

# **Car Rental Management System**

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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**

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## **APPROVAL**

This Project titled “Car Rental Management System”, submitted by Kazi Md Fahim and Mofazzel Hossain Miraz 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 5<sup>th</sup> February 2023.

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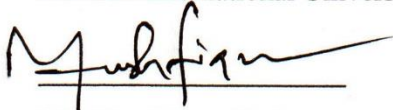
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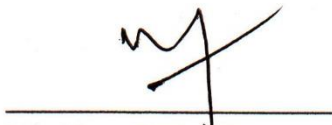
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## DECLARATION


We hereby declare that, this project has been done by us under the supervision of **Zakia Sultana, Senior Lecturer, Department of CSE** Daffodil International University. We declare that neither this project nor any part of this project has been submitted away for award of any degree or diploma.

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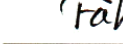
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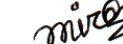
  
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## **ABSTRACT**

Car rental system has been developed for customers who can book a vehicle from any part of Bangladesh. Customers fill out forms on this website to provide information about themselves. Customers who have registered for the service can choose to order the necessary car. The proposed system is completely online, Integrated approach. It automates manual processes effectively and efficiently. Customers' work is made easier by this automated system, which also makes sure that the data is complete and meets their requirements. Include their location and the type of car they are trying to rent. The aim of the system is to create a website where individuals can reserve their autos and other essentials from anywhere in Bangladesh.

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# CHAPTER 1

## Introduction

### 1.1 Introduction

Today's "Car Rental" system is manual, requiring all data to be entered into a file by everyone from system users to technical writers. Staff members fill out all of the handwritten car reservation forms. We have developed a concept that will keep the transportation system functioning.

### 1.2 Motivation

The current car rental system is almost manually. People have to visit rental office to rent or book their car. They have to go rental office and waste their valuable time to just rent cars. They often also don't have the option to book their desired brand cars. so that's why we try to proposed a online car rental management system so people can easily rent or book car more easily in any time. With help of this people can save their valuable time without visiting car rental office. They can just visit our car rental websites and rent their desired cars in any time more easily. The main motivation was to choose this project to make car rental more easy for people and to save their valuable time. With this system people can make their car rental experience more better and more easily.

### 1.3 Objectives

This system's overarching goal can be summed up by saying that it is computerized. The entire car reservation process will be handled automatically by this technology on our system. The manual process is simplified by this method.

- Customers can view our cars and make reservations in them.
- The customer must have a minimum of one registration account.
- The customer has full control over everything on his or her profile. update his or her profile, view booking or reservation history, publish a review, and manage it, for example.
- The driver must have a minimum of one register account.

- The driver has access to all the items on his or her profile. for example, manage it, view booking or reservation schedules, and amend it.
- The administrator has access to all the registered users', customers', and employees' information. The administrator primarily has control over all system processes.
- The system speeds up and streamlines the procedure.
- To effectively save user information and data for real-time data retrieval.
- To facilitate efficient and easy vehicle or car booking.

#### **1.4 Expected outcomes**

With this car rental management system project our expected outcomes we hope are:

- People will easily book or reserve car in online
- People will rent their desired brand cars
- Users can see their booked car's vital details.
- People can save their valuable time by not visiting rental offices.

#### **1.5 Report Layout**

This project contains various chapters. In the first chapter named Introduction, we will talk about Introduction, Motivation, Objectives, Expected Outcome, and Report Layout. Also, the final chapter is named the Conclusion and Future scope of our project. In this chapter, we will talk about Discussion Conclusion and Scope for Further Development. In this report, we talk about our web system and its various problem, solution, and uses of this project.

#### **1.6 Feasibility Study**

The " Car Rental Management System" project is a fully functional web-based system. It can be changed into a desktop-based application if the user so chooses. The following are the primary technologies and tools related to "Online Car Rental System": HTML5, CSS3, and Bootstrap4 Framework.

- MySQL Server
- PHP .

- Framework for Laravel 8.0 (MVC).
- Tools for drawing diagrams.
- Draw.io .

The necessary technology and abilities can all be learned. Additionally, a personal computer is offered as a hardware tool. The "Online Car Rental System" is therefore technically possible.

As a result, the system is extremely easy to use and learn how to use. Operating the system doesn't require any specific training for the user. Anyone who has only a basic understanding of computers can use this system. The user interface of this system is excellent.

## **CHAPTER 2**

### **Background**

#### **2.1 Background of Study**

Today, the majority of individuals in our nation use the internet. The Car Rental Management System is a system for efficiently managing customer profile information and making reservations. In this project, we've put in place a system to control the entire car reservation procedure. This system's major objective is to keep up with the most recent information on car reservation availability. Three people will use it. Drive, Customer, and Admin (Employee). For this system, the customer can create their own account. Additionally, customers can view a list of every car that leaves our website. The customer can manage his or her own profile, make reservations, and examine the information about the automobile on the single view page for that vehicle. He or she can also write testimonials and manage them. The driver (employee) can now manually call or receive a message from the administrator regarding driving schedules, and he must adhere to such schedules. The system has full access for the administrator.

The administrator can control the payment area for each booking as well as add the customer, driver, vehicle, and car brand. At the end of the month, admin can also generate an expenditure report. Admin can also record expenses against the booked car.

#### **2.2 Related Work**

Car rental management system we will use this website for renting car. Through our project, we will provide car to people via online. We can rent car for them properly, so we will arrange a bill paper and we will develop some cash type payment system for them to get this car through money. We will have a helpline number for our project that they can call to rent car plus if there is a problem with the car and driver. We will solve it For example Rentalscar.com,Go rentals etc.

### **2.3 Scope of the Problem**

Data Backup :- There is no method for data backup. All data will be lost if a storage device crashes.

Security :- Compared to a biometric system, the system is not as secure. Crackers may use specific destructive software to attack the system and attempt to guess the system password.

Real-Time Location :- No vehicle's real-time location can be determined by the system. If someone needs to know where a particular car is, they should get in touch with the owner of that vehicle.

Real-Time Driver :- The system is unable to manage informing drivers in real-time of booking schedules.

If a driver is required for a booking, the administrator can manually add or email.

### **2.4 Challenges**

As like everything this projects also have some prior challenges. As we know most of our countries people are not used with smart devices or computers. So when they are not used to it they cannot easily connect with online based car rental system. And by so far internet is not reached widely rural areas in our country so without internet connection, people can't be attached with online based car rental system. And also we need more time to reach rural areas to serve our system. So this could be some challenges for us to make this system more useful for everyone.

### **2.5 Proposed System's Benefits**

- To make car rentals more easily for everyone.
- Assists in seeing the car's vital details.
- Assists in assisting customers who desire insurance in booking it.
- Has the ability to simply manage all booking payments.
- Has the ability to keep all user data, including user messages, automobile and brand information, booking and payment history from users



## CHAPTER 3

### Requirement Engineering

#### 3.1 Requirement Analysis

Systems engineering and system design are characterized by requirements analysis, a software engineering approach. The software engineer can prepare software allocation and develop components for such data, functional, and behavioral domains which that software will perform by requirements analysis. Due to the analysis required, the software designer can visualize the information, purpose and behavior of the system.

The first stage in the software development process is the requirements analysis phase. It entails tasks like determining a product's demands while taking into account the sometimes conflicting needs of multiple stakeholders, including beneficiaries or users. The success of the development project is dependent on the analysis of the requirements. Actionable, measurable, testable, and linked to existing business opportunities

#### 3.2 User Requirement

- Users can log in and out to see and rent cars.
- Users ought to have profiles so they may control their own profiles.
- User information may be saved.
- The admin can add or remove users, drivers, and cars.
- Car can be given to driver by admin.
- Booking Schedule can be managed by Admin.
- The admin can create reports.
- The administrator may view information on each car.

#### 3.3 System Requirement

- The admin may log in.
- The admin home page will open if the user input a valid id and password.

- The login form will appear on the system.
- The admin has ability to add, delete, or update a new user.
- The admin has ability to add, delete, or update new cars.
- The administrator has ability to add, delete, or update new car brands.
- The admin has ability to add, delete, or update new drivers.
- The admin has ability to add, remove, or confirm car reservations.
- The admin has ability to add and view each booking's payment.
- Users' messages can be viewed or deleted by the administrator.
- The admin can create reports.

### **3.4 Functional Requirement**

**Admin:** The administrator has access to every module feature.

**New User:** A new user can create own profile or administrator can add a new user.

**New Car:** Admin has the ability to build new cars.

**New Car Brand:** Administrator has ability to add a new car brands.

**New Driver:** For booking purposes, the admin may add a new driver and assign them to the car.

**Booking Schedule:** If a user requests it, the admin can create a booking schedule.

### **3.5 Non - Functional Requirement**

**Efficiency** - Records can be updated and tracked with ease.

**Reliability** - The database will function normally even if any hardware, software, or even the office LAN malfunctions or the system goes down due to a software or hardware issue.

