e.g., sedan, SUV) - Advanced route optimization	- Dynamic pricing based on distance and time - Promotional discounts - Membership program	- Nationwide coverage
Competitor D	- Instant booking - Cashless payments - Driverless car option	- Flat rate pricing - Premium pricing for additional services (e.g., Wi-Fi)	- Strong presence in urban centers
Competitor E	- Eco-friendly vehicle options - Carbon offset program - Community engagement initiatives	- Tiered pricing based on vehicle type and distance - Additional charges for peak hours	- Focus on sustainability and corporate social responsibility

GitHub Project Link:
https://github.com/mustaqeem438/Final-Year-Project-