

**AN APPS ON SMARTRIDE**

**BY**

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of  
Bachelor of Science in Computer Science and Engineering.

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**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

**JANUARY 2022**

## **APPROVAL**

This Project titled “An Apps on SmartRide”, submitted by Iftakhar Alam Rizve ID: 191-15-12652 and Md. Al-Amin ID: 191-15-12851 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on date:

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**Chairman**

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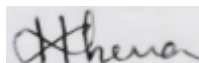
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Faculty of Science & Information Technology

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**Internal Examiner**

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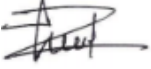
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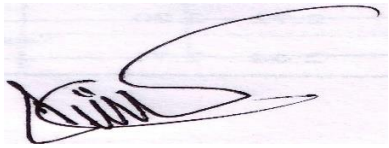
Department of Computer Science and Engineering

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## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Md. Abbas Ali Khan, Sr. Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

### Supervised by:



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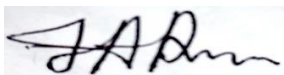
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## ACKNOWLEDGEMENT

First, we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project successfully.

We really grateful and wish our profound our indebtedness to **Md. Abbas Ali Khan, Sr. Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “*Mobile Apps Application*” to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this project.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work. Finally, we must acknowledge with due respect the constant support and patients of our parents.

## **ABSTRACT**

This document describes the software requirements and specifications of Smart Ride. Smart Ride is an online mobile application that through which car service providers will be able to easily pay their car rental as well as track their car completely. On the other hand, a customer can request for a car to go to a distant destination, on his request different car service providers will tell him the fare and the customer will select a car of his choice and enjoy his service. This app can be installed from the Google play store or the Apple play store.

Smart Ride is an online mobile application that through which car service providers will be able to easily pay their car rent as well as track their car completely.

On the other hand, a customer can request for a car to go to a distant destination, on his request different car service providers will tell him the fare and the customer will select a car of his choice and enjoy his service.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Smart Ride is an online mobile application that through which car service providers will be able to easily pay their car rent as well as track their car completely.

On the other hand, a customer can request for a car to go to a distant destination, on his request different car service providers will tell him the fare and the customer will select a car of his choice and enjoy his/her service.

### 1.2 Motivation of Our Project

- Vehicle Owner Can every real time be tracking his/her vehicles.
- Create vehicle fencing.
- Fencing wise Notification.
- Oil and Kilometre report.
- Expense Report.
- Ride sharing System Fully change.
- Ride Bill cannot depend on Company.
- Change Traditional Ride Sharing System.
- Not only Ride share Customer Can Book Pickup for Bear Goods and others.
- Live GPS Tracking System.

### 1.3 Aim and Objectives of Our Project

- Although many research have been done to explore the effective way of Vehicle Tracking and Ride Sharing System, but very few of them have been conducted in the context of Bangladesh [1].
- The main goal of this research is-
  - There are 2 different apps designed Tracking and Ride sharing apps.
  - Tracking App every real time tracking vehicle use IOT device.
  - IOT device Send data in apps and vehicle owner see report.
  - It provides a fast and hassle-free platform for passengers to find & book their rides.
  - Customer Can Request for Ride and wait for bidding.
  - Nearest Driver Show This request and Apply for this request and set amount
  - Drivers can use this app for finding the nearby trips and communicating with passengers.
  - Customer Show many drivers bidding offer and choice and enjoy ride.

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Objective**

This document describes the software requirements and specifications of Smart Ride. Smart Ride is an online mobile application that through which car service providers will be able to easily pay their car rental as well as track their car completely. On the other hand, a customer can request for a car to go to a distant destination, on his request different car service providers will tell him the fare and the customer will select a car of his choice and enjoy his service. This app can be installed from the Google play store or the Apple play store.

#### **2.2 Document Convention**

Text formats:

Font : Times New Roman (Body), Constantia (Headings)

Font Size: 13 for Body, 14 for Sub-Headings and 22 for Headings.

Table-1: Document conventions

DB	Database
DDB	Distributed Database
DFD	Data Flow Diagram
ER	Entity Relationship
SS	Screenshot

#### **2.3 Audience and Reading Guidelines**

The document is aimed at all stakeholders and developers, including designers, coders, testers, and maintainers. The reader is expected to have a basic understanding of mobile operating systems., databases and user accounting along with knowledge and understanding of DFDs and Use-case diagram.

## **2.4 Definitions**

### **2.4.1 User Account**

A user account is an area on a network server where a computer's username, password, and other information are stored. A user account determines whether or not a user can connect to a network, another computer, or a shared folder. User accounts were required in any network with multiple users.

### **2.4.2 Mobile Operating Systems**

A mobile operating system, often known as a mobile OS, is a based operating system designed to run on mobile devices such as smartphones, PDAs, tablet computers, and other handheld devices.

### **2.4.3 Database**

A database is a logically ordered collection of data that can be easily accessed, controlled, and updated. The database can be classified into several types of material in one view.

### **2.4.4 Distributed Database**

A distributed database is one in which the storage devices are not all connected to the same processing unit, such as the CPU, and is managed by a distributed database management system, which is sometimes referred to as a distributed database system network.

### **2.4.5 Entity Relationship**

An entity relationship model (ERM), also known as an entity-relationship (ER) diagram, is a graphical depiction of entities and their relationships to one another that is commonly used in computing to organize data within databases or information systems.

### **2.4.6 Data Flow Diagram (DFD)**

A data flow diagram (DFD) is a graphical representation of data "flow" across an information system that models process elements. A DFD is frequently used as a basic step in the development of a system overview that can later be developed.

### **2.4.6 Use Case Diagram**

A use case is a collection of actions or event steps in software and systems engineering that often defines the interactions between a role (known as an actor in the Unified Modeling Language) and a system to achieve a goal. A human or any external system can be the actor.

## **2.5 Project Scope**

Through Project the car service providers will be able to further expand their business, and customers will be able to enjoy their long-distance travel much easier and at the right price. Through which car service providers will be able to easily pay their car rental as well as track their car completely. Car service providers will first register with the tracking system and ride-sharing software. After registration, one account will be opened for all of them. There they will add their cars and they will be able to enjoy their services. On the other hand, a customer will be able to request for a car to go to a distant destination, on his Software Requirements Specification for "SmartRide" 05 December 2021 request different car service providers will tell them the rent and the customer will select a car of his choice and enjoy his service [2].