**Availability** - Only the admin will have access to the software. The remaining users will check in online to view the information on the cars, make reservations, and maintain their own profiles.

**Security** - The primary security is the focus of the security requirement. Only the administrator and authorized users should use the software. The administrator alone has the authority to grant permission. The system is only accessible to authorized users through email and password.

**Portability** - The web-based application was created using the Laravel 8.0 Framework and the MySQL Server. The system can therefore run on any platform. Additionally, it does not require a powerful computer to maintain the system.

### **3.6 Hardware Requirement**

- Ram: 2 GB
- HDD: 1TB
- Processor: intel core I3

### **3.7 Software Requirement**

- Operating System – Windows 7,8,10
- Frontend – HTML5, CSS3, JavaScript
- Backend – PHP
- Framework –Laravel 8.0 Framework MVC
- Database – MySQL Server

### **3.8 Use Case Diagram of the System**

A use case diagram is a visual representation of the potential means by which a user might interact with a system. A use case diagram illustrates the various use cases and user types that exist in the system and is usually affected by many other types of diagrams. The use cases are defined by circles or ellipses.

### 3.8.1 Use Case Symbol

In that following figure 3.8.1 shows basic use case diagram system.

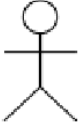
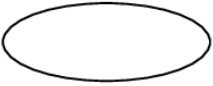
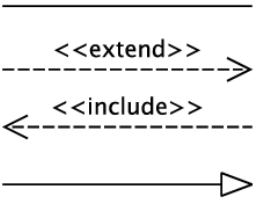
Symbol	Reference Name
	Actor
	Use case
	Relationship

Figure 3.8.1: Use Case Diagram Symbols

**Actor:**



**Use Case:**



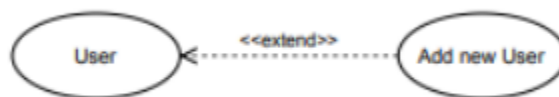
**Association:**



**Include:**



**Extend**



### 3.8.2 Use case diagram

In that following figure 3.8.2 shows Use Case Diagram of Car Rental System.

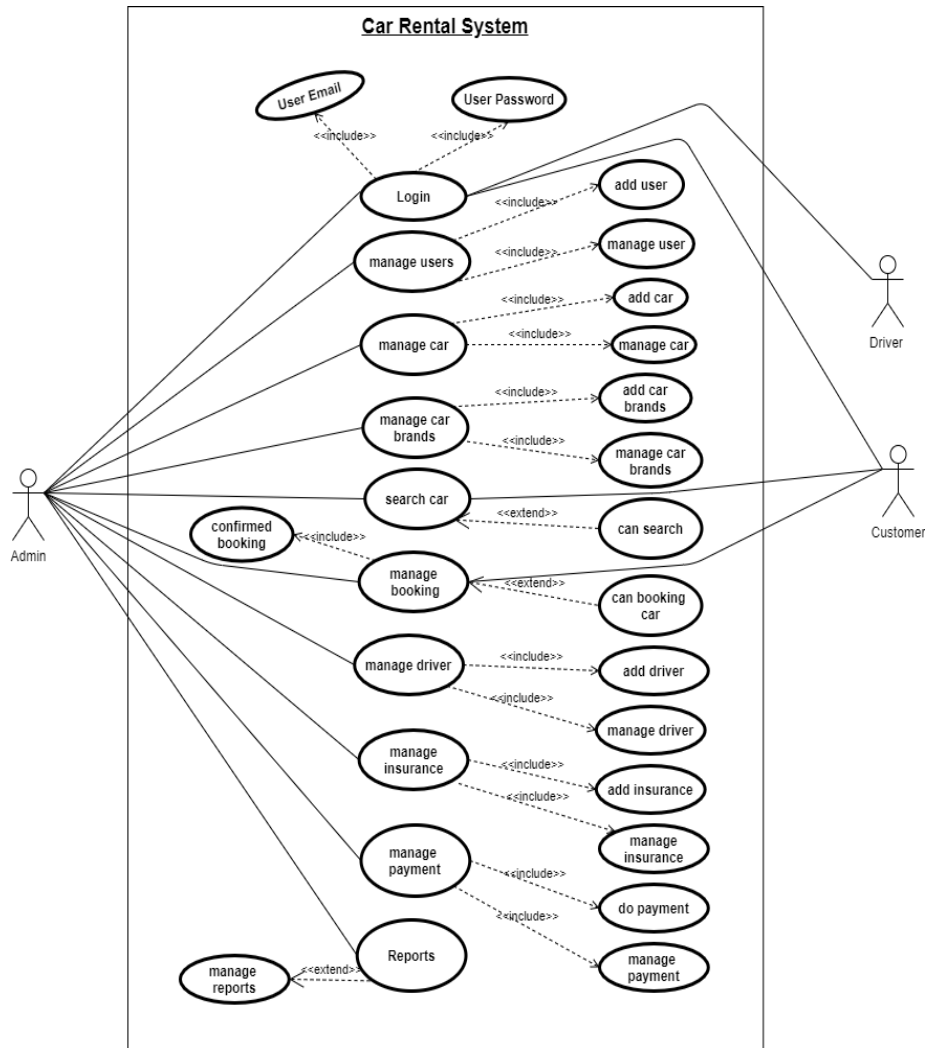


Figure 3.8.2: Use Case Diagram of Car Rental System

### 3.8.3 Use case text

1. **Use case title:** Login

**Actor:** Admin, Customer, Driver

**Description:** The user will be presented with a login page to get access to the system. Users are required to provide their password and email. The system will then match it to the appropriate user role and link them to that user's home page.

**Use case title:** Manage user

**Actor:** Admin

**Description:** During this phase, the admin will handle the user. Use case title: Manage user. Add a new user, provide them with a user email and password, and allow them to login or register in our system. The user's information can be updated and deleted by the administrator.

2. **Use case title:** Car Booking

**Actor:** Admin, Customer, Driver

**Description:** The customer can view the vehicle before renting it for a set period of time. Customer can obtain the reserved car even without admin confirmation. Admin will contact or email the driver who is available to drive the car when booking is confirmed.

3. **Use case title:** Car and Car Brands

**Actor:** Admin, Customer

**Description:** The administrator can access the list of cars and can add cars to this page. The Car may be modified or removed by the Admin. The brands are likewise managed by admin. Additionally, the client can view the car's information and book a rental.

4. **Use case title:** Driver

**Actor:** Admin

**Description:** When a car is booked, the administrator will add the driver. The administrator can edit/delete drivers from the list after viewing the list.

5. **Use case title:** Payment

**Actor:** Admin, Customer

**Description:** For each booking reason, the administrator will add a payment section to this page, where users may pay and obtain payment receipts.

6. **Use case title:** Report

**Actor:** Admin

**Description:** The expense report can be generated by administration.

### 3.9 Project Scheduling Chart

The overall project schedule is shown by a chart. In how many weeks the project has been established can be measure by seeing the charts. It's an easy way to understand about project planning and scheduling before starting the work.

Activity	w 1	w 2	w 3	w 4	w 5	w 6	w 7	w 8	W 9	W 10	W 11	W 12	W 13
Customer interaction													
Starting to plan													
Assessment													
Layout													
Optimizing													
Going to test													
Execution													

Figure 3.9: Project Schedule Chart



# CHAPTER 4

## Analysis Modeling

### 4.1 Activity Diagram

Activity diagram is actually used to understand how the project is working. It shows sequentially workflow and activity based on project action sequences and initiating condition of project. Activity diagrams display the actions and status of business and software operations. Developers used activity diagram to understand the workflow of project programs on high level. The utility can be used by developers to pinpoint limitations and factors that result in particular events. When complex decisions are required, a flow chart is converted to an activity diagram.

In that following figure 4.1.1 shows Activity Diagram of Admin for Managing User and Driver.

