FINAL YEAR PROJECT

2023 – 2024

Project: DRIVECARTE (Carpool Application)

Group Member:

1. **Sheryar Asghar** **Sid : 11158**
2. **Malik Ahsan Iqbal** **Sid : 11728**
3. **Muhammad Ahmed** **Sid : 11200**
4. **Mahad Waseem** **Sid : 10356**

Under Supervision of

SIR MUHAMMAD NOMAN BAIG

ABSTRACT

The purpose of this app is to provide affordable ride to university students. It will provide a communication platform between car/bike owners, passengers, university staff. Students/staff will input there destination and the request of the ride will be send to the online riders, after acceptance of request user will be able to call the rider when theinformation of rider when the information of rider is visible in screen. Rider will be able to accept the request by his own choice. Admin will be able to add update and delete the information and will be seeing the online riders and user. Admin will be able to see the ride history as well.

ACKNOWLEDGEMENT

In the name of Allah, the most Gracious and the Most Merciful.

Peace and blessing of Allah be upon Prophet Muhammad ﷺ

First, praise of Allah, for giving us this opportunity, the strength and the patience to complete our FYP finally, after the challenges and difficulties. We would like to thank our supervisor **SIR NOMAN BAIG** ,our mentor **SIR SAAD** for his guidance, motivation and most his significant contribution in this project, expert **DR SOHAIL IMRAN** and **SIR AZAM KHAN** for giving us the opportunity to work on this project. We would also like to thanks our parents for financial and moral support and our friends who have helped and motivated us throughout. May Allah reward them all abundantly. Ameen

DEDICATION

This report is dedicated to PAF-KIET University, our Teacher, our Supervisor, our Parents, our fellow colleagues and the hard-working students of PAF-KIET, with a hope that they will succeed in every aspect of their Academic Career and this project may help them in any aspect of their life.

TABLE OF CONTENTS

LIST OF FIGUERS

CHAPTER 1

1. Introduction

The objective of this project is to develop a comprehensive ride-sharing platform consisting of a user app, rider app, and admin panel. The ride-sharing platform aims to provide a seamless experience for users to request rides and for riders to accept and complete those ride requests. The user app allows users to register and log in, input their destination, searchfor available riders, and rate the rider at the end of the ride. The rider app enables riders to sign in, provide details of their car, accept ride requests, and follow standard ride procedures.The admin panel empowers administrators to manage user and rider information, including adding, updating, and deleting details, as well as accessing the ride history between riders and users. This report presents an overview of the project, its objectives, and the functionalities of each component, providing insights into the architecture, implementation details, user interface design, testing, and potential future enhancements

1.1. Motivations

The development of the ride-sharing platform is driven by several key motivations. Firstly, the transportation industry is facing challenges related to convenience and reliability. There is a growing demand for seamless and efficient transportation options that can cater to the needsof users in a fast-paced urban environment. By offering a ride-sharing platform, we aim to provide users with a convenient and reliable mode of transportation that can be accessed easily through their smartphones

1.2. Problem Statement

The problem statement of this project is to develop a comprehensive ride-sharing platform consisting of a user app, rider app, and admin panel that addresses these challenges. The platform aims to provide users with a convenient and reliable mode of transportation, optimize

vehicle utilization, reduce congestion, and promote sustainability. It also seeks to enhance the overall user experience through user-friendly interfaces, streamlined booking processes, real-time ride tracking, and rider rating features

1.3. Objectives and Contributions

Our objective is to get ride partner as quickly as possible at one platform without lagging. This will be ahuge contribution to the transport industry.

1.4. Project Scope

The scope of this project encompasses the development of a comprehensive carpool platform Consisting of a user app, rider app, and admin panel. The user app will allow users to register, Log in, input their destination, search for available riders, see carpool schedules, communicate with rider, see cost of ride at time of booking and rate the rider at the end of the ride. The rider app will enable riders to sign in, provide details of their car, accept ride requests, add carpool schedules and see no of passengers in the ride requests and follow standard ride procedures, update profile The admin panel will provide administrators with the ability to manage user and rider information, including adding, updating, and deleting details, as well as accessing the ride history between riders and users. The project will focus on implementing the core functionalities of the ride- sharing platform, including user registration and authentication though OTP verification, ride request management, contact details for user and rider for efficient communication, real-time tracking of rides, carpooling fare as ticket per seat and ride fare calculation per kilometer and payment mode cash on completion of ride and a rating system for riders. The user interface design will prioritize a seamless and best experience for both users and riders, with considerations for ease of use of users of application, visual aesthetics, and responsive design.

1.5. Organization of the Report

This project (DRIVECARTE) presented by Malik Ahsan Iqbal , Muhammad Ahmed , Sheryar Asghar and Mahad Waseem under the direction of Project Advisor and approved by the Project

examination committee of COCIS. In this project the technology used is flutter, dart, firebase .

CHAPTER 2

2. Literature Review/Process Review

2.1. Introduction

We have gone through multiple ideas and in the end we decided to work on something unique so we started working on this project dynamic table reservation through conductive as conductive paint is not common or known to most of us and that's what makes it unique. Our goal was to revolutionize restaurant industry by introducing this product in the market. Through this product we can easily reserve, order, call waiter and record their performances in no time. It detects quickly when we put our finger on the paint and sends signal to the webapplication.

2.2. Literature Review

The objective of this project is to develop a comprehensive ride-sharing app so that I can share my ride and reduce my commuting cost, consisting of a user app, rider app, and admin panel. The ride-sharing platform aims to provide a seamless experience for users to request rides and for riders to accept and complete those ride requests. The user app allows users to register and log in, input their destination, search for available riders see carpool schedules ,book ride ,communicate with rider ,see cost of ride at time of booking , fare calculation as ticket for each seat in carpooling ride and fare calculation per kilometer in ride booking and fare payment as cash on completion of ride for both types of rides ,rate the rider at the end of the ride ,see ride history, update profile .The rider app enables riders to sign in, provide details of their car, accept ride requests, add carpool schedules ,see number of passengers in ride requests and follow standard ride procedures for ride ,update profile .The admin panel empowers administrators to manage user and rider information, including adding, updating, and deleting details, as well as accessing the ride history between riders and users. This srs presents an overview of the project, its objectiv

es, and the functionalities of each component, providing insights into the architecture, implementation details, user interface design, testing, and potential future enhancements.

2.3. Functional and Non-Functional Requirements

2.3.1. Functional Requirements

- Register
- Login
- Email Verification or Phone number OTP verification
- View online riders
- View details of the riders
- Request a ride
- Accept a ride
- Live Tracking
- Feedback and rating
- Add update delete by admin
- Ride history

2.3.2. Non-Functional Requirements

- Performance
- Scalability
- Reliability
- Security
- Compatibility
- Usability
- compliance

2.4. Project Significance

The project significance is that it will solve many problems for the Students and the transportindustry and give boost to their sales.

2.5. Software Platform

We are using flutter for our mobile application and React for our web application,

2.6. Programming Language

Regarding app development, Flutter and Dart have some clear advantages. First, Dart is a programming language optimized for mobile apps, while Flutter is a new platform built specifically for building mobile apps. These two factors make Dart a better choice if you wantto design an app from the ground up or if you want to use existing code bases to build your app. additionally, both languages offer rich user interfaces that are perfect for business applications.

Flutter is a mobile development SDK created by Google. It is similar to the popular iOS and Android development frameworks but offers some unique features that make it more suitable for developing mobile apps. In addition, Flutter is fast, free, and easy to use, making it an excellent choice for businesses looking for a mobile solution.

2.7. Scalability

- We can add as many table as we want according to our need by adding more conductive boards.
- We edit deals at any time.

2.8. Services

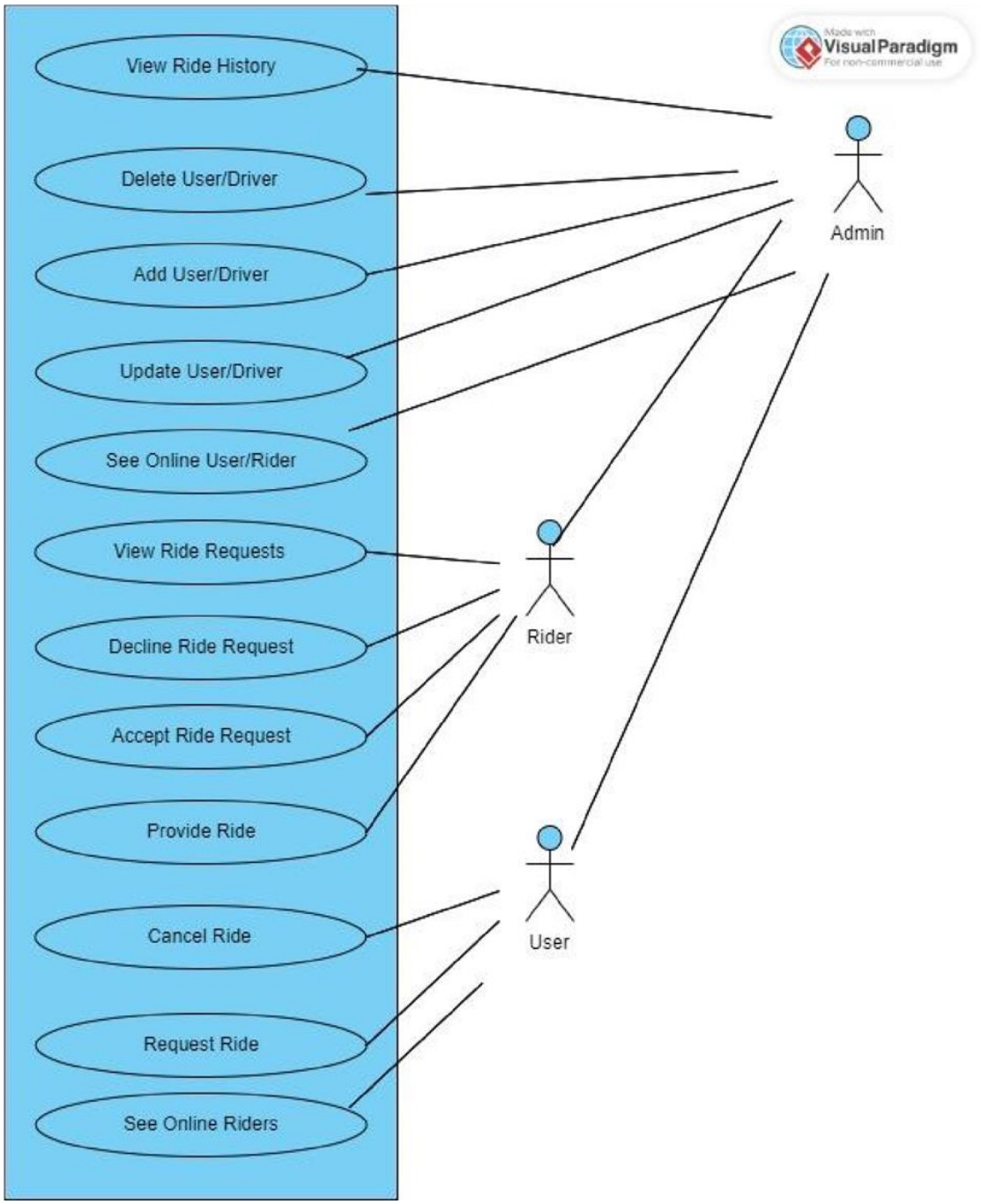
- Algorithms for best deals.
- Conductive board API for reservation, live tracking, google map, location suggestion.
- Web pusher API for push notification.