## **CHAPTER 3**

### **OVERALL DESCRIPTION**

#### **3.1 Project Feature of Tracking App**

##### **3.1.1 Car Owner Registration**

The car service provider will register the compromise with the required information. Information steps:

- a. Name
- b. Phone
- c. Email
- d. Password

##### **3.1.2 Log In**

The car service provider will login the compromise with the required information. Information steps:

- a. Email or Phone
- b. Password

##### **3.1.3 Search Vehicles**

Vehicle Owner Show all vehicle current location in maps.

##### **3.1.4 Expense Title and Expense Add**

All types of expenses will be noted here along with the name and date.  
Expense Add: Name, amount, date and picture of receipt must be added to the cost.

##### **3.1.5 Vehicle Fencing**

Vehicle fence is a location tracking system. When we select a specific area (such as home, office, school, college, university, mosque), notifications will be displayed when vehicles enter and exit that area. The date, time and vehicle number will show all the details.

### **3.1.6 Vehicle Day Wise Play Back**

All the details including the date and time will be noted in which areas the vehicle went in one day and how much money was rented.

### **3.1.7 Notification Setting**

Where are the vehicles? What are you doing? How fast is it going? Time-to-time notification of all types of information will come.

### **3.1.8 Over Speed Limit Setting**

The speed of the vehicle can be fixed. Notification will come when the speed limit of the vehicle is crossed.

### **3.1.9 Report of Fuel and Kilometer**

If you want you can see how many liters of oil is in the car and how many kilometers it is running.

### **3.1.10 Date Range Report**

We can see all the reports any day, month, year if we want.



## **3.2 Project Feature of Ride Sharing App**

### **3.2.1 Car User Registration**

The car service user will register the compromise with the required information.

Information steps:

- a. Name
- b. Phone
- c. Email
- d. Password

### **3.2.2 Log In**

The car service user will login the compromise with the required information.

Information steps:

- a. Email or Phone
- b. Password

### **3.2.3 Search Vehicles**

Car Service User Show all vehicle current location in maps. Select your destination and request for ride.

### **3.2.4 Bidding**

Customer Can Request for Ride and wait for bidding. Nearest Driver Show This request and Apply for this request and set amount.

### **3.2.5 Customer**

Customer Show many drivers bidding offer. Customer will select the driver as he wishes and accept the request for ride.

### **3.2.6 Deriver**

Drivers can use this app for finding the nearby trips and communicating with passengers.

### **3.2.7 Notification**

Time-to time notification of all types of information will come for Passengers and driver.

## **3.3 Operating Environment**

The following specifications should be included in the hardware, software, and technology employed:

- Ability to connect to the Wi-Fi or mobile network.
- The ability to send and receive data through a network.
- Touch screen for convenience or Keypad (in case touchpad not available).
- Processor with a 500 MHz clock speed
- Power supply that is never interrupted.
- The ability to use a mobile phone's camera, gallery, microphone, and other features.
- Capability to accept user input.
- Device must have 512MB RAM or above.
- Functional on iOS and android only.

## **3.4 Constraints on Design and Implementation**

- Create “SmartRide” account by entering name and verifying mobile number.
- In the event that network is unavailable.
- If data cannot be exchanged over the network, display an error message. "Connection not available".
- In case of not able to access services of mobile hardware if  
eg: camera is not working, prompt error message, "Can't access camera".
- Lock Account:
- In case of spamming by 10 users.
- Maintain Consecutive marked spam Counter.
- For every consecutive spam, increment logic counter by 1.
- Deactivate the account as the spam number reaches 10.

### **3.5 Assumptions and Dependencies**

- Availability of the network and data.
- Power supply.
- For data exchange across the network, a better connection is required.
- Availability of mobile services.

## **CHAPTER 4**

### **SPECIFIC REQUIREMENTS**

#### **4.1 Requirements for External Interfaces**

##### **4.1.1 User Interface**

The SmartRide user experience should be simple enough that 99.9% of all new SmartRide customers can use the app without assistance.

##### **4.1.2 Hardware Interface**

The hardware should have following requirements:

- Reading ability in a gallery.
- The ability to send and receive data through a network.
- Touch screen for convenience.
- Keypad (in case touchpad not available).
- Power supply that is never interrupted.
- Connectivity to a network.
- Capacity to accept user input.
- Validation of the user.
- Ability to connect to different applications.
- Ability to attach hyperlinks to snaps.
- Ability to locate user on a real-time map.
- Able to recognize faces using face recognition algorithms.
- Ability to sense and hear the music around whenever Shazam Ed.
- Ability to keep a track of all birthdates of each and every user and send them a cake, wishes and many more.
- Ability to show relevant ads.
- Should be user friendly.

##### **4.1.3 Software Interface**

The software interfaces are specific to the target other user's SmartRide software systems. SmartRide demands software like GPS, camera, etc., on the following mobileOS

(environment):

1. iOS
2. Android

#### **4.1.4 Performance**

Application must be lightweight and must send messages instantly.

#### **4.1.5 Speed**

Application's processing speed should be so high that there should be no delay in executing user's instructions. Also, the application should not crash repeatedly.

#### **4.1.6 Cash Memory**

The app shall not consume more cache memory. Even if it does, it must provide a choice to the user to clear app cache manually.

## **4.2 Others Non-Functional Requirements**

### **4.2.1 Privacy**

The users are provided with the benefit of customizing their privacy settings. Hence, they shall make the best use of these settings. Eg: Choose who can view your story and so on.

### **4.2.2 Security and Safety**

Keep your password safe and don't share it with any other people, applications, or websites under any circumstances. We also suggest using a different password for every service you use.

### **4.2.3 Reliability**

It is very important that the app is reliable as 3B+ users use SmartRide simultaneously. All data collected by SmartRide shall be preserved safely and should follow data hiding.

#### **4.2.4 Portability**

SmartRide can be used on any apple or android phones and tablets.

#### **4.2.5 Maintainability**

SmartRide is a popular app and hence has maintenance on loop. SmartRide releases all new updates first and looks for acceptance from its customers. SmartRide always surprises its users by releasing fresh updates.

#### **4.2.6 User Friendly**

This application is user-friendly, meaning to say even if one just installs the app and uses it for the first time, he'd find it easy to operate the application.

#### **4.2.7 Permission**

The following permissions need to be granted in order to access all the features of the application.