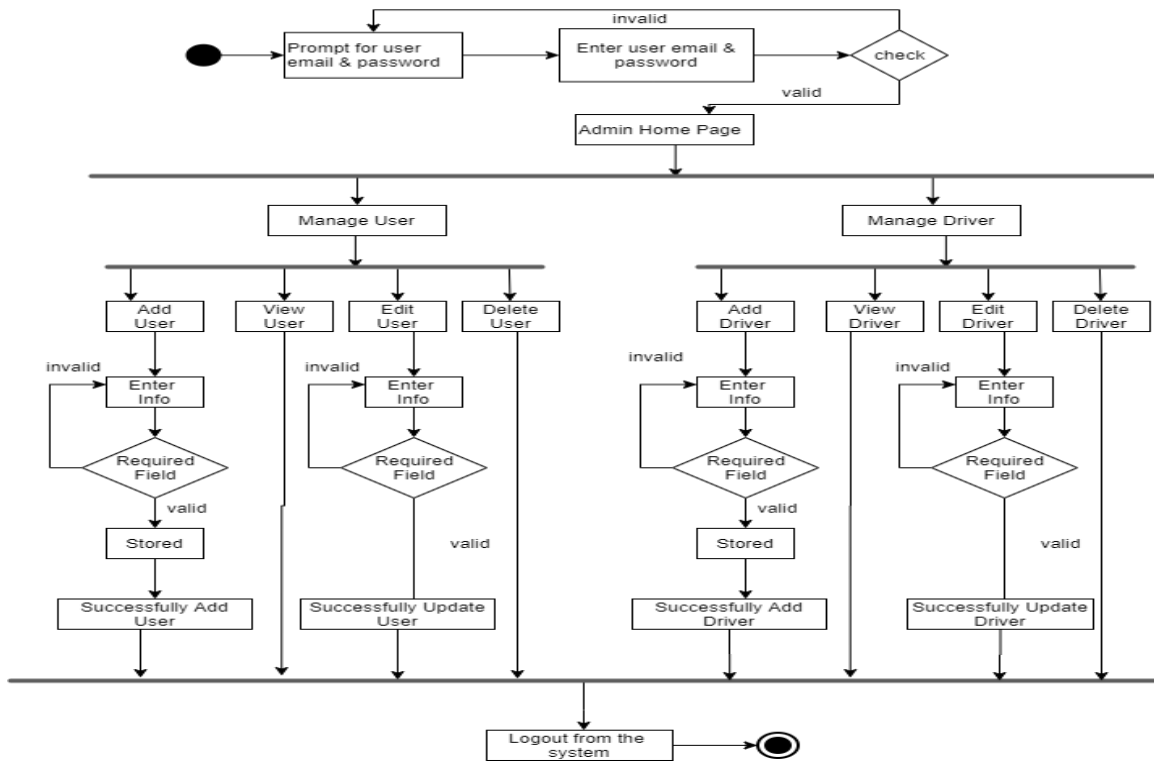


Figure 4.1.1: Activity Diagram of Admin for Managing User and Driver

In that following figure 4.1.2 shows Activity Diagram of Admin for Managing Booking and Payments.

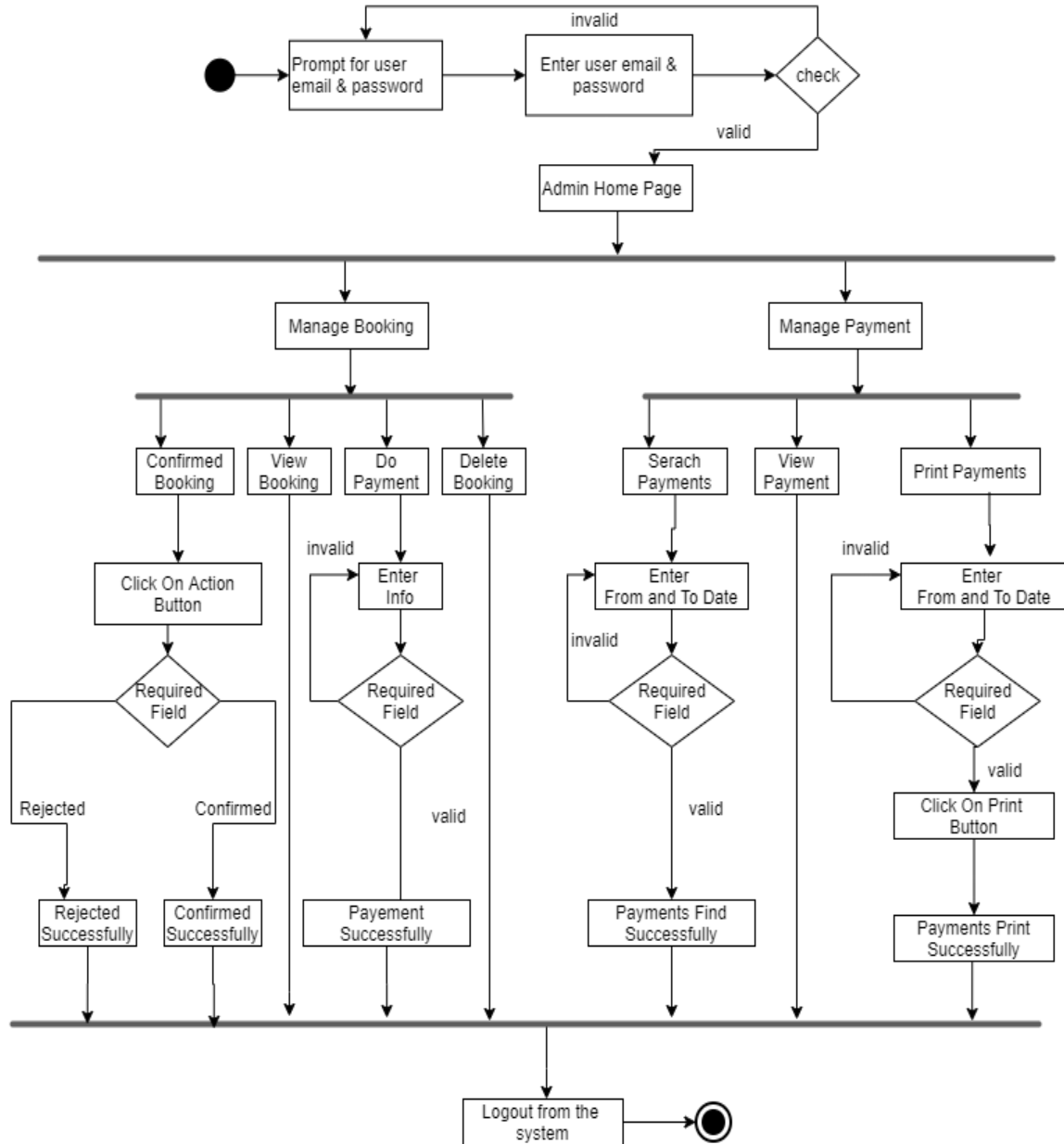


Figure 4.1.2: Activity Diagram of Admin for Managing Booking and Payments

In that following figure 4.1.3 shows Activity Diagram of Admin for Managing Cars and Cars Brand