CHAPTER 3

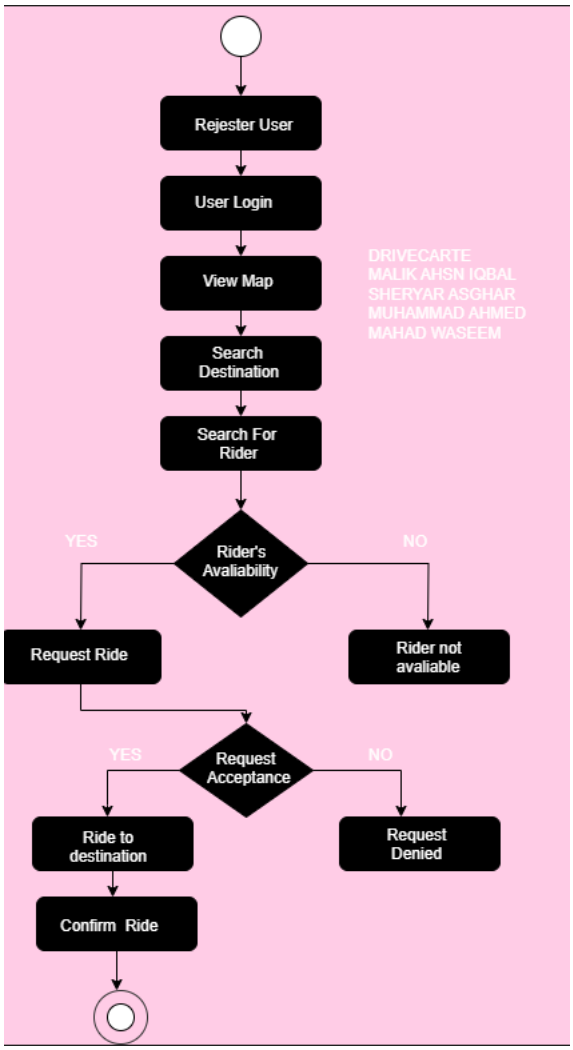
3. Projects diagrams

Based on the above literature review and project scope here are some diagrams, which illustrates that what will be our project or the system is capable to reach the desired results.

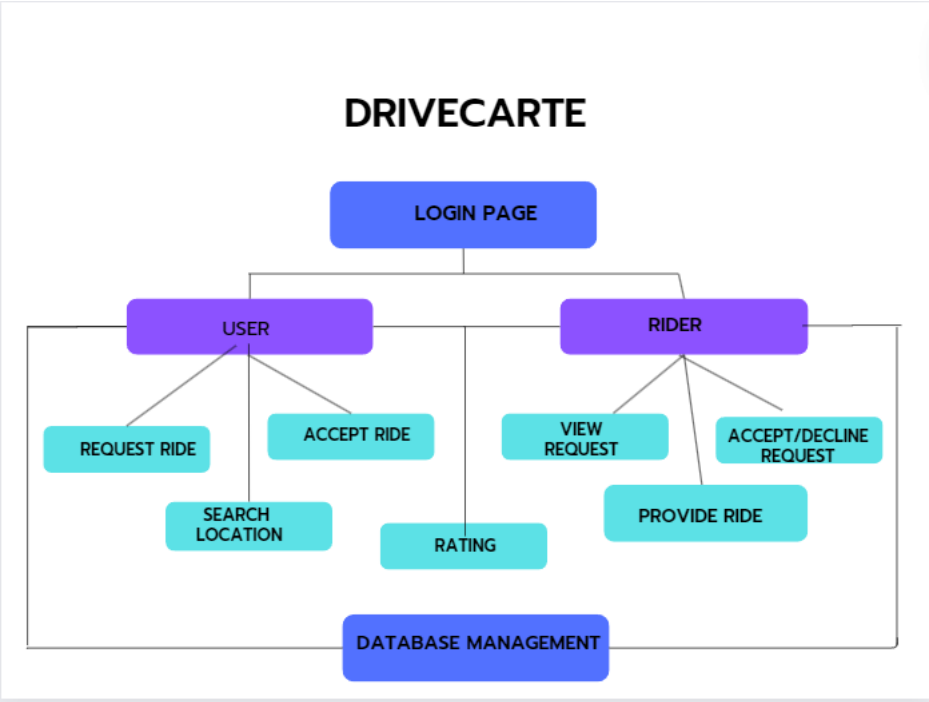
3.1. Use Case Diagrams



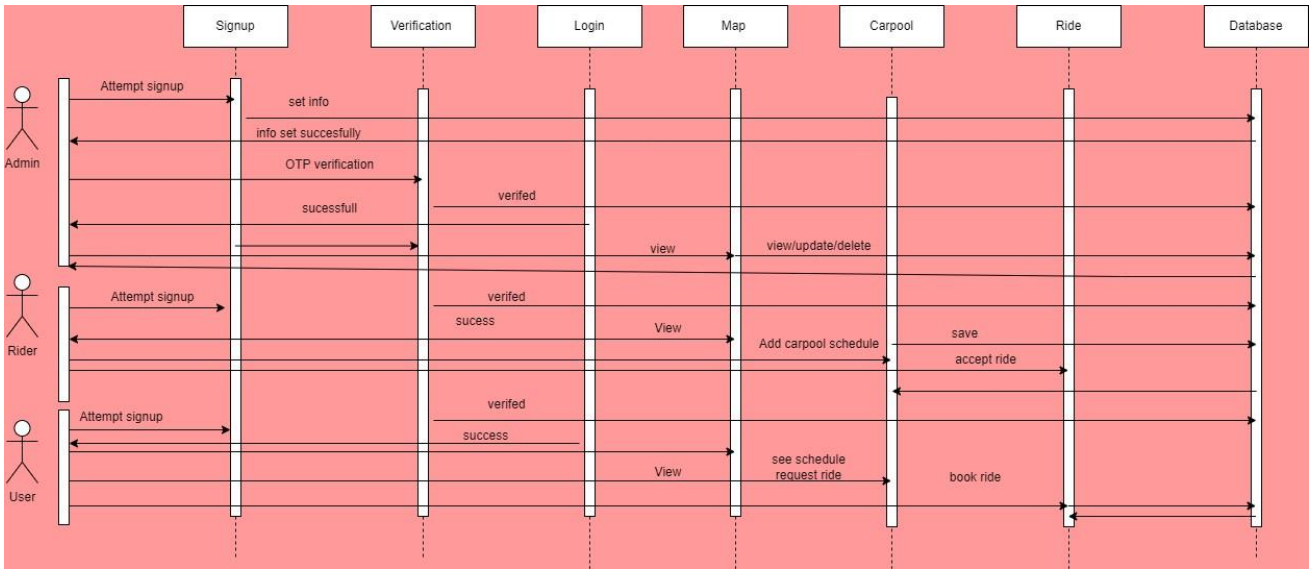
3.2. Activity diagram



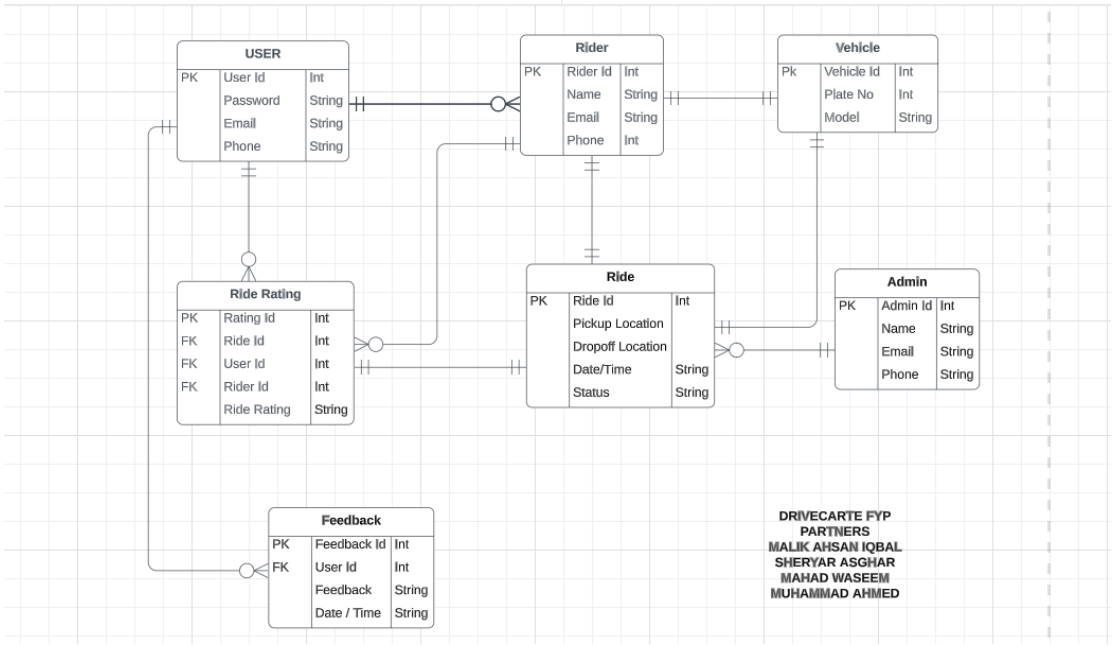
3.3. Block Diagram



3.4. Sequence Diagram



3.5. ER Diagram



3.6. Inside Project

3.6.1. ANDROID SMARTPHONE

A smart phone is a portable device that combines mobile telephone and computing functions into one unit. They are distinguished from feature phones by their stronger hardware capabilities and extensive mobile operating systems, which facilitate wider software, internet

(including web browsing over mobile broadband), and multimedia functionality (including music, video, cameras, and gaming), alongside core phone functions such as voice calls and text messaging. Smartphones typically contain a number of metal–oxide–semiconductor (MOS) integrated circuit (IC) chips, include various sensors that can be leveraged by pre-included and third-party software (such as a magnetometer, proximity sensors, barometer, gyroscope, accelerometer and more), and support wireless communications protocols (such as Bluetooth, Wi-Fi, or satellite navigation). Improved hardware and faster wireless communication (due to standards such as LTE) have bolstered the growth of the Smartphone industry. In the third quarter of 2012, one billion smart phones were in use worldwide. Global Smartphone sales surpassed the sales figures for feature phones in early 2013.

The development of the smart phone was enabled by several key technological advances. The exponential scaling and miniaturization of MOSFETs (MOS transistors) down to sub-micron levels during the 1990s–2000s (as predicted by Moore's law) made it possible to build portable smart devices such as smart phones, as well as enabling the transition from analog to faster digital wireless mobile networks (leading to Edom’s law).[7][8][9] Other important enabling factors include the lithium-ion battery, an indispensable energy source enabling long battery life, invented in the 1980s and commercialized in 1991,] and the development of more mature software platforms that allowed mobile device ecosystems to develop independently of data providers.

3.7. Used Technologies

3.7.1 FLUTTER:

Flutter is Google's portable UI toolkit for crafting beautiful, natively compiled applications for mobile, web, and desktop from a single code-base. Flutter works with existing code, is used by developers and organizations around the world, and is free and open source. Flutter is an open-source UI software development kit used to create applications for both Android and iOS. Instead of writing different code for each operating system, it uses the same code base to create a cross-platform mobile application. Flutter's popularity among developers has skyrocketed over the past few years due to many Flutter advantages it brings to devs: faster code writing, reduced testing time, rich documentation, and easy learning and usage. Flutter also has a great community that is constantly growing and exchanges experience on Flutter. There are many advantages of Flutter as a cross platform mobile development framework, including the ability

to create web applications that have a native look and feel on both Android and iOS devices, reduced development time and costs, and increased flexibility. Is Flutter frontend or backend? Flutter is a framework that can be used for both frontend and backend development. However, most Flutter developers use it for the former. This is because Flutter makes it easy to create beautiful, interactive user interfaces.

3.7.1.1 Which apps use Flutter?

Abbey Road Studios. Reinventing the songwriting process with Flutter. Alibaba Group. Alibaba scales China's largest second-hand marketplace with Flutter. Beike helps users solve housing problems with Flutter.

- BMW. ...
- Google Pay. ...
- Byte Dance. ...
- Crowdsource. ...
- Dream11.