##### **Android Permissions**

- Read phone status and identity: When you register for SmartRide, your phone number will be auto-filled for your convenience.
- Receive text messages (SMS): For your convenience, SmartRide will auto-fill the SMS code it sends you after phone number verification.
- Read the contents of your USB storage: SmartRide remembers your app settings and reload them automatically.
- Find accounts on the device: Receive notifications when friends contact you on SmartRide, when other SmartRide add you, and for other important events.
- Full network access: Send and receive chats, and other data.
- View Network Connections: SmartRide optimizes Snap delivery based on the strength of your internet connection.
- Prevent phone from sleeping: Your screen won't automatically turn off while you're using SmartRide.
- Precise location (GPS and network-based): Use your location for

features like Geo filters and Live Stories, and for other services that improve your experience.

### **iOS Permissions**

- **Location:** Use your location for features like Geo filters and Our Stories, and for other services that improve your experience.
- **Notifications:** Receive notifications when friends contact you on SmartRide, when other SmartRide add you, and for other important events.
- **Photos:** Save SmartRide and Stories to your device's Camera Roll, send photos and videos in Chat, and more.

### **4.2.8 Support**

A good software is one which listens to its customers' feedback and helps them whenever they need something. SmartRide has all supportive help documentation ready.

### **4.2.9 Backup and Restore**

This feature is the most important. Today, we exchange devices like crazy and thus there's no guarantee of us using the same device for forever. So, SmartRide provides a backup and automatic restore facility relating to the online cloud database which back up all your data (upon given your permission) and all the backed-up information can be easily restored later.

## 4.3 Constraints

### Important constraints

- Login id & password of user must be valid.
- Signup details – mandatory valid details must be provided by user.
- New accounts with existing account details cannot be created.
- Sufficient memory must be available in order to click and store snaps – 294 MB.
- Internet availability.
- If location of a user is located in unusual places within frequent intervals, verify user's presence and use of app. OS required: Android (4.4+), iOS (10+)– mobile/tablet platform.
- User MUST AGREE to all terms & conditions lay by Snapchat lest he cannot use the application.