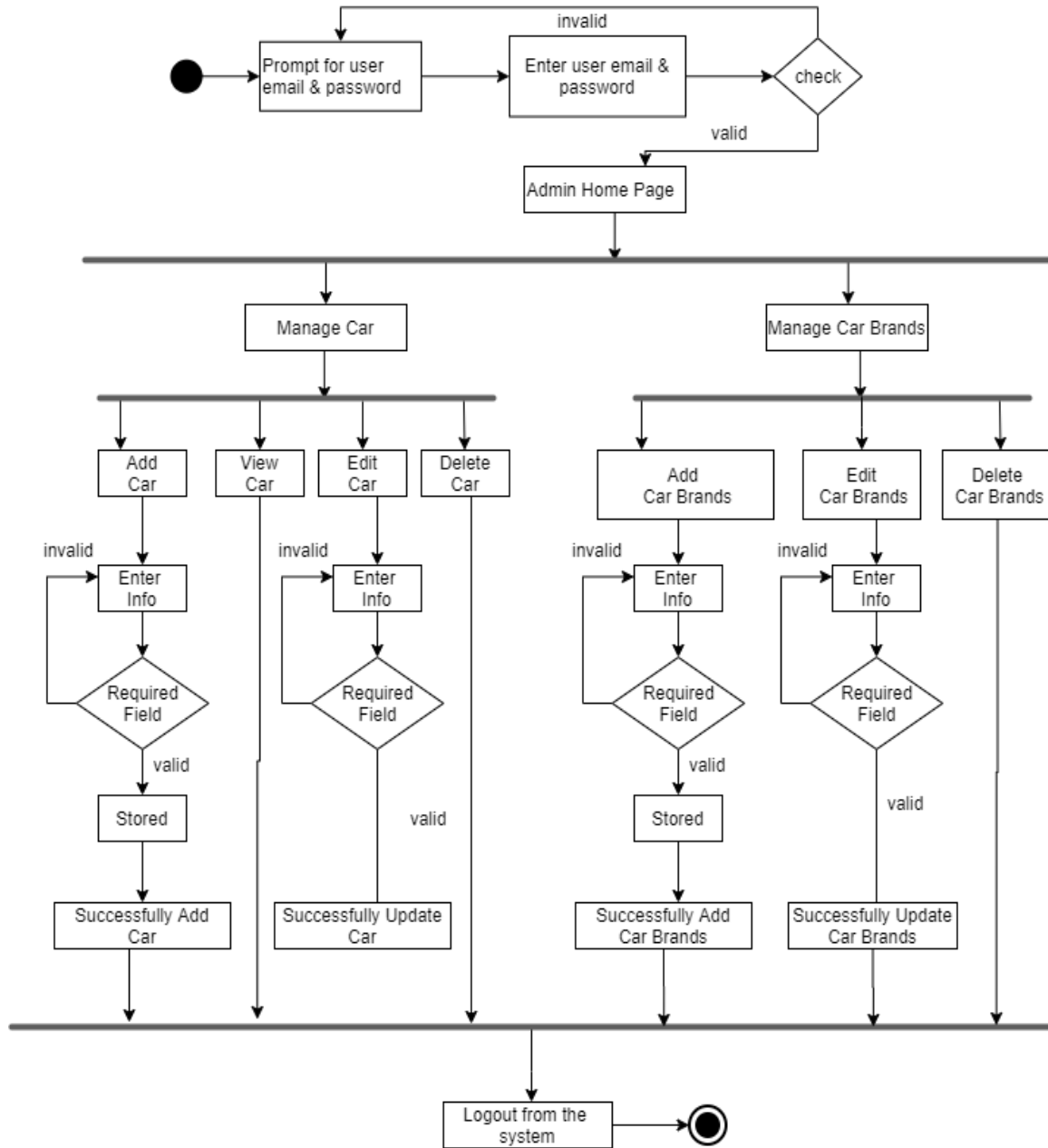


Figure 4.1.3: Activity Diagram of Admin for Managing Cars and Cars Brands

In that following figure 4.1.4 shows Activity Diagram of Customer for Managing User (Customer) Profile and Car Booking.

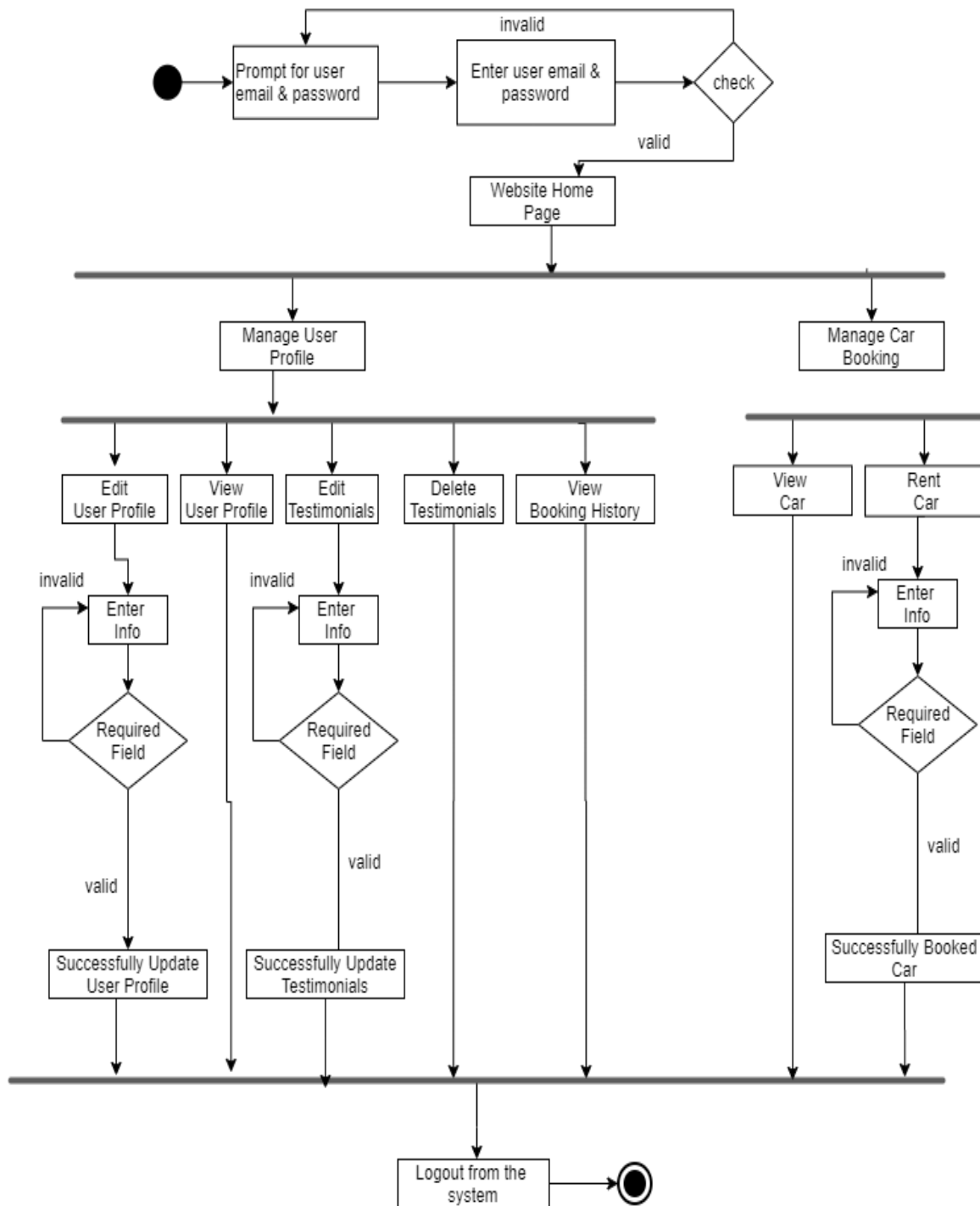


Figure 4.1.4: Activity Diagram of Customer for Managing User(Customer) Profile, and Car Booking

In that following figure 4.1.5 shows Activity Diagram of Driver for Managing Driver Profile and Booking Schedules.

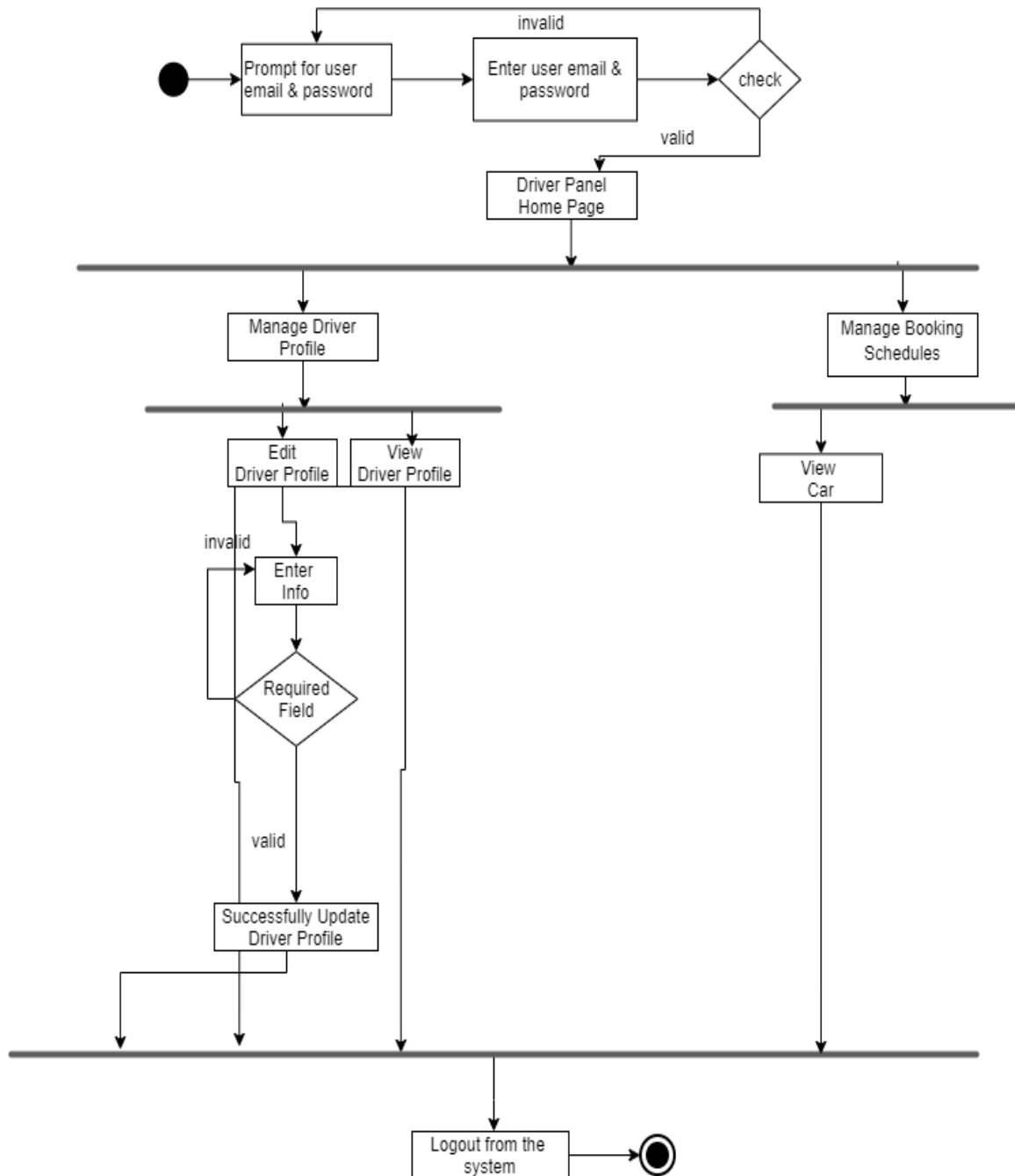


Figure 4.1.5: Activity Diagram of Driver Managing Driver Profile, and Booking Schedules

In that following figure 4.1.6 shows Activity Diagram of Admin for Managing Booking Reports.