3.7.2. DART:

Dart is a client-optimized language for developing fast apps on any platform. Its goal is to offer the most productive programming language for multi-platform development, paired with a flexible execution runtime platform for app frameworks. Dart is an object-oriented language. It supports object-oriented programming features like classes, interfaces, etc. A class in terms of OOP is a blueprint for creating objects. A class encapsulates data for the object. Dart gives built-in support for this concept called class. In a nutshell, Dart is an object-oriented, class defined, single inheritance language using a C-style syntax that trans compiles optionally into JavaScript. It supports interfaces, mixing, abstract classes, reified generics, optional typing, and a sound type system. Lastly, Dart is always improving quite a bit.

3.7.2.1 What are the features of Dart?

The Dart language has special support for the following:

- Numbers (int, double)
- Strings (String)

- Booleans (bool)
- Lists (List, also known as arrays)
- Sets (Set)
- Maps (Map)
- Runes (Runes; often replaced by the characters API)
- Symbols (Symbol)

3.7.3. FIREBASE:

Firebase is an app development platform that helps you build and grow apps and games users love. Backed by Google and trusted by millions of businesses around the world. Firebase Hosting works out-of-the-box with Firebase services, including Cloud Functions, Authentication, Realtime Database, Cloud Firestore, and Cloud Messaging. You can build powerful microservices and web apps using these complementary Firebase services. Firebase provides a real-time database which allows you to store data as well as sync data among users in real-time. It also provides multiple authentication systems, various APIs, hosting system, cloud messaging, etc. Firebase real-time database is a cloud-hosted database where data stored in JSON format.

3.7.3.1 Is Firebase a database or a server?

Firebase is your server, your API and your datastore, all written so generically that you can modify it to suit most needs. Yeah, you'll occasionally need to use other bits of the Google Cloud for your advanced applications. One of the key advantages for Firebase's Realtime Database is that it works offline by using local cache on the device to store any changes made. When app connectivity is resumed, the data is synced. In 2018, Google released their newest database called Firestore, and like its predecessor it is a NoSQL database.

3.7.3.2 Which application uses Firebase?

There are many popular companies that use Firebase. Some notable examples are:

- Alibaba
- Lyft
- Trivago

- Venmo
- NPR

3.7.4. VISUAL STUDIO CODE

Visual Studio Code is a lightweight but powerful source code editor, which runs on your desktop and is available for Windows, MacOS and Linux. It comes with built-in support for JavaScript, Typescript and Node.js and has a rich ecosystem of extensions for other languages (such as C++, C#, Python, PHP, Go) and runtimes (such as .NET and Unity).

Visual Studio includes a code editor supporting IntelliSense (the code completion component) as well as code refactoring. The integrated debugger works both as a source-level debugger and a machine-level debugger. Other built-in tools include a code profiler, designer for building GUI applications, web designer, class designer, and database schema designer. It accepts plug-ins that expand the functionality at almost every level—including adding support for source control systems (like Subversion and Git) and adding new toolsets like editors and visual designers for domain-specific languages or toolsets for other aspects of the software development lifecycle (like the Azure DevOps client: Team Explorer). The most basic edition of Visual Studio, the Community edition, is available free of charge. The slogan for Visual Studio Community edition is "Free, fully-featured IDE for students, open-source and individual developers"

3.7.5. ANDROID STUDIO

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on Jet Brains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems or as a subscription-based service in 2020. It is a replacement for the Eclipse. Android Development Tools (E-ADT) as the primary IDE for native Android application development. Android Studio 4.1 running on Linux Developer(s) Google, Jet Brains Stable release 4.1.1 (November 10, 2020; 52 days ago) Preview release 4.2 Beta 2 (December 14,

2020; 18 days ago) Written inJava, Kotlin and C++ Operating system Windows, macOS, Linux, Chrome OS Size727 to 877 MB

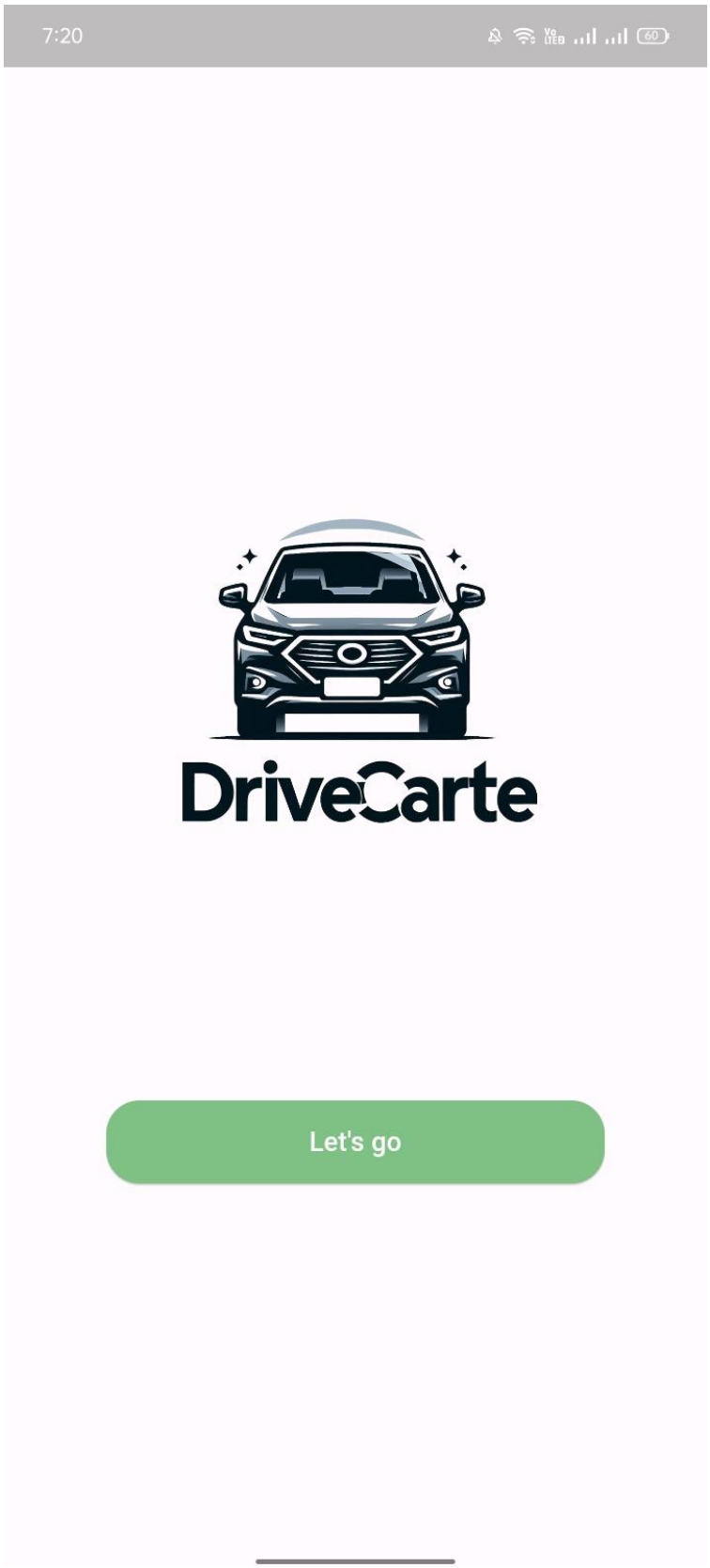
Type Integrated development environment (IDE) License Freeware +Source code Website developer.android.com/studio/index.html Visual Studio Code is a lightweight but powerful source code editor, which runs on your desktop and is available for Windows, MacOS and Linux. It comes with built-in support for JavaScript, Typescript and Node.js and has a rich ecosystem of extensions for other languages (such as C++, C#, Python, PHP, Go) and runtimes (such as .NET and Unity).Android Studio is the official Integrated Development Environment (IDE) for Android app development, based on IntelliJ IDEA. On top of IntelliJ's powerful code editor and developer tools, Android Studio offers even more features that enhance your productivity when building Android apps, such as:

- A flexible Gradle-based build system
- A fast and feature-rich emulator
- A unified environment where you can develop for all Android devices
- Apply Changes to push code and resource changes to your running app without restarting your app
- Code templates and GitHub integration to help you build common app features and import sample code
- Extensive testing tools and frameworks
- Lint tools to catch performance, usability, version compatibility, and other problems

CHAPTER NO 5

4. GUI of Android Application

4.1. USER APP



7:20

Discover Carpools

Create your account and share your ride preferences.
Find carpools that match your schedule.

Skip Next

7:21

Convenient Rides

Book rides hassle-free. Experience comfort and convenience while sharing rides with others.

Skip

Next

7:21

24/7 Accessibility

Our service is available around the clock. Enjoy the flexibility of booking rides whenever you need them.