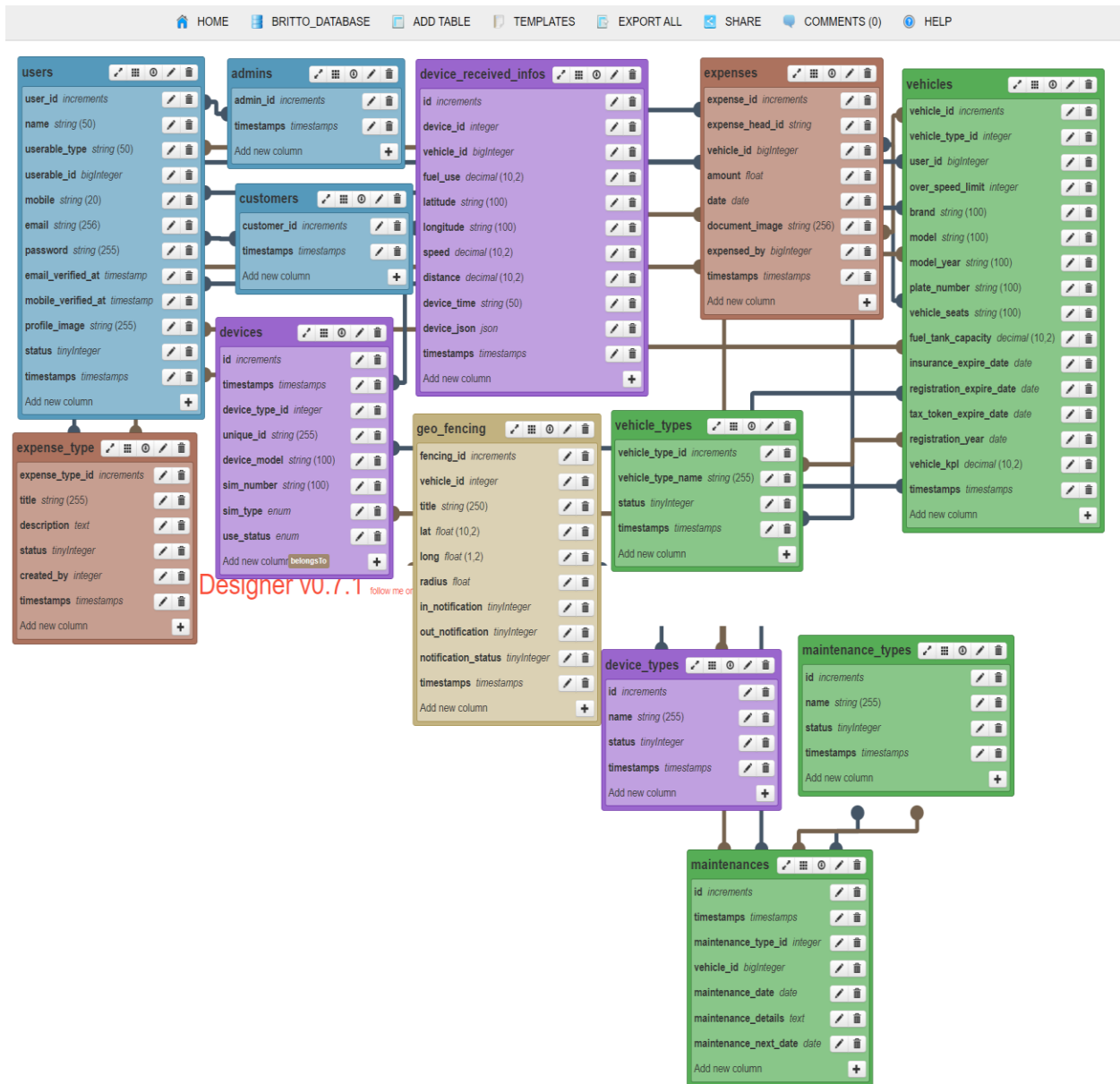


# CHAPTER 5

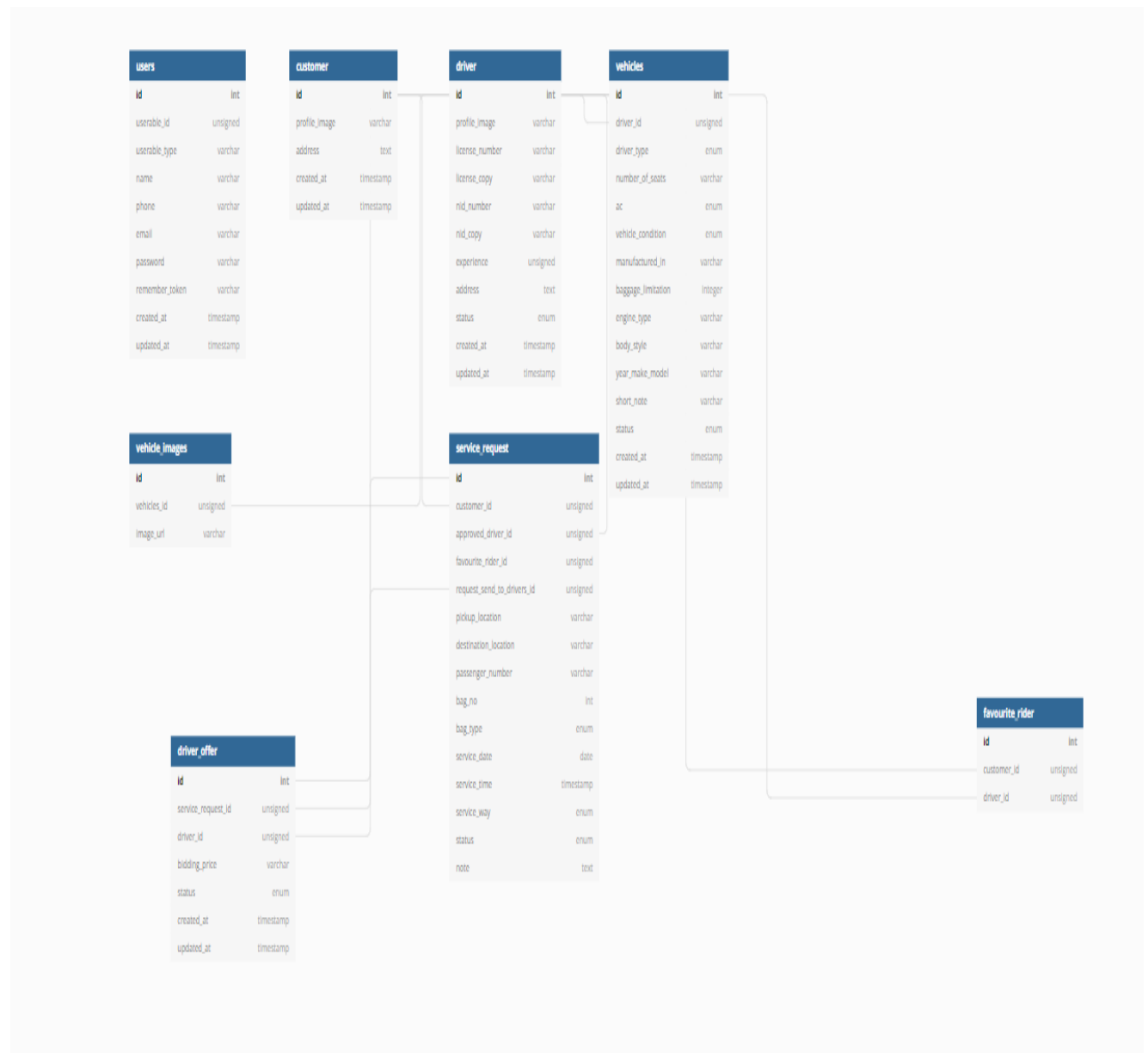
## DATABASE DESIGN

Database Diagram Design for Vehicle Tracking System and Ride Sharing App [3].

### 5.1 Vehicle Tracing Apps



## 5.2 Ride Sharing Apps



## CHAPTER 6

### RESULTS AND DISCUSSION

#### 6.1 Black Box Testing

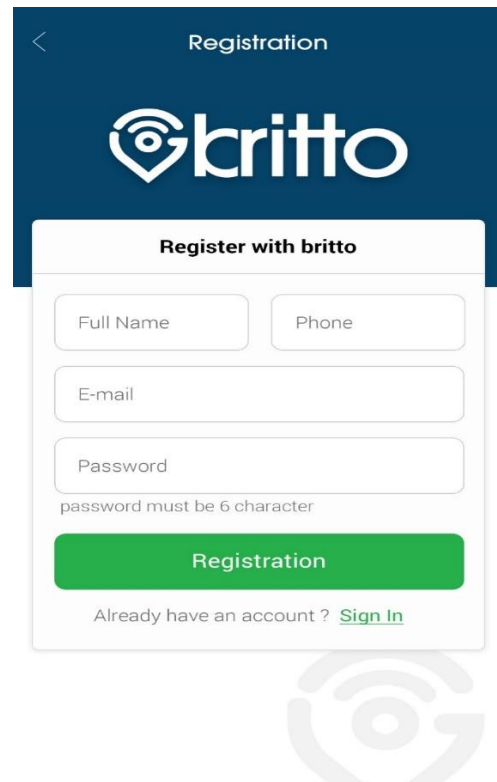
Black-box testing is a method of software testing that examines the functionality of an application without peering into its internal structures or workings. This method of test can be applied virtually to every level of software testing: unit, integration, system and acceptance.