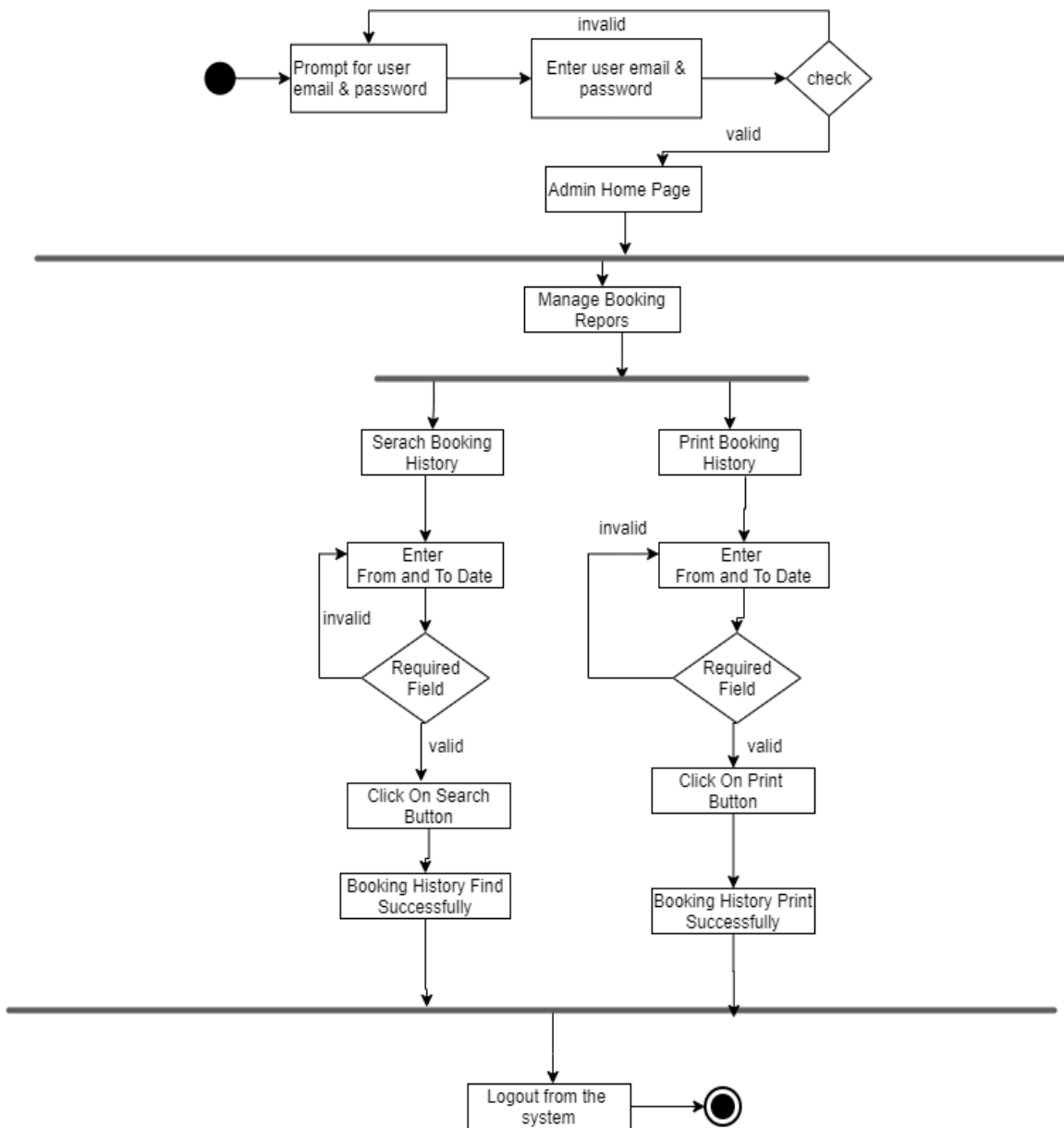


Figure 4.1.6: Activity Diagram of Admin for Managing Booking Reports

# CHAPTER 5

## Designing

### 5.1 Interface Design

In that following figure 5.1.1 shows Admin Dashboard View.

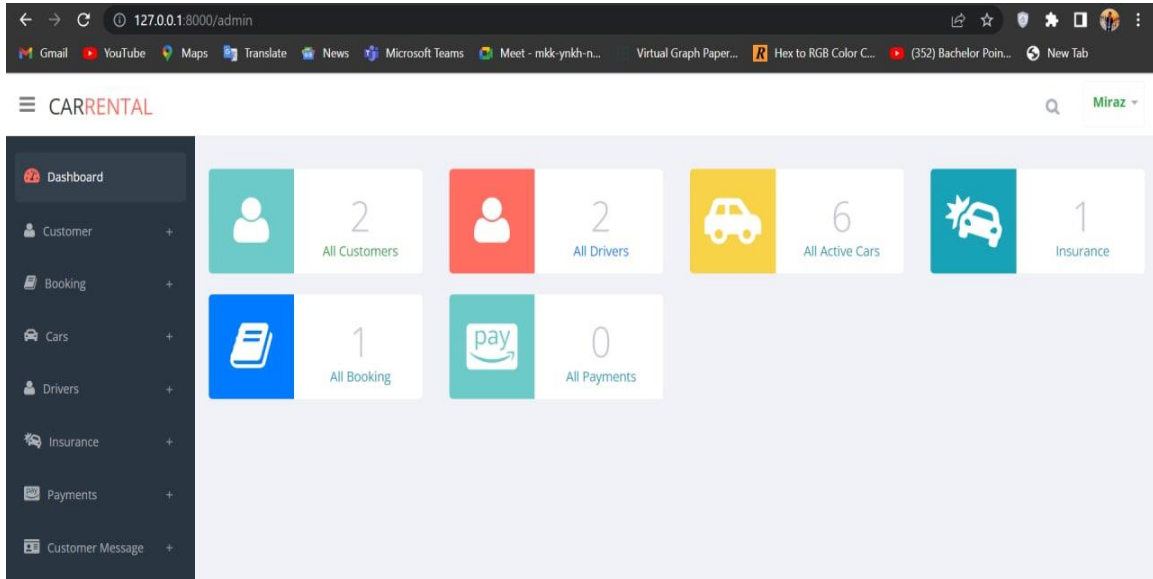


Figure 5.1.1 : Admin Dashboard View

In that following figure 5.1.2 shows Car Rental Website View.

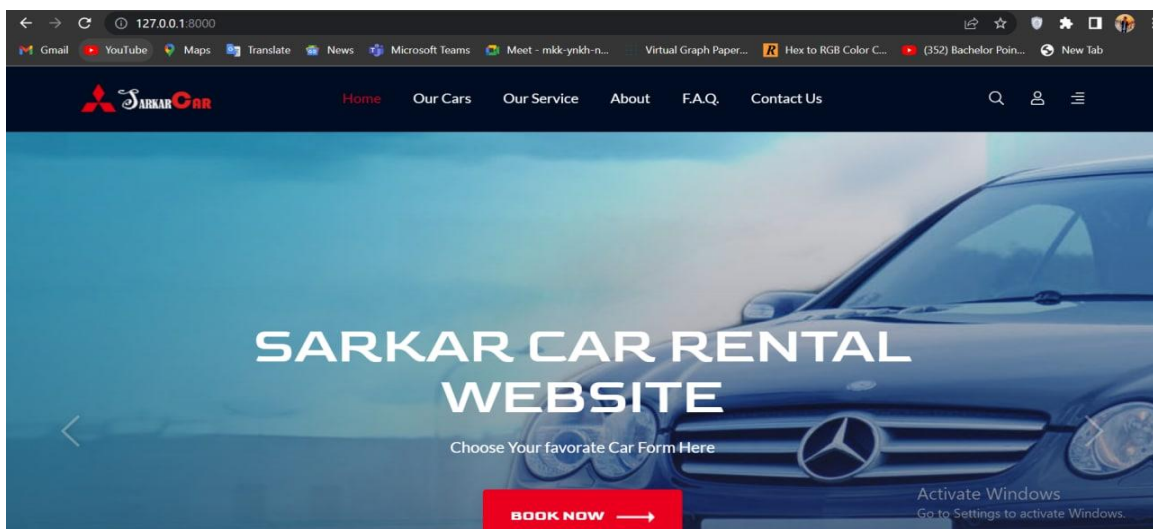


Figure 5.1.2: Car Rental Website View

In that following figure 5.1.3 shows Customer Profile View.