Skip

Done

7:21

Sign up to Drivecarte

DriveCarte

Sign up as user

Name

Email

Password

0/8

Phone Number

0/11

Sign up

Already have an account? Sign in

7:21

Sign in to Drivecarte

DriveCarte

Sign in as user

Email

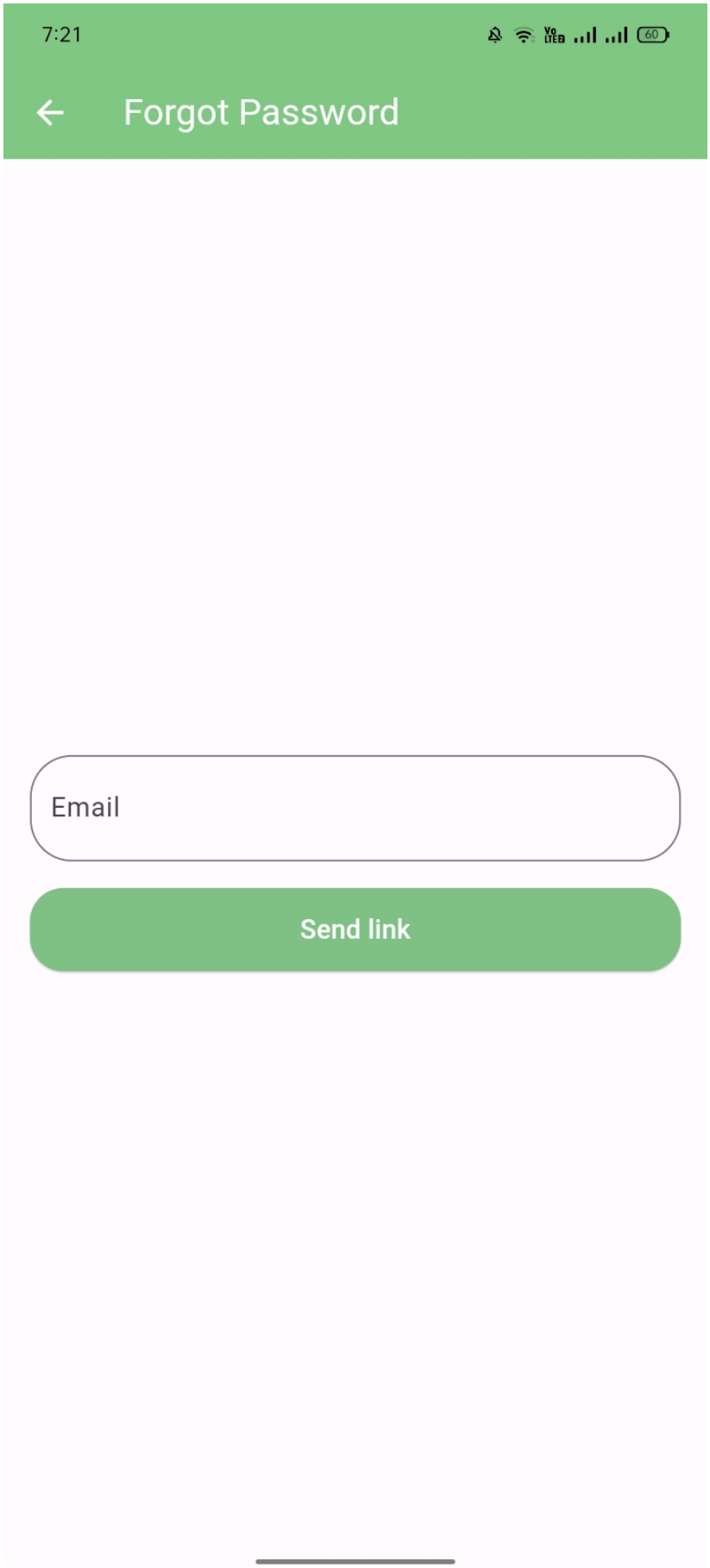
Password

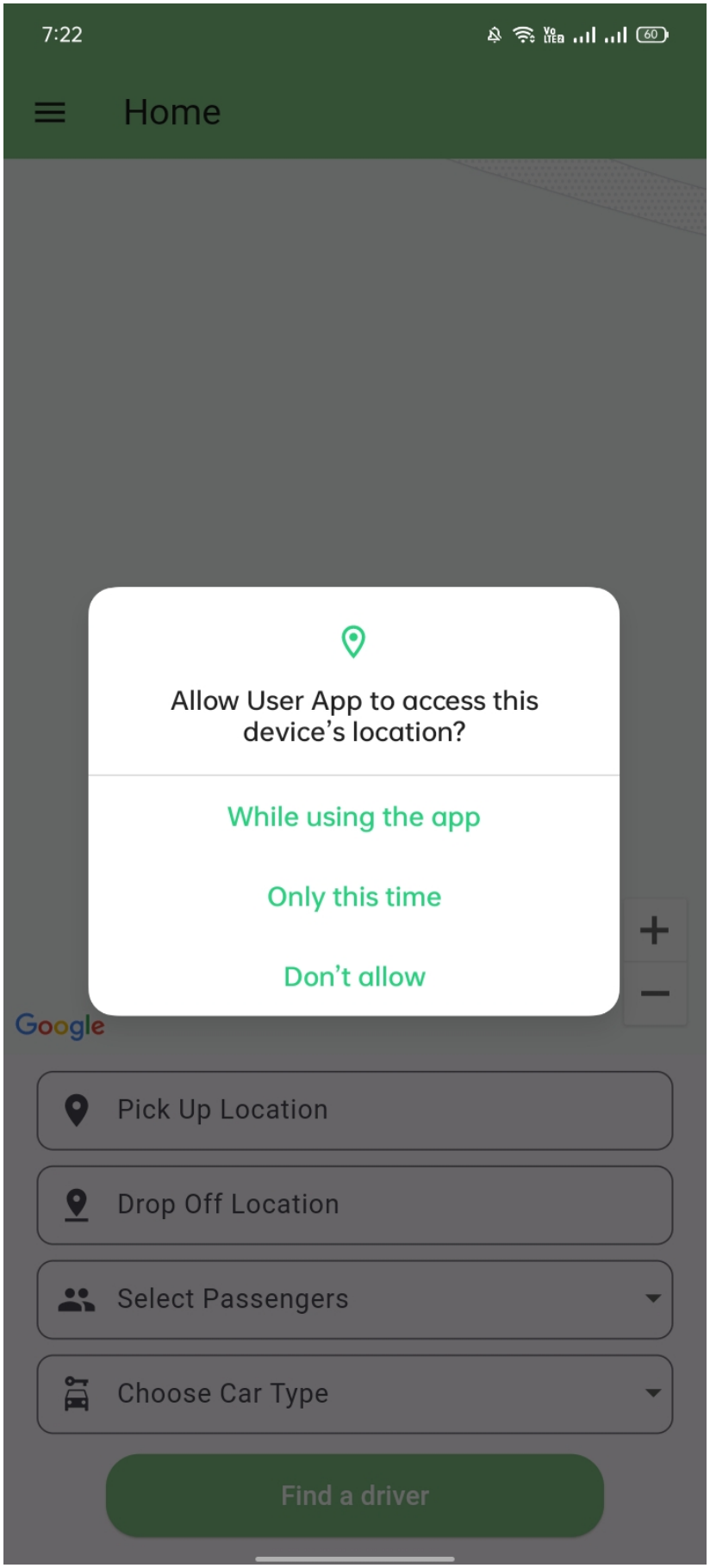
0/8

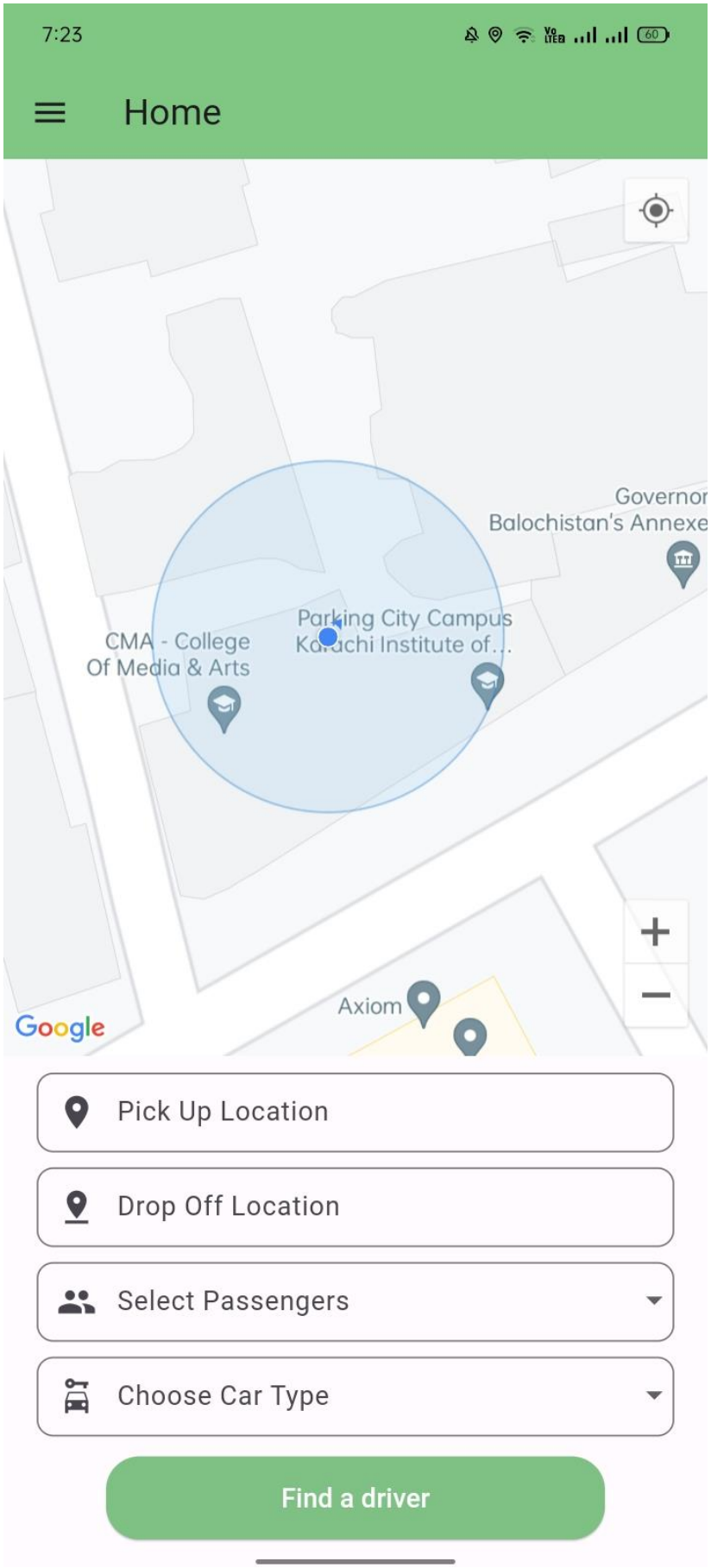
Forgot Password

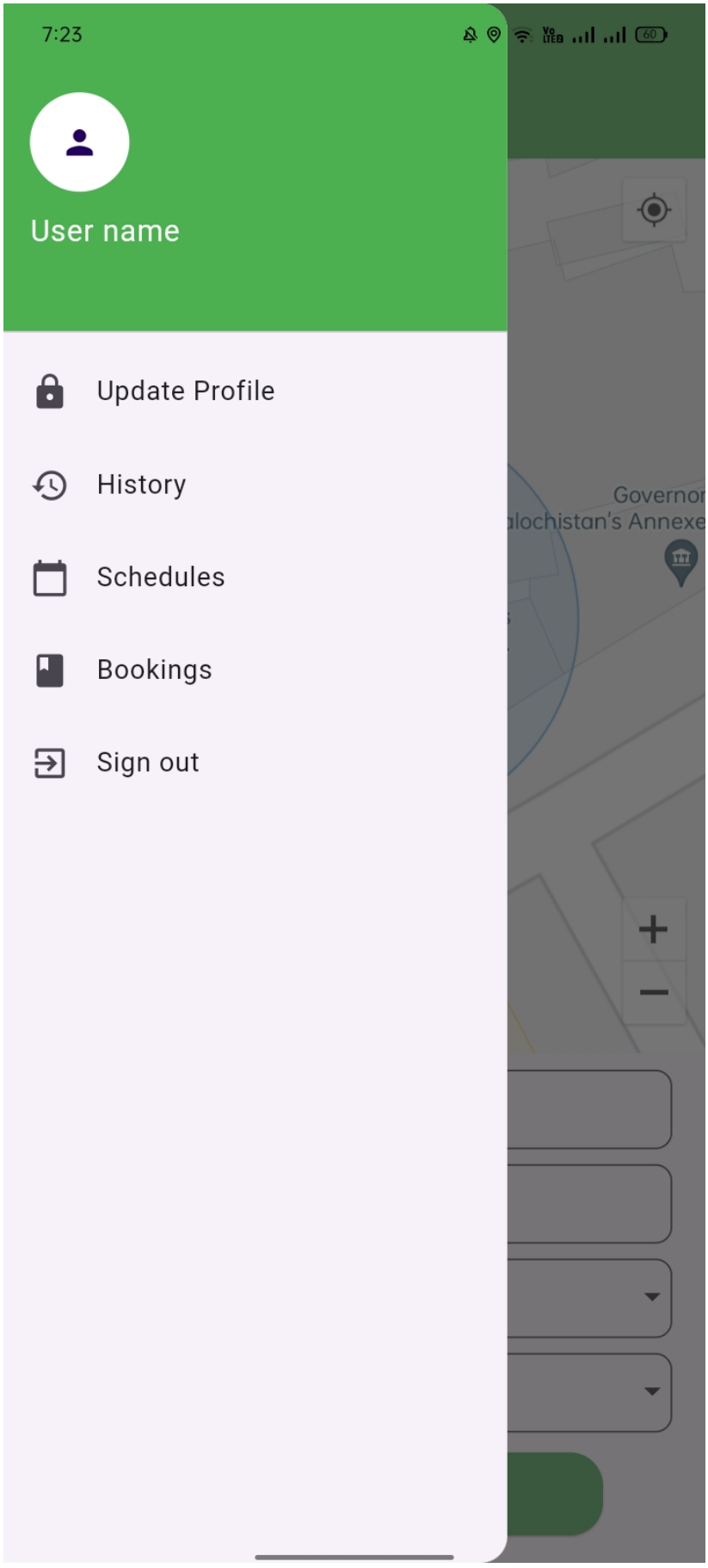
Sign in

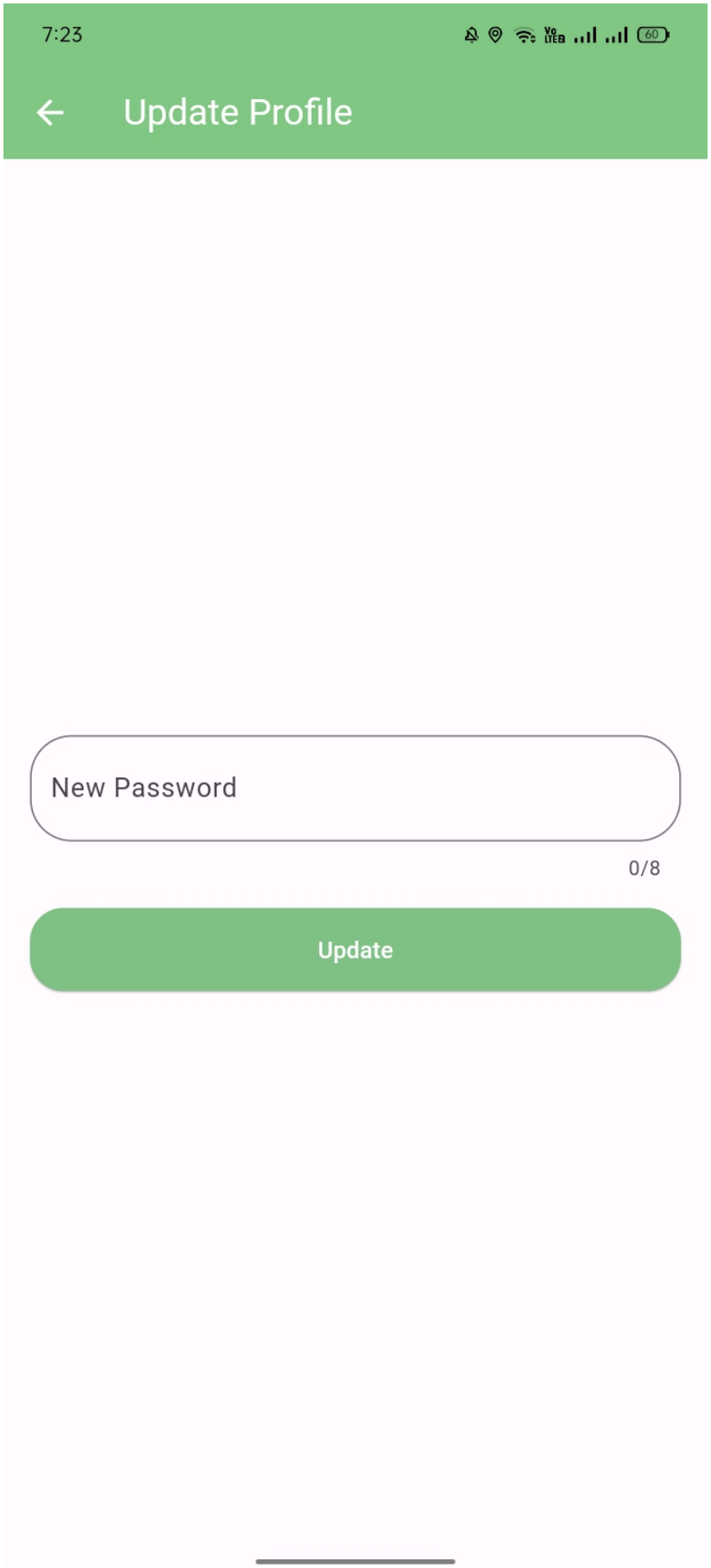
Don't have an account? Sign up


7:21
Forgot Password
Email
Send link


7:22
Home