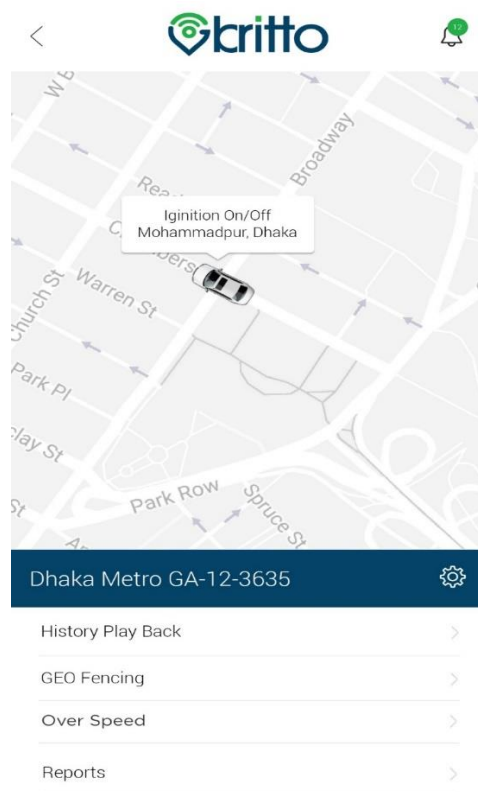
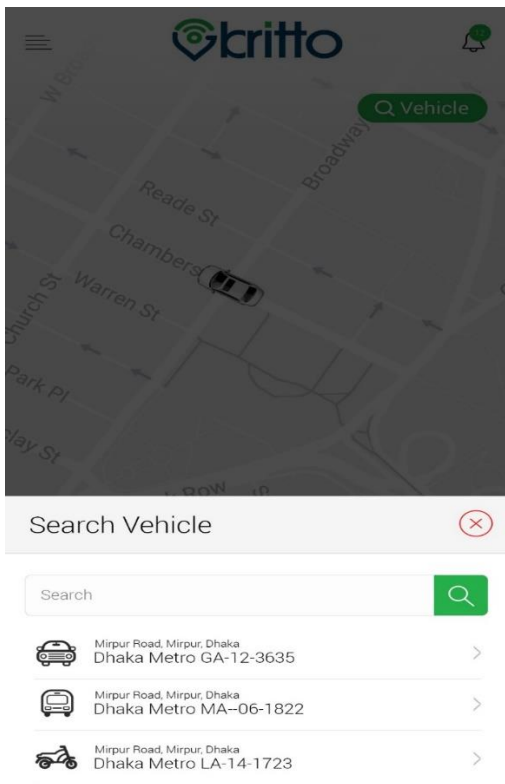
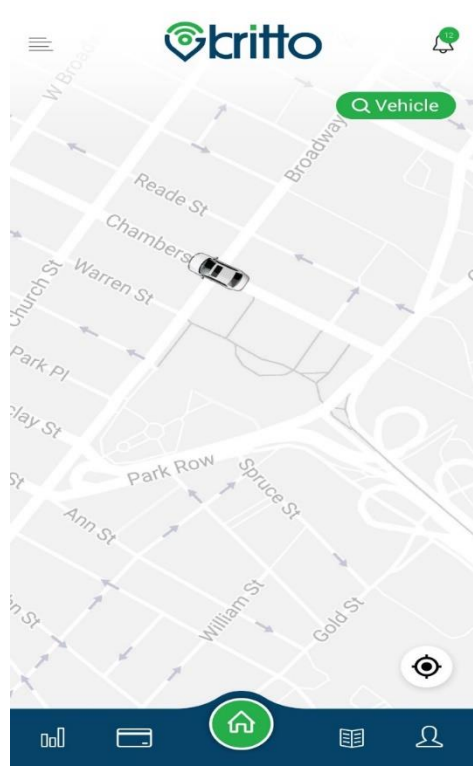
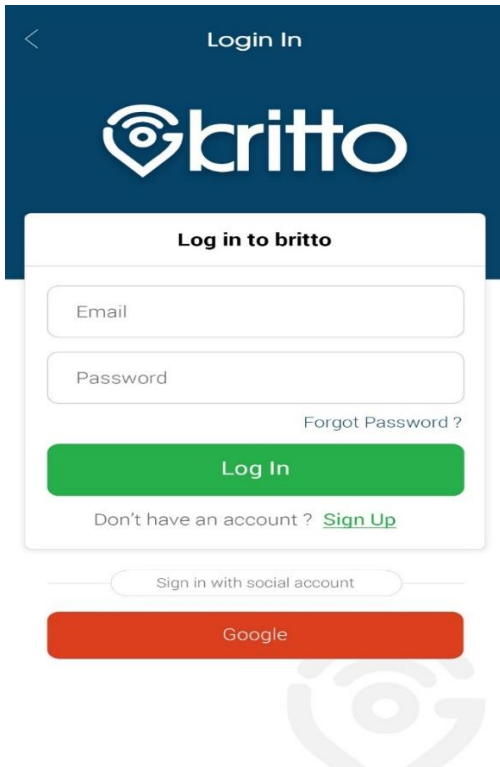
#### 6.2 White Box Testing

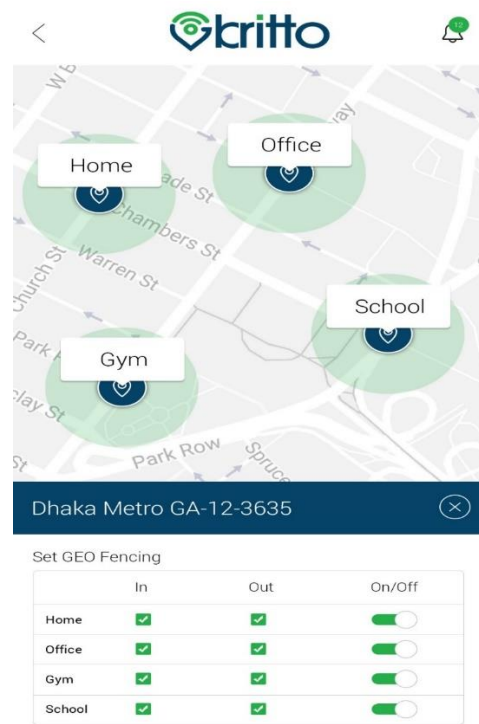
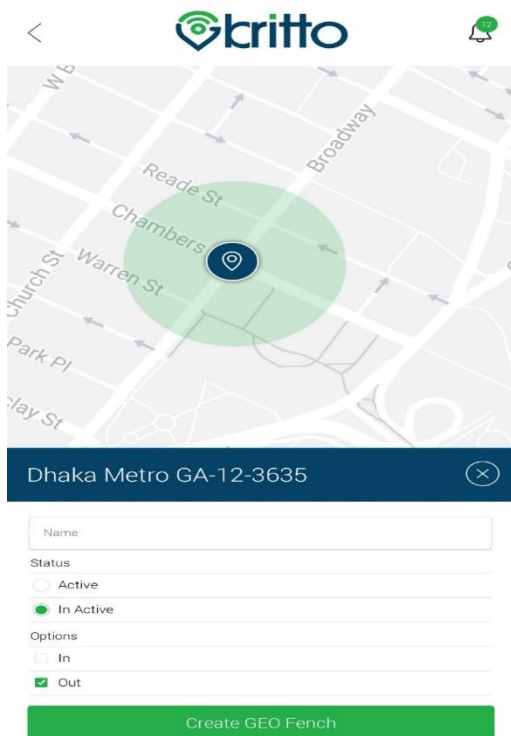
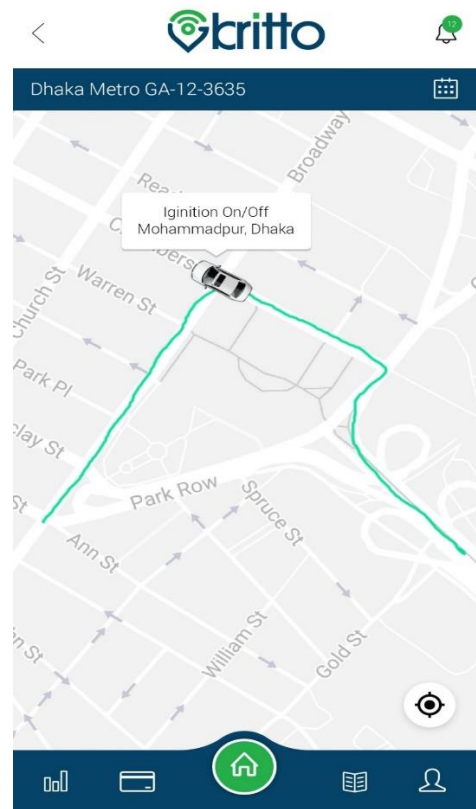
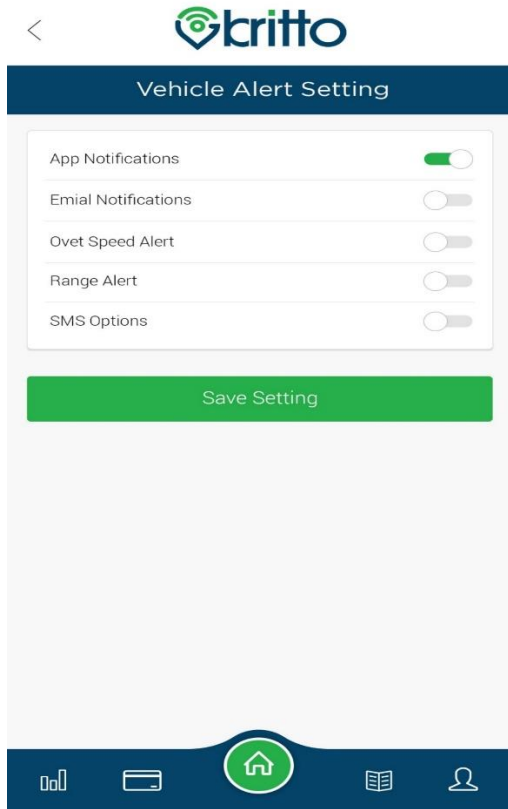
White-box testing is a method of software testing that tests internal structures or workings of an application, as opposed to its functionality. In white-box testing an internal perspective of the system, as well as programming skills, are used to design test cases.