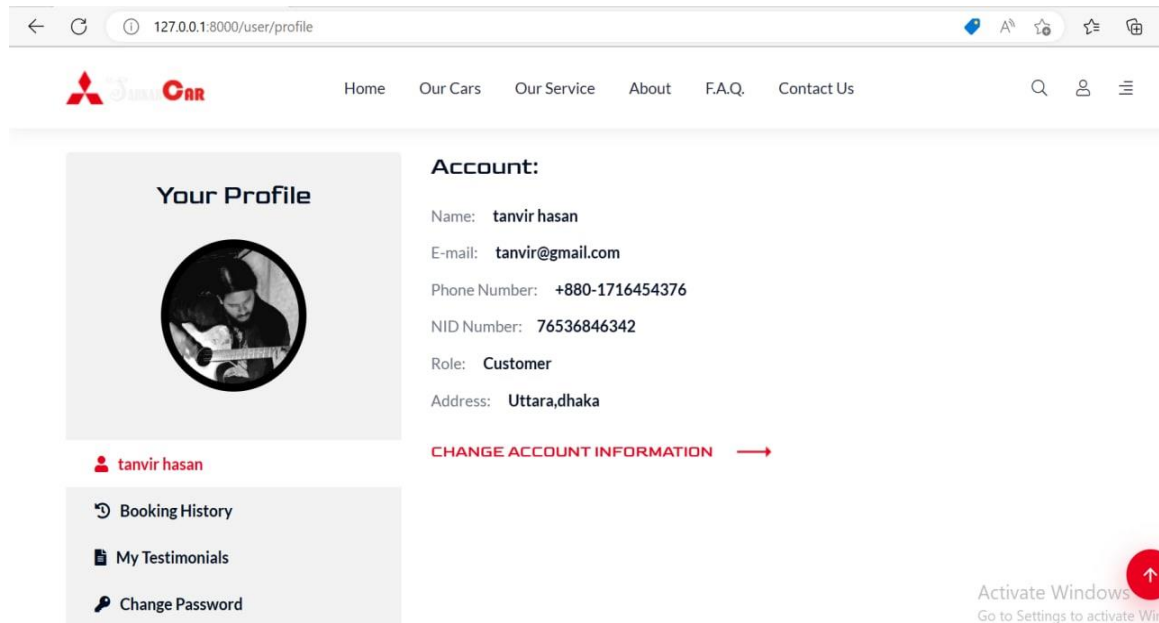


Figure 5.1.3: Customer Profile View

In that following figure 5.1.4 shows Driver Profile View.

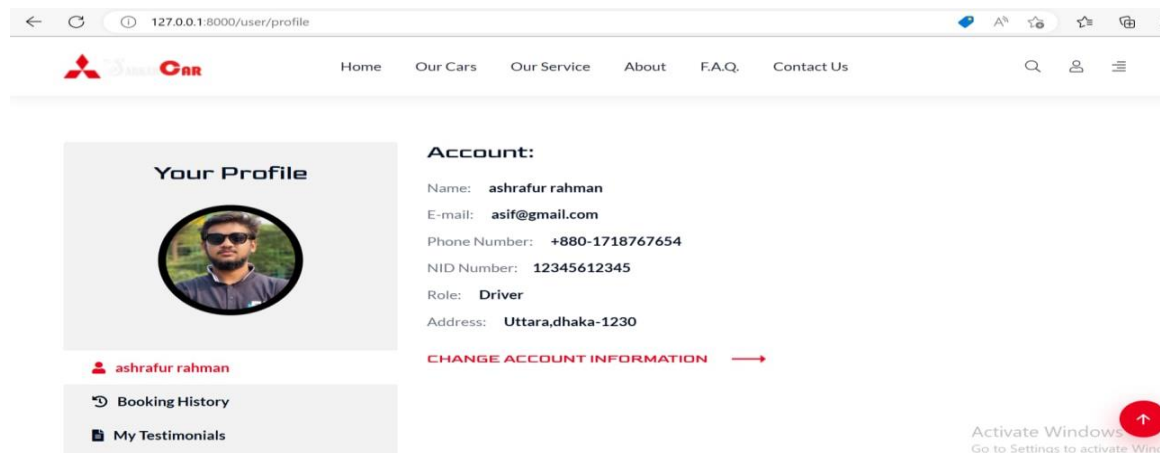


Figure 5.1.4: Driver Profile View



## 5.2 Context Level Diagram

In that following figure 5.2 shows Context Level Diagram.

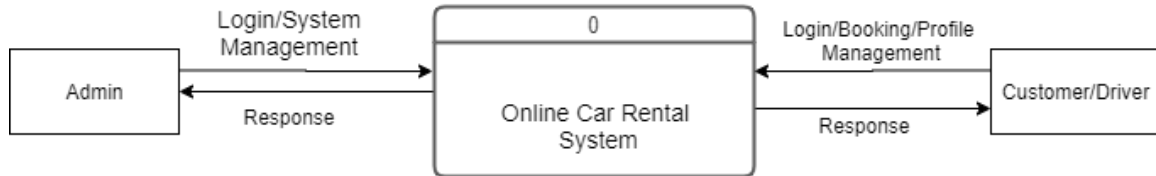


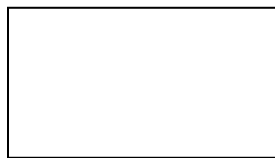
Figure 5.2: Context Level Diagram

## 5.3 Data Flow Diagram

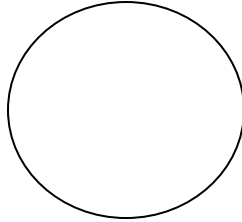
A data flow diagram (DFD) is actually shows us how information moves from input to output as well as the transformations that are used. DFD is also called by bubble chart or a data flow graph. Any level of abstraction can be represented by a system or piece of software using the DFD. The DFD offers a framework for both functional and information flow modeling. The complete program or system element is represented as a single bubble in a level 0 DFD,.

In DFD, there are four symbols:

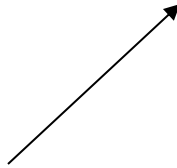
- External Entity



- Process



- Data Flow



- Data Store



### 5.3.1 DFD Process (Login)

In that following figure 5.3.1 show DFD Process (Login).