Allow User App to access this device's location?
While using the app
Only this time
Don't allow
Google
Pick Up Location
Drop Off Location
Select Passengers
Choose Car Type
Find a driver

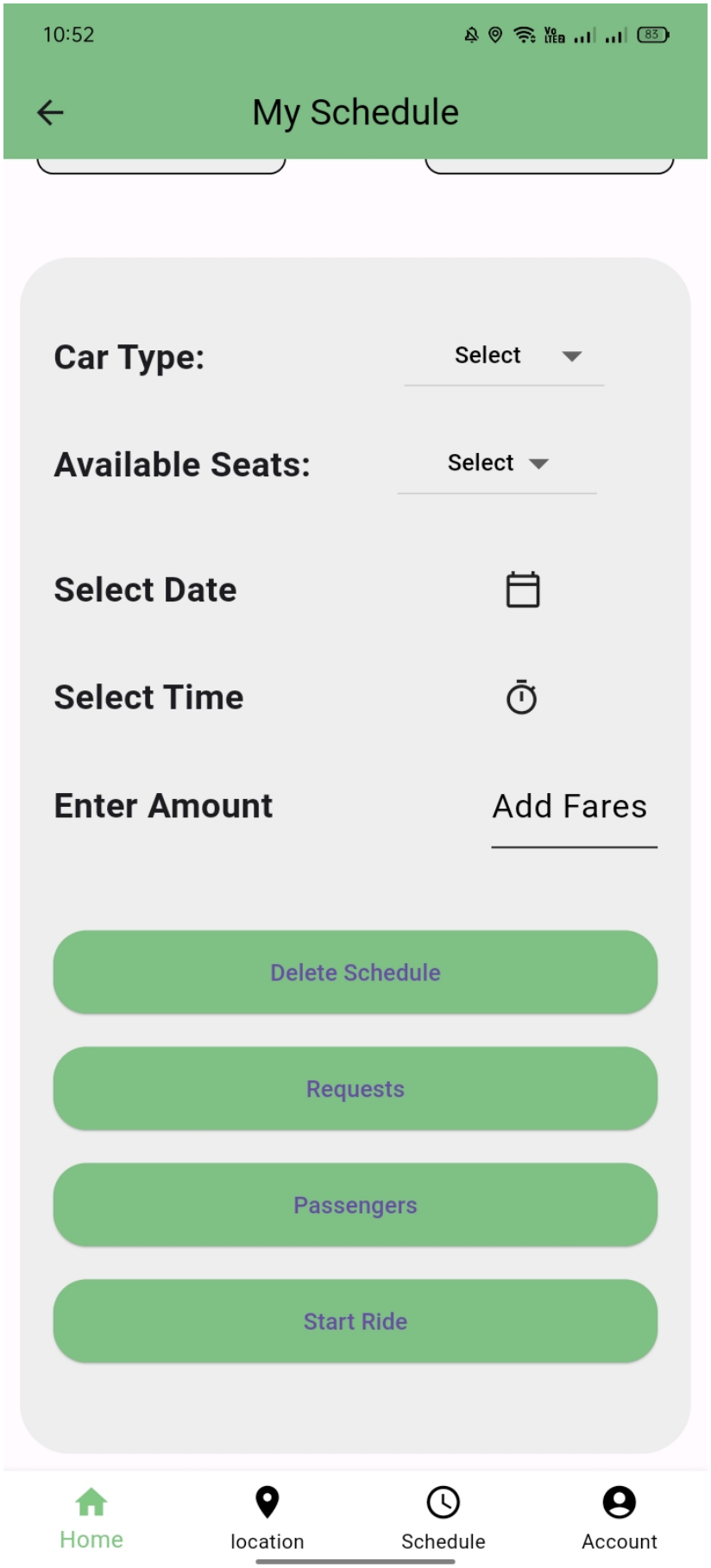

7:23
Home
Governor
Balochistan's Annexe
Parking City Campus
Karachi Institute of...
CMA - College
Of Media & Arts
Axiom
Google
Pick Up Location
Drop Off Location
Select Passengers
Choose Car Type
Find a driver

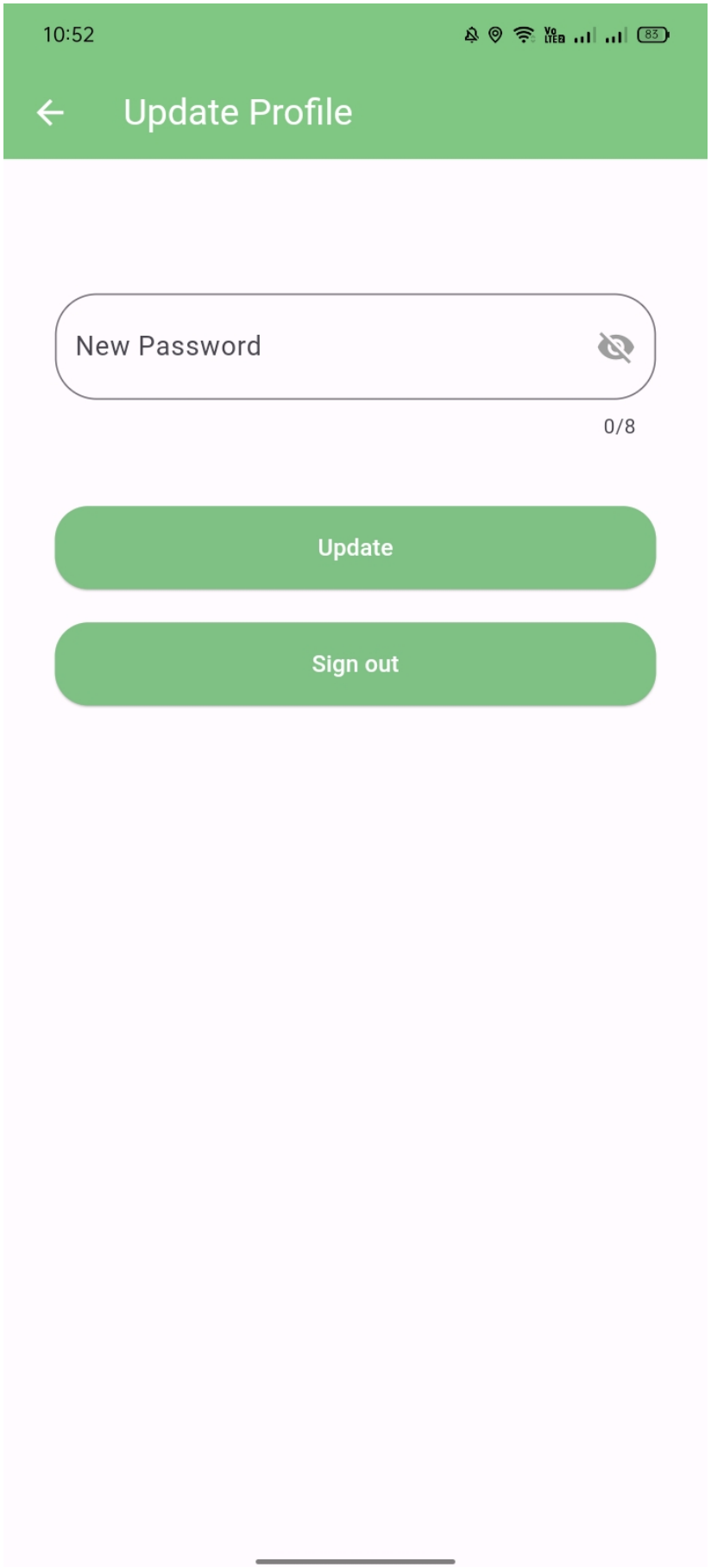

7:23
User name
Update Profile
History
Schedules
Bookings
Sign out
Governor
alochistan's Annexe