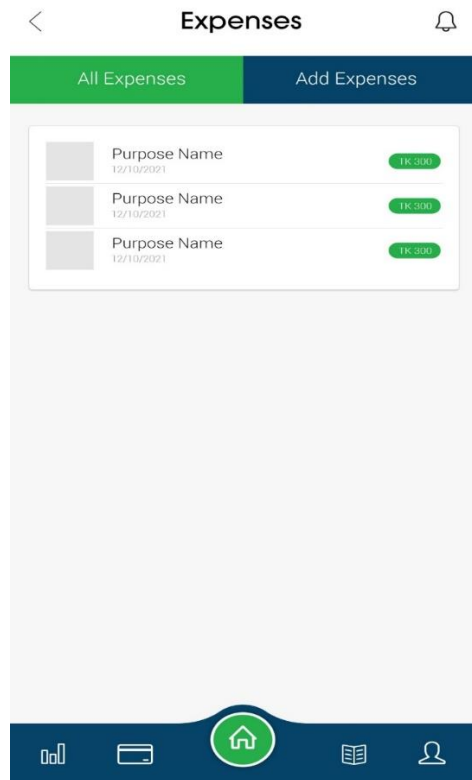
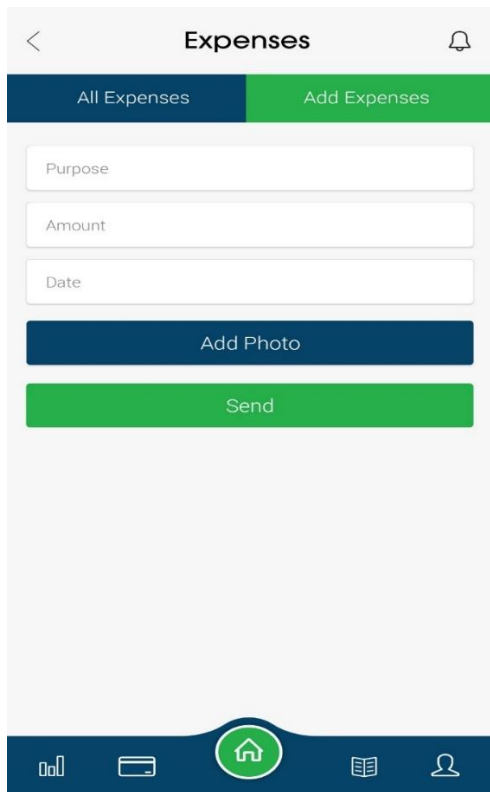
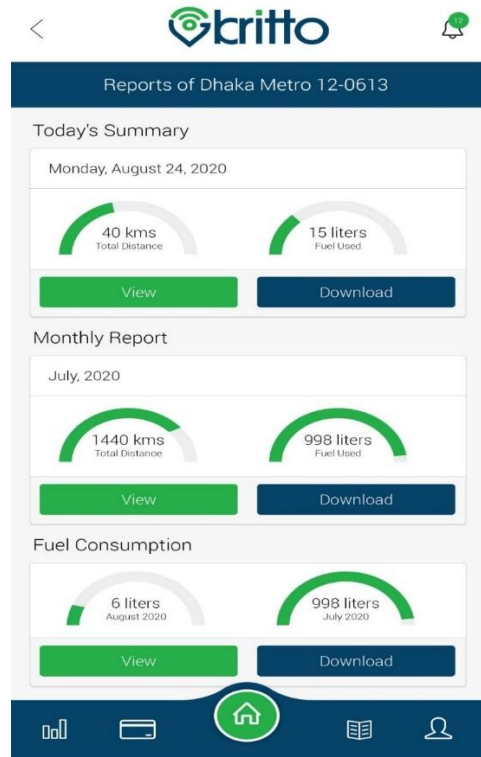
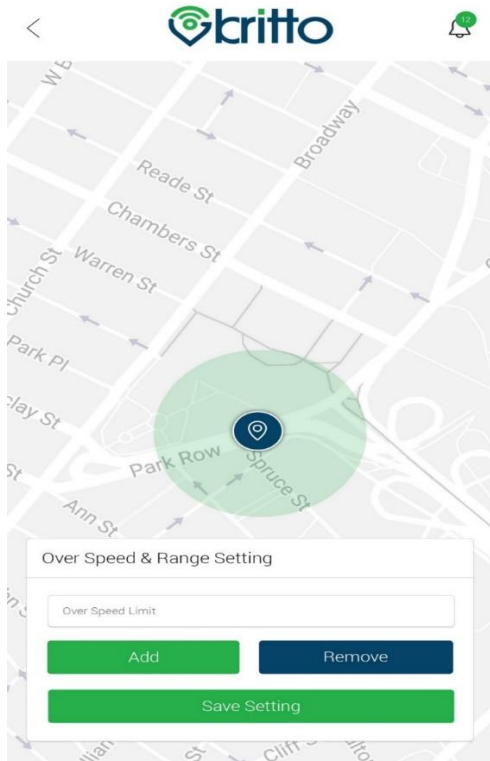
#### 6.3 Possible Test Case with SmartRide