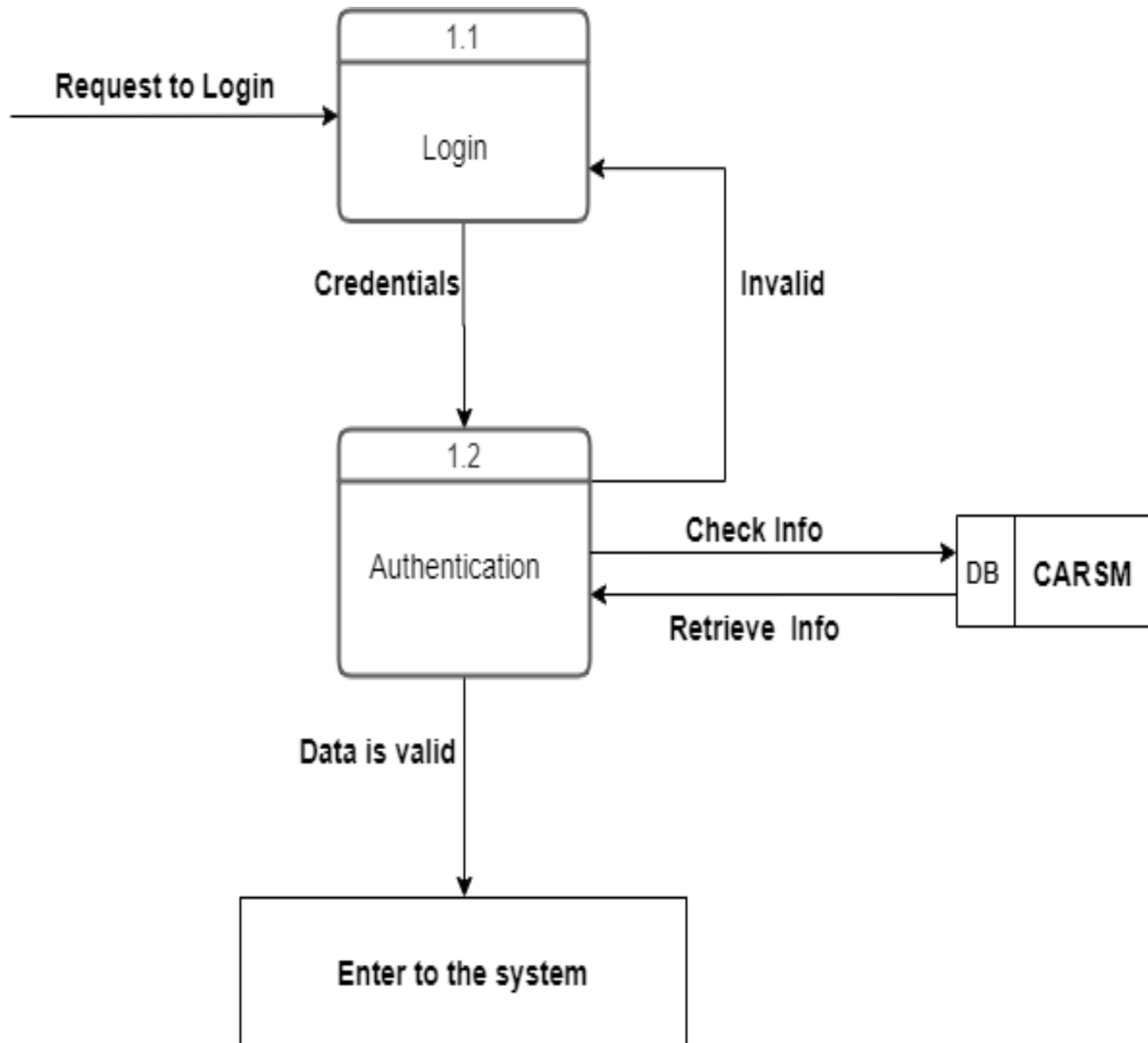


Figure 5.3.1: DFD Process 1

### 5.3.2 DFD Process (User)

In that following figure 5.3.2 show DFD Process (User).

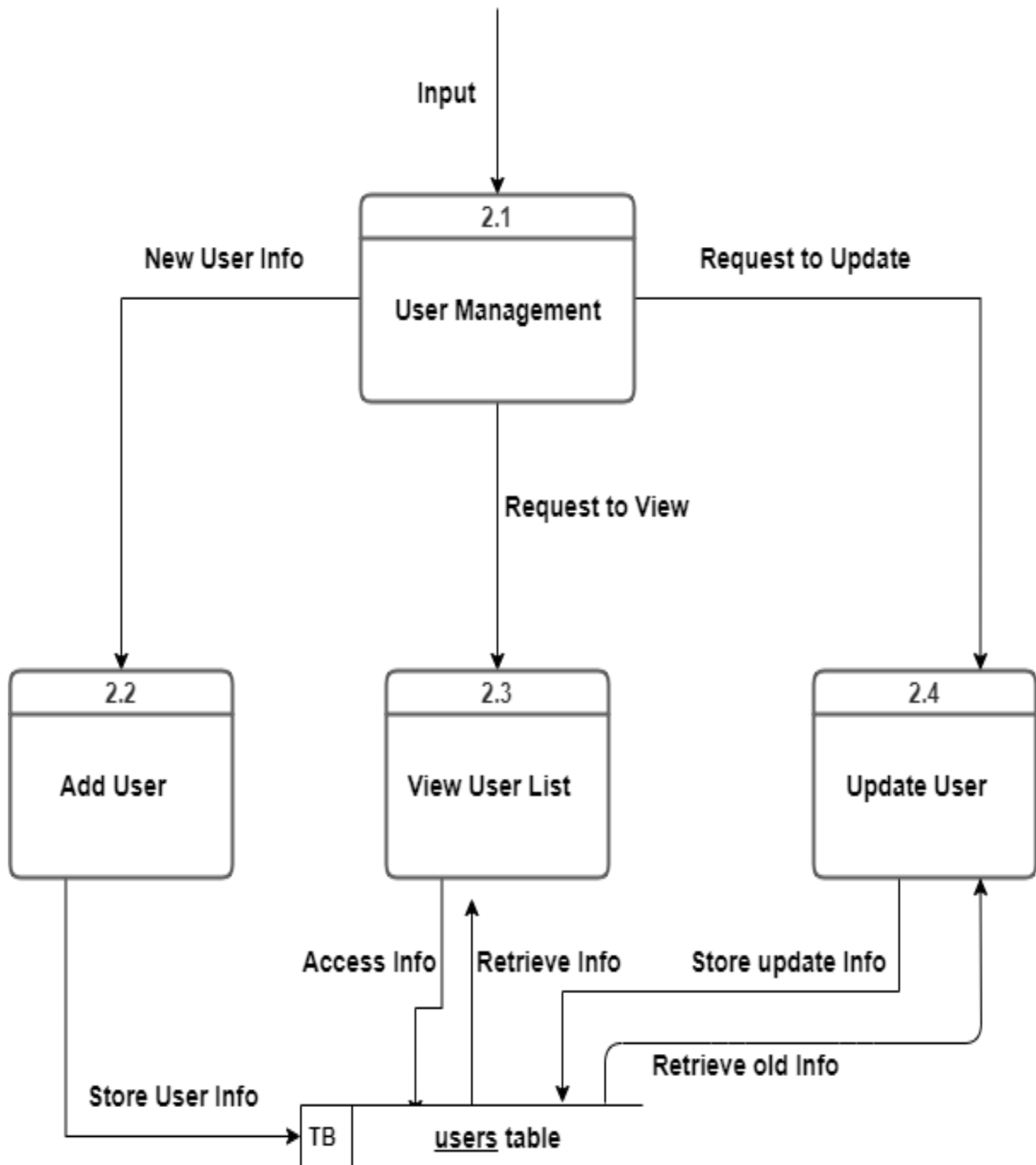


Figure 5.3.2: DFD Process 2

### 5.3.3 DFD Process (Driver)

In that following figure 5.3.3 show DFD Process (Driver).

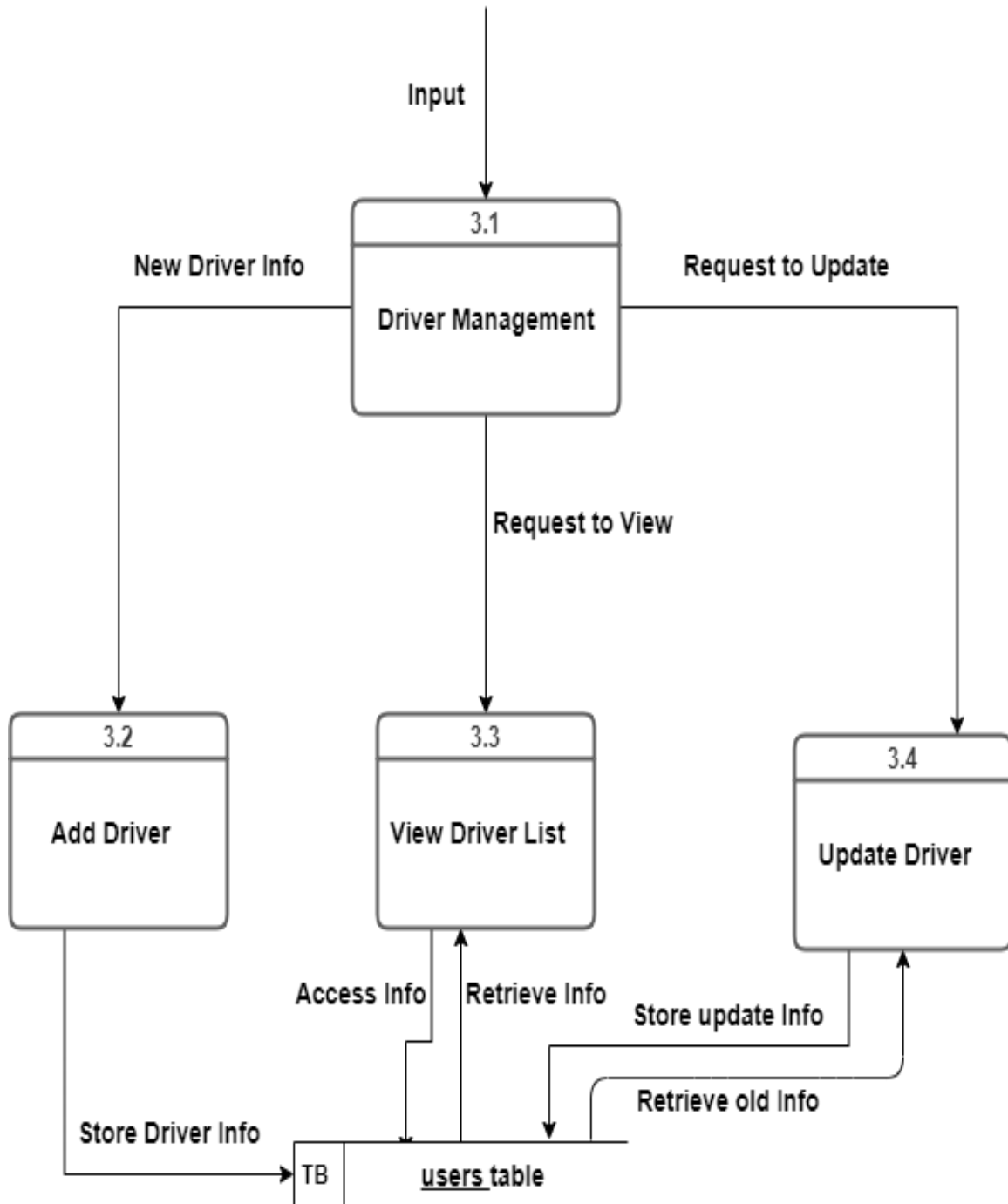


Figure 5.3.3: DFD Process 3

### 5.3.4 DFD Process (Car)

In that following figure 5.3.4 show DFD Process (Car)