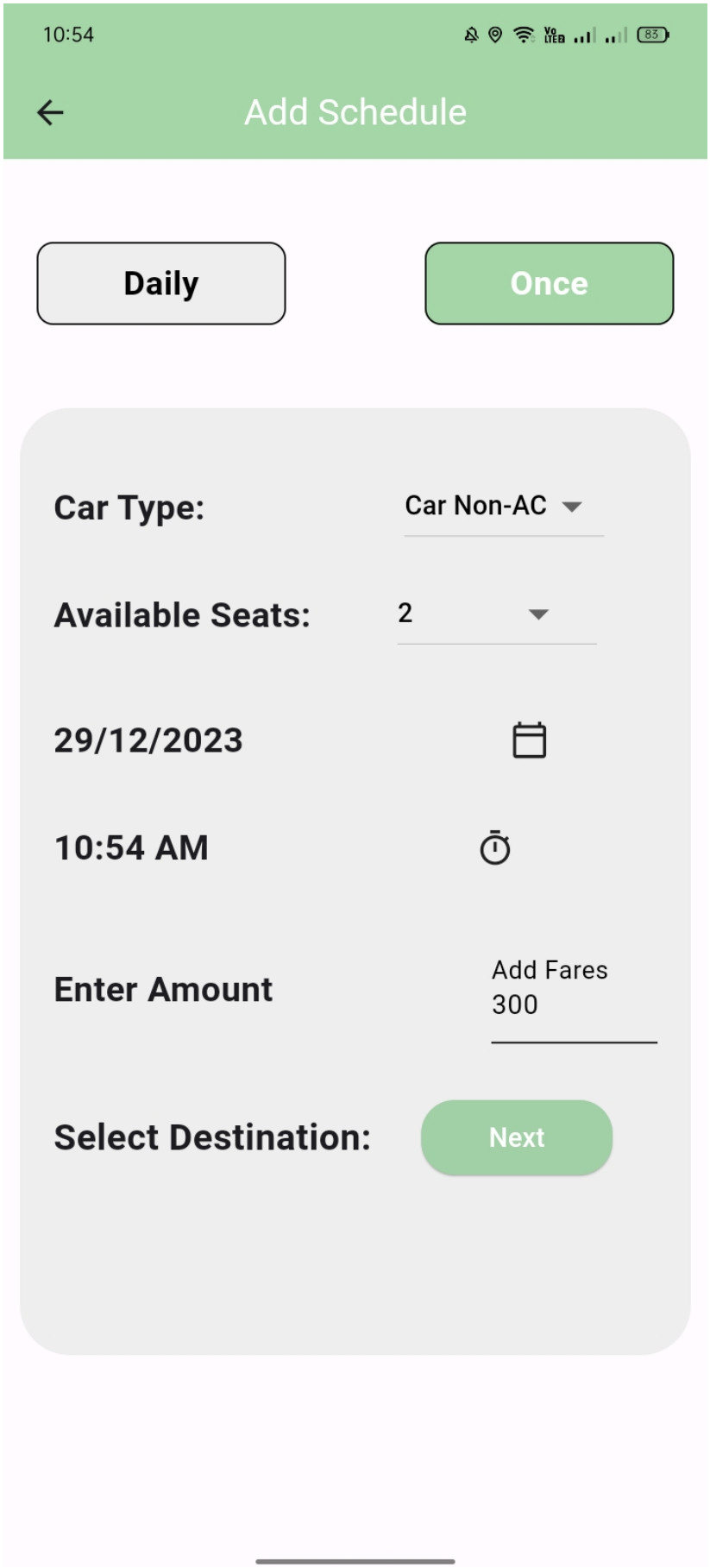

7:23
Update Profile
New Password
0/8
Update

4.2. RIDER APP

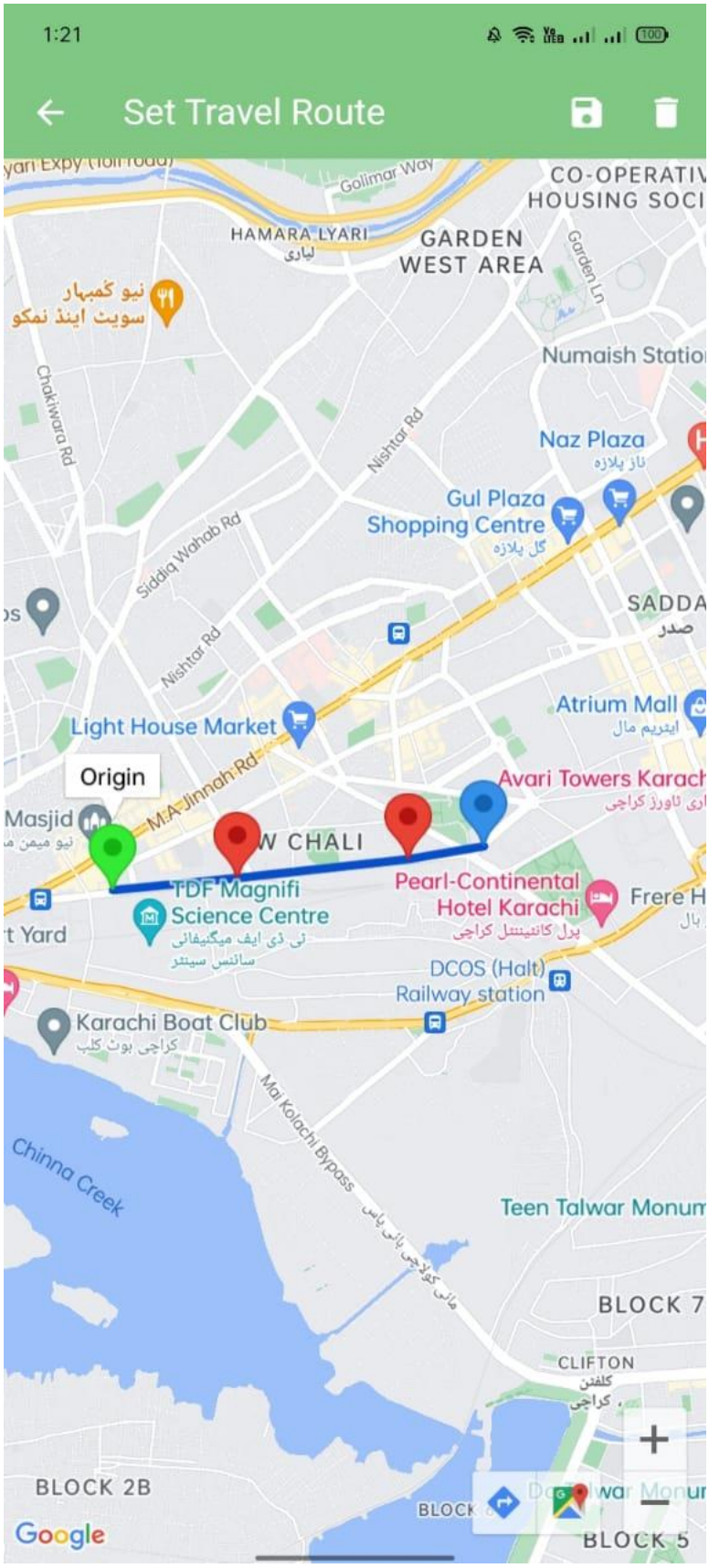

10:53
Booking Office
5 J KACHI ABADI
Jama Masjid Muhammadi
NORTH KARACHI TWP
Oda Rajput Mohalla
Serena Mobile Mall
ORANGI TOWN
BLOCK D
NORTH NAZIMABAD TOWN
BLOCK A
Askari Amusement Park
Lyari Expy
M-10
BILAL CO-OPERATIVE HOUSING SOCIETY
Abidabad
Karachi
کراچی
SADDAR
Sector F
CLIFTON
DEFENCE HOUSING AUTHORITY
Shrine Hazrat Syed Abdullah Shah Ghazi
Do Darya
Google
Available Rides
Add Schedule
Home
location
Schedule
account

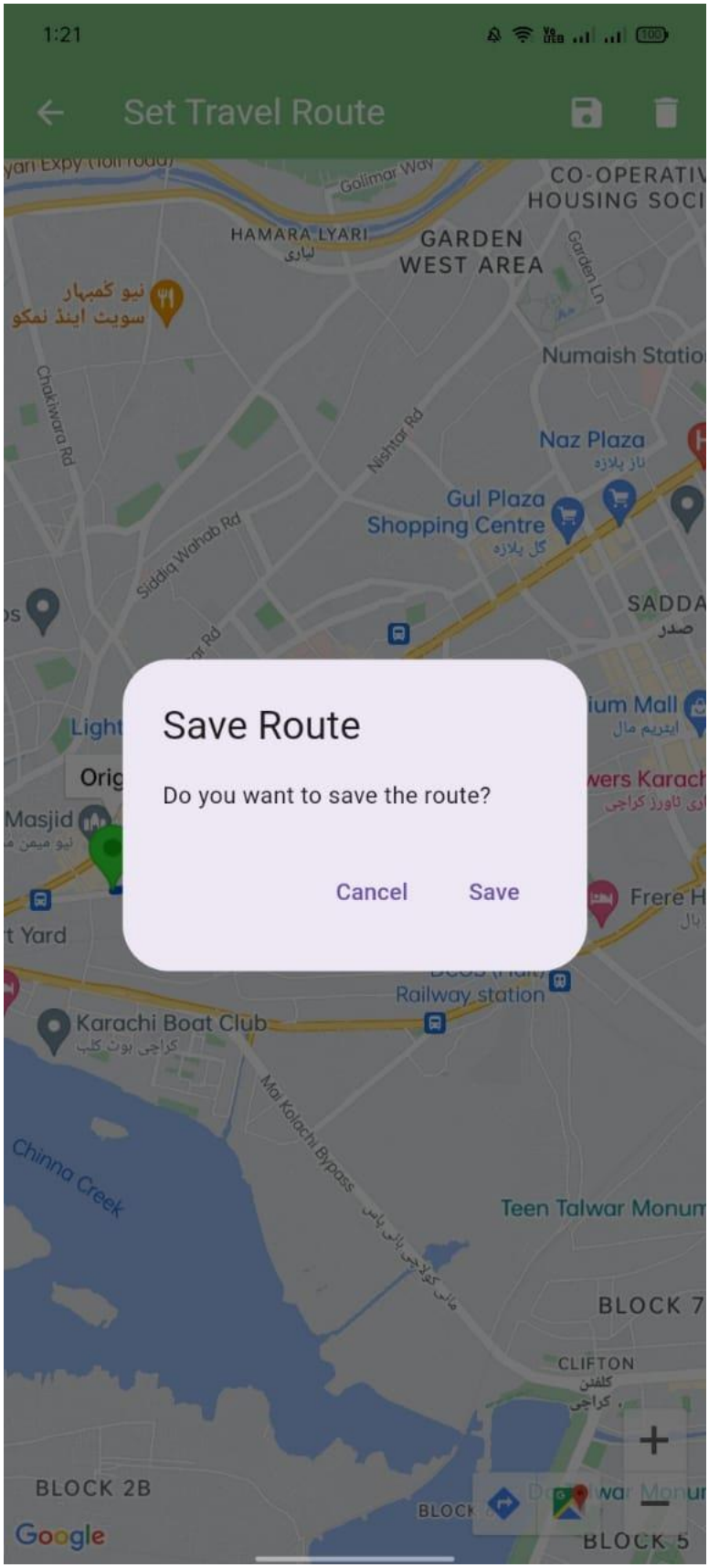

10:52
My Schedule
Car Type:
Select
Available Seats:
Select
Select Date
Select Time
Enter Amount
Add Fares
Delete Schedule
Requests
Passengers
Start Ride
Home
location
Schedule
Account