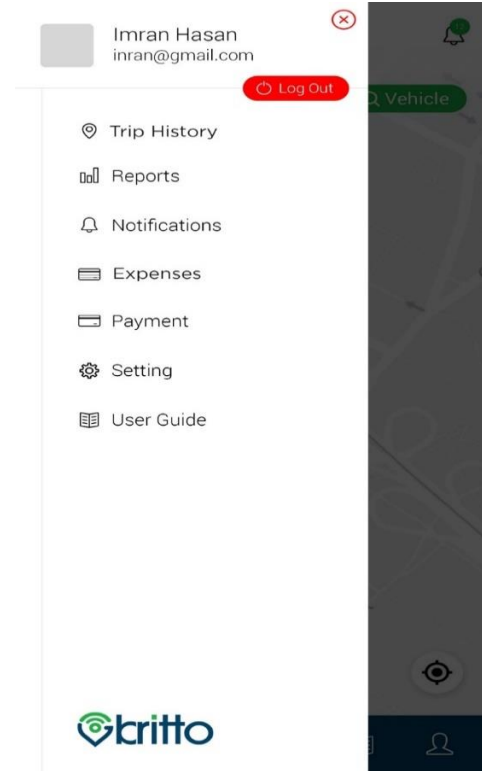
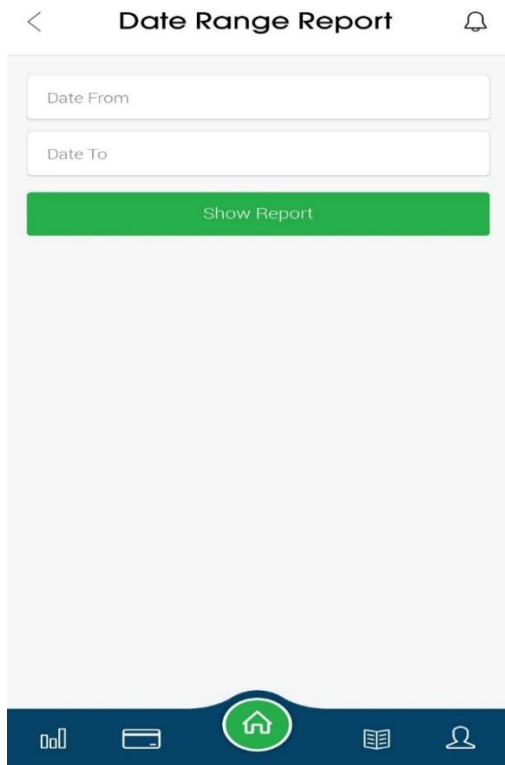
##### 6.3.1 Vehicle Tracking App



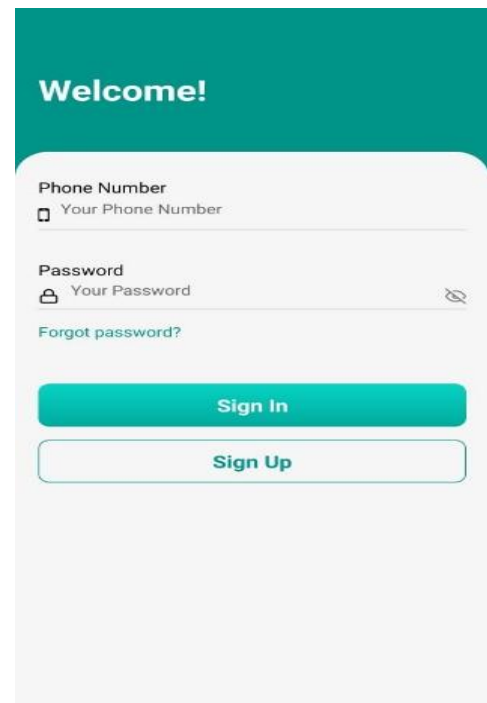
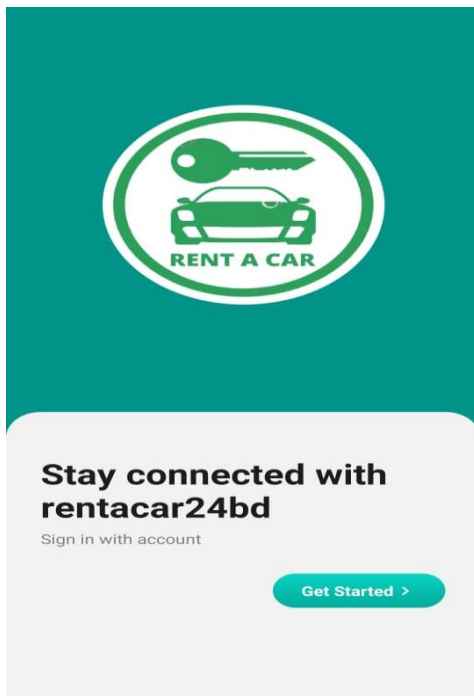