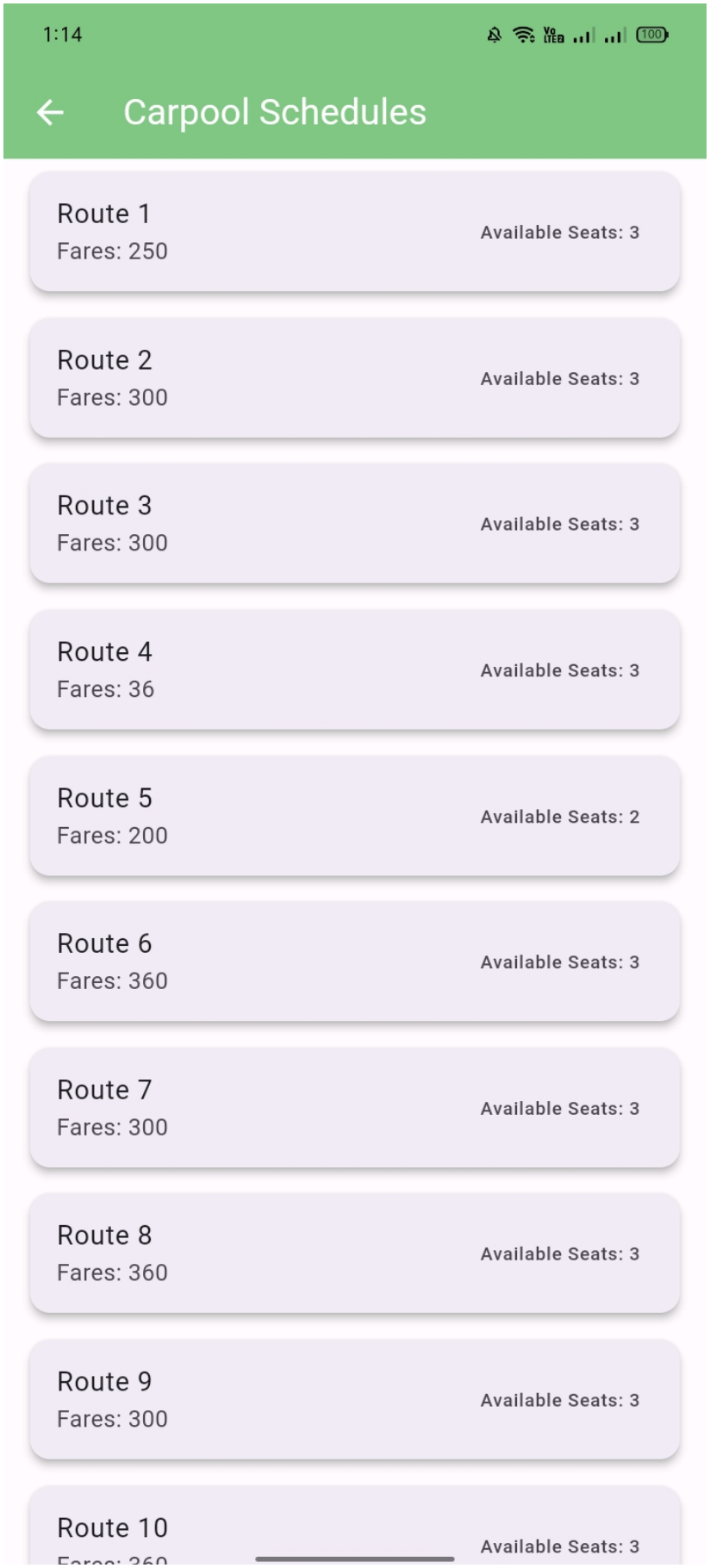

10:52
Update Profile
New Password
0/8
Update
Sign out

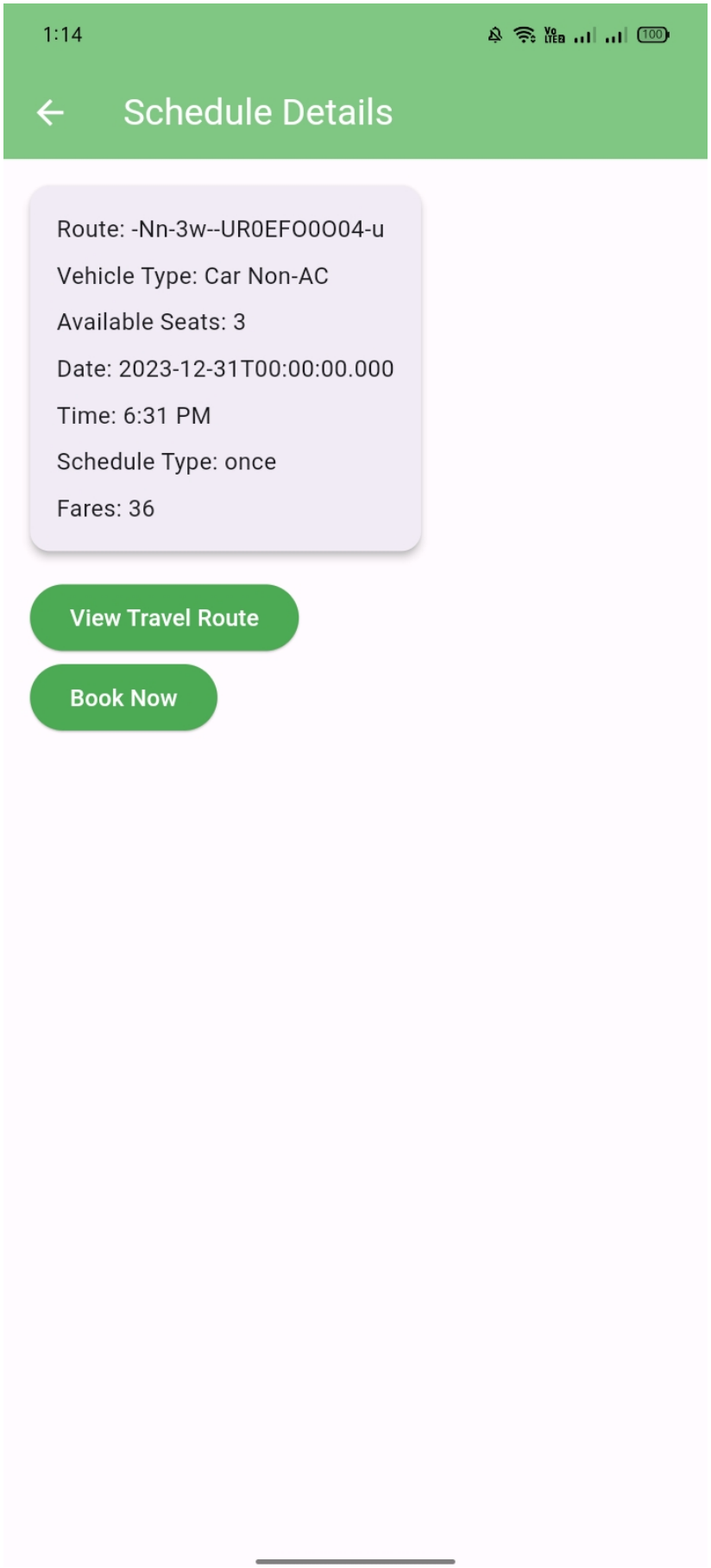

10:54
Add Schedule
Daily
Once
Car Type:
Car Non-AC
Available Seats:
2
29/12/2023
10:54 AM
Enter Amount
Add Fares
300
Select Destination:
Next

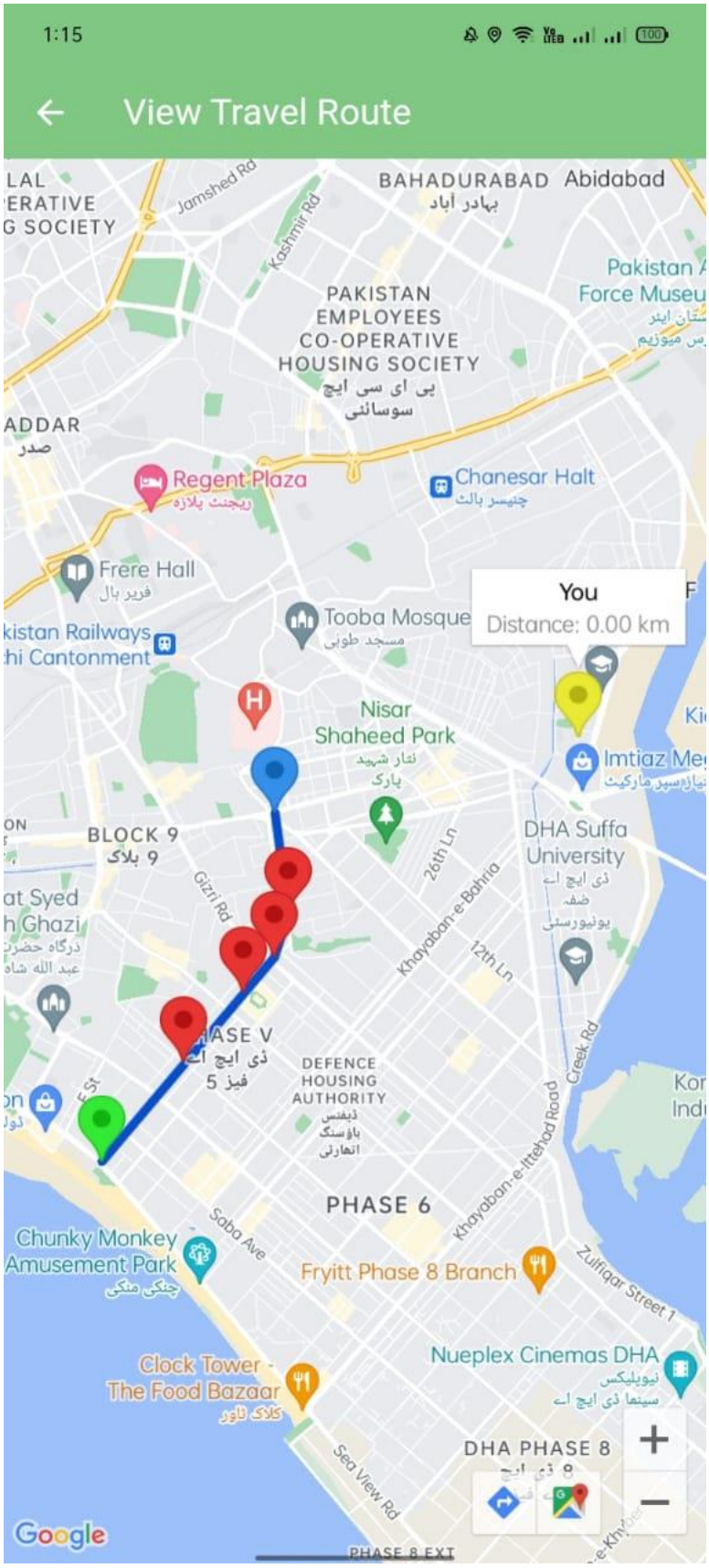

10:55
Select Route
M-7
Oila
Hub Dam
Wildlife
Sanctuary
حب ڈیم جنگلی
حیات تحفظ
Gadap
گڈاپ
Madinatul
Hikmah
مدینۃ الحکمۃ
M-10
Hub
حب
M-10
Oda Rajput
Mohalla
Dumba
ڈمبا گوٹھ
Shah Faisal
Town
شاہ فیصل
ٹاؤن
Goth Haji
Salar
گوٹھ
حاجی سالار
Karachi
کراچی
Bundle Island
جزیرہ بندل
Google


1:21
Set Travel Route
CO-OPERATIV
HOUSING SOCI
HAMARA LYARI
لیاری
GARDEN
WEST AREA
Garden Ln
Golimar Way
نیو کمبہار
سویٹ اینڈ نمکو
Numaish Statio
Chakiwara Rd
Nishtar Rd
Naz Plaza
ناز پلازہ
Gul Plaza
Shopping Centre
گل پلازہ
Siddiq Wahab Rd
SADDA
صدر
Nishtar Rd
Atrium Mall
ایٹریم مال
Light House Market
Origin
M.A Jinnah Rd
Avari Towers Karach
Masjid
W CHALI
TDF Magnifi
Science Centre
ٹی ڈی ایف میگنیفائی
سائنس سینٹر
Pearl-Continental
Hotel Karachi
پرل کانٹینینٹل کراچی
Frere H
t Yard
DCOS (Halt)
Railway station
Karachi Boat Club
کراچی بوٹ کلب
Mai Kolachi Bypass
Chinna Creek
Teen Talwar Monum
BLOCK 7
CLIFTON
کلفٹن
کراچی
BLOCK 2B
BLOCK 5
Google

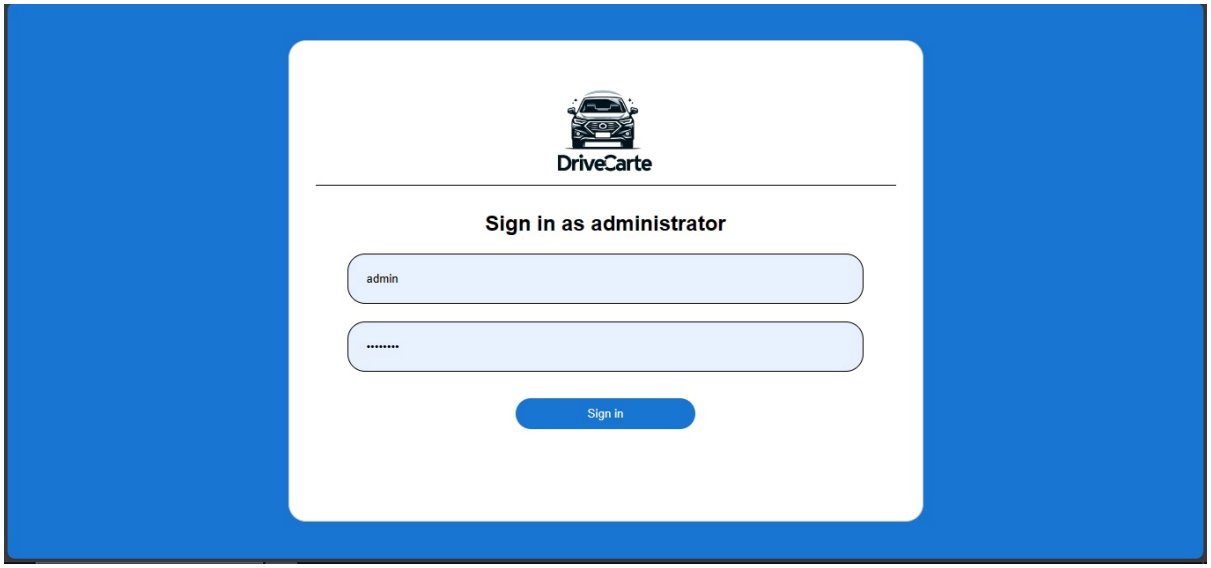

1:21
Set Travel Route
HAMARA LYARI
GARDEN WEST AREA
Numaish Statio
Naz Plaza
Gul Plaza Shopping Centre
Chakiwara Rd
Nishtar Rd
Siddiq Wahab Rd
Save Route
Do you want to save the route?
Cancel
Save
Railway station
Karachi Boat Club
Chinna Creek
Teen Talwar Monum
BLOCK 7
CLIFTON
BLOCK 2B
BLOCK 5
Google

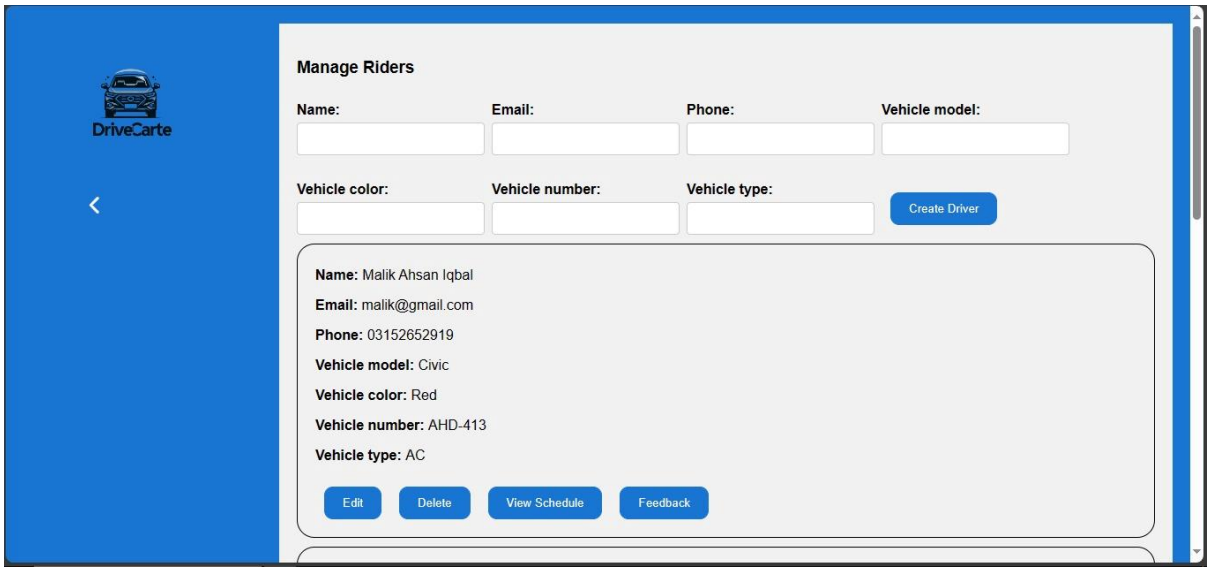

1:14
Carpool Schedules
Route 1
Fares: 250
Available Seats: 3
Route 2
Fares: 300
Available Seats: 3
Route 3
Fares: 300
Available Seats: 3
Route 4
Fares: 36
Available Seats: 3
Route 5
Fares: 200
Available Seats: 2
Route 6
Fares: 360
Available Seats: 3
Route 7
Fares: 300
Available Seats: 3
Route 8
Fares: 360
Available Seats: 3
Route 9
Fares: 300
Available Seats: 3
Route 10
Available Seats: 3

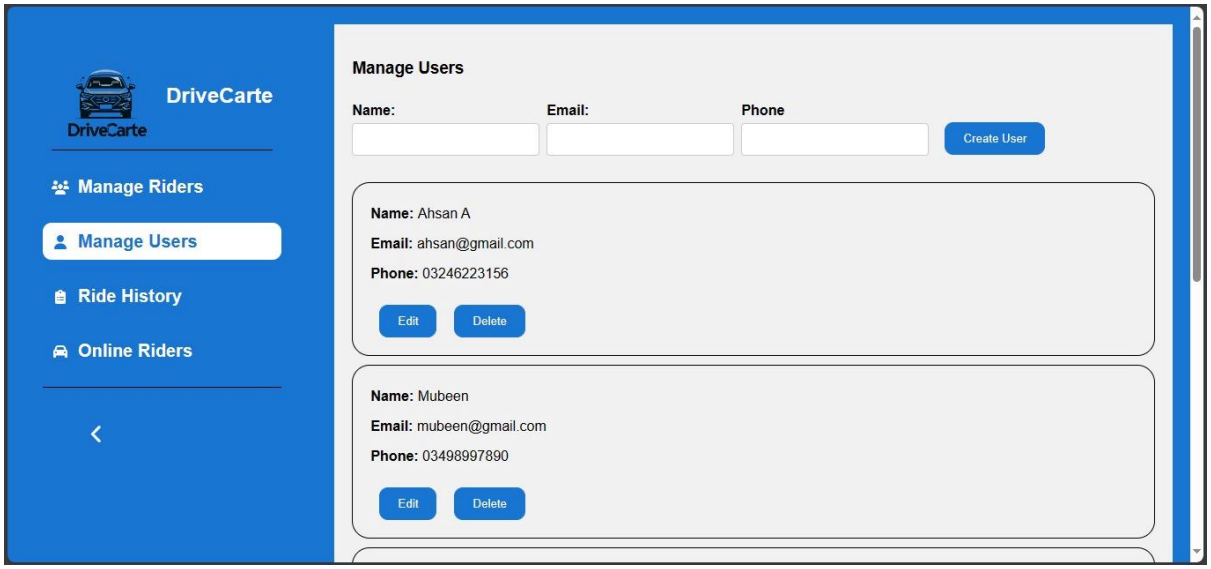

1:14
Schedule Details
Route: -Nn-3w--UR0EFO0O04-u
Vehicle Type: Car Non-AC
Available Seats: 3
Date: 2023-12-31T00:00:00.000
Time: 6:31 PM
Schedule Type: once
Fares: 36
View Travel Route
Book Now

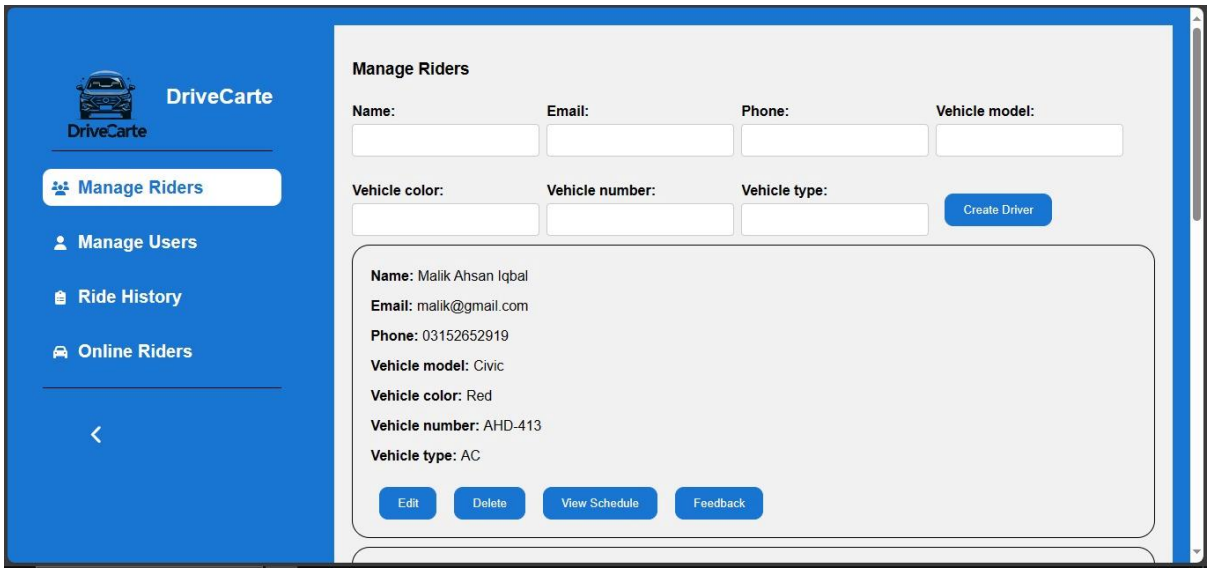

1:15
View Travel Route
BAHADURABAD Abidabad
بہادر آباد
Jamshed Rd
Kashmir Rd
PAKISTAN EMPLOYEES CO-OPERATIVE HOUSING SOCIETY
پی ای سی ایچ سوسائٹی
Regent Plaza
ریجنٹ پلازہ
Chanesar Halt
چنیسر ہالٹ
Frere Hall
فریر ہال
Tooba Mosque
مسجد طوبیٰ
You
Distance: 0.00 km
Nisar Shaheed Park
نثار شہید پارک
BLOCK 9
9 بلاک
Gizri Rd
26th Ln
Khayaban-e-Bahria
12th Ln
DHA Suffa University
ڈی ایچ اے ضفہ یونیورسٹی
Creek Rd
DEFENCE HOUSING AUTHORITY
ڈیفنس ہاؤسنگ اتھارٹی
PHASE 6
Khayaban-e-Ittehad Road
Saba Ave
Chunky Monkey Amusement Park
چنکی منکی
Fryitt Phase 8 Branch
Zulfiqar Street 1
Nueplex Cinemas DHA
نیوپلیکس سینما ڈی ایچ اے
Clock Tower - The Food Bazaar
کلاک ٹاور
DHA PHASE 8
Sea View Rd
Google
PHASE 8 EXT

ADMIN PANEL


DriveCarte
Sign in as administrator
admin
.....
Sign in


DriveCarte
Manage Riders
Name:
Email:
Phone:
Vehicle model:
Vehicle color:
Vehicle number:
Vehicle type:
Create Driver
Name: Malik Ahsan Iqbal
Email: malik@gmail.com
Phone: 03152652919
Vehicle model: Civic
Vehicle color: Red
Vehicle number: AHD-413
Vehicle type: AC
Edit
Delete
View Schedule
Feedback


DriveCarte
DriveCarte
Manage Riders
Manage Users
Ride History
Online Riders
Manage Users
Name:
Email:
Phone
Create User
Name: Ahsan A
Email: ahsan@gmail.com
Phone: 03246223156
Edit
Delete
Name: Mubeen
Email: mubeen@gmail.com
Phone: 03498997890
Edit
Delete


DriveCarte
DriveCarte
Manage Riders
Manage Users
Ride History
Online Riders
Manage Riders
Name:
Email:
Phone:
Vehicle model:
Vehicle color:
Vehicle number:
Vehicle type:
Create Driver
Name: Malik Ahsan Iqbal
Email: malik@gmail.com
Phone: 03152652919
Vehicle model: Civic
Vehicle color: Red
Vehicle number: AHD-413
Vehicle type: AC
Edit
Delete
View Schedule
Feedback