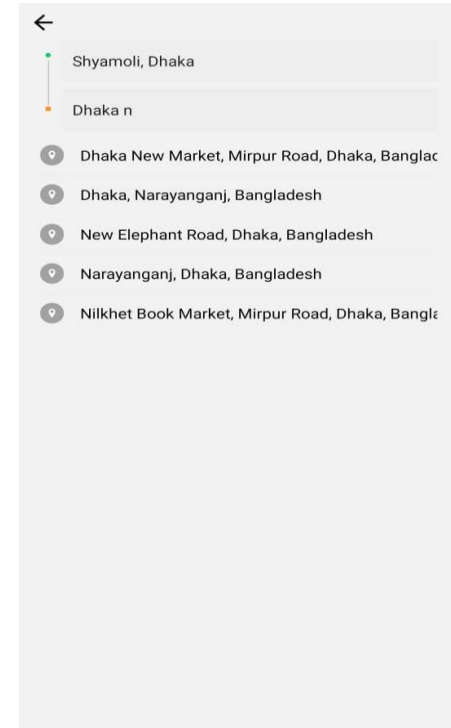
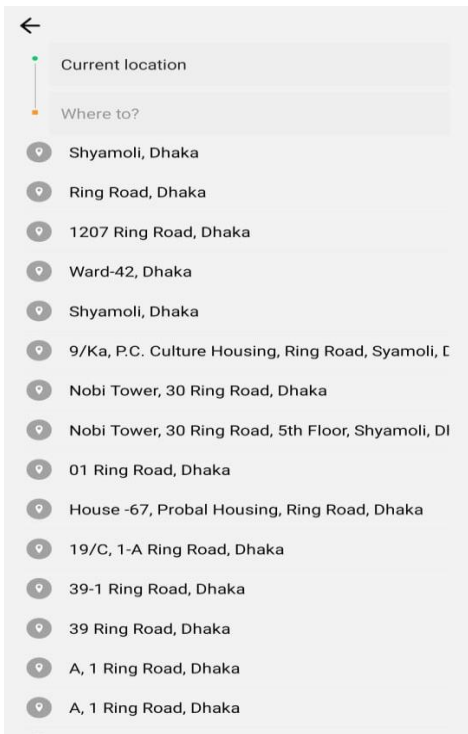
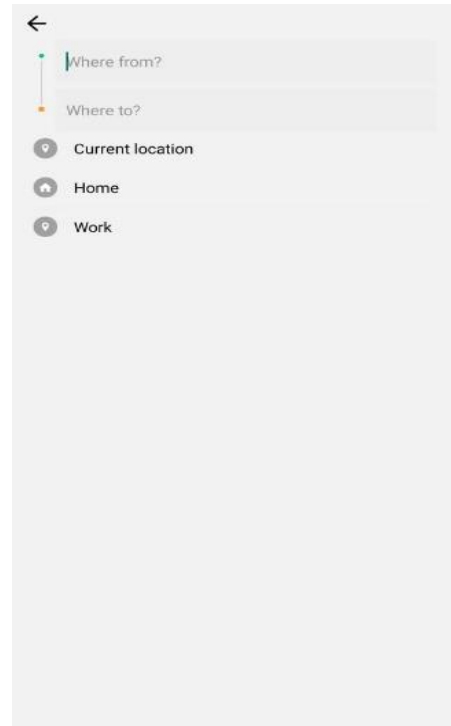




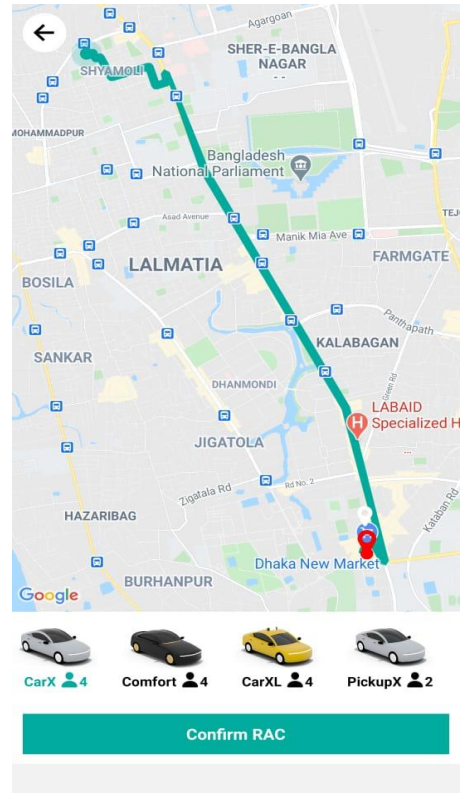
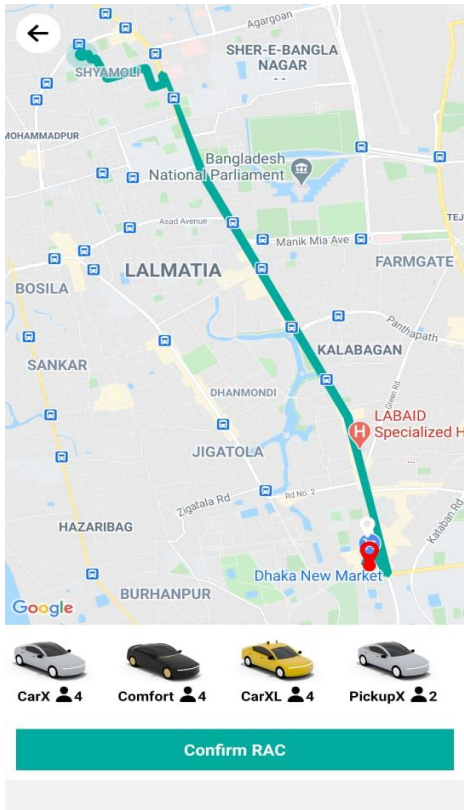


### 6.3.2 Ride Sharing App









**Request**

Shyamoli, Dhaka  
 Dhaka New Market, Mirpur Road, Dhaka, Bangladesh  
 CarX 4

Date And Time  
 2021-03-22 01-24

Small 0 Medium 0 Large 0

Short Note

**SEND REQUEST**

## CHAPTER 7

### CONCLUSION

#### 7.1 Conclusion

The ride-sharing industry definitely helps a gap in the public transportation system as well as the unemployment situation of a determined place.

However, despite that the model is now profitable for the corporations. It is strongly advised that the industry take initiative and make the necessary improvements to make the system anti-fragile.



**Labour Standards**

**Safety & Security**

**Partner with financial  
industry & Government**

#### 7.2 Future Work

- Road network. Distance-based detour measure.
- Highly scalable implementation of Social Ride-Sharing. System/Service (SRSS) using a data stream management system.
- Alternative system architecture possibilities: distributed.

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- [2]. [Mohammad Nazrul Islam, Assessing the Usability of Ridesharing MobileApplication in Bangladesh, 2020. \[Accessed: 12-November-2021\]](#)
- [3]. [Mohammed Abdallah Otair, enhancing an end-user development in database design using entity relationship diagram Mapper, July 2015. \[Accessed: 6-November-2021\]](#)

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