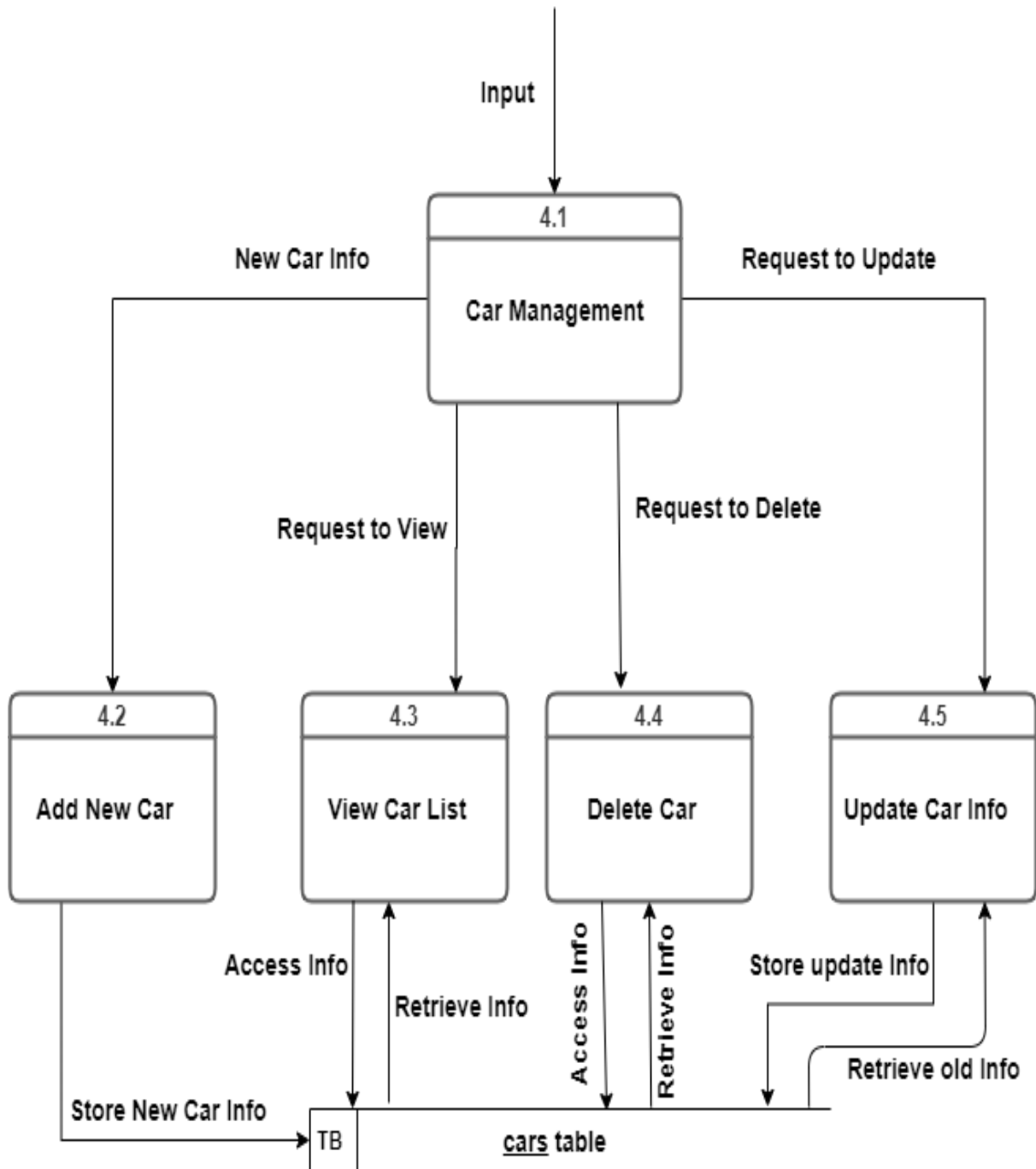


Figure 5.3.4: DFD Process 4

### 5.3.5 DFD Process (Car Booking)

In that following figure 5.3.5 show DFD Process (Car Booking)

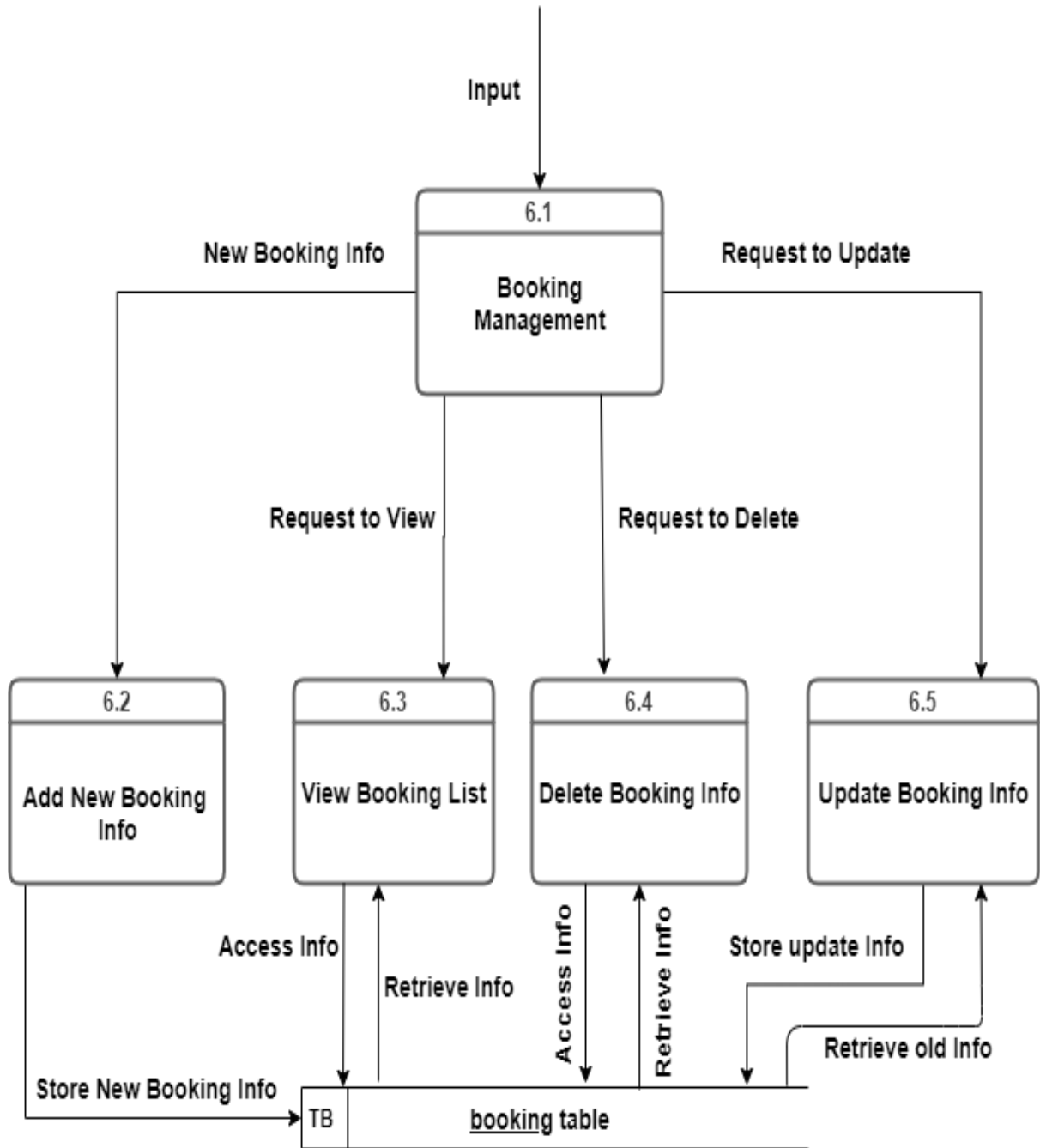


Figure 5.3.5: DFD Process 5

### 5.3.6 DFD Process(Payment)

In that following figure 5.3.6 show DFD Process (Payment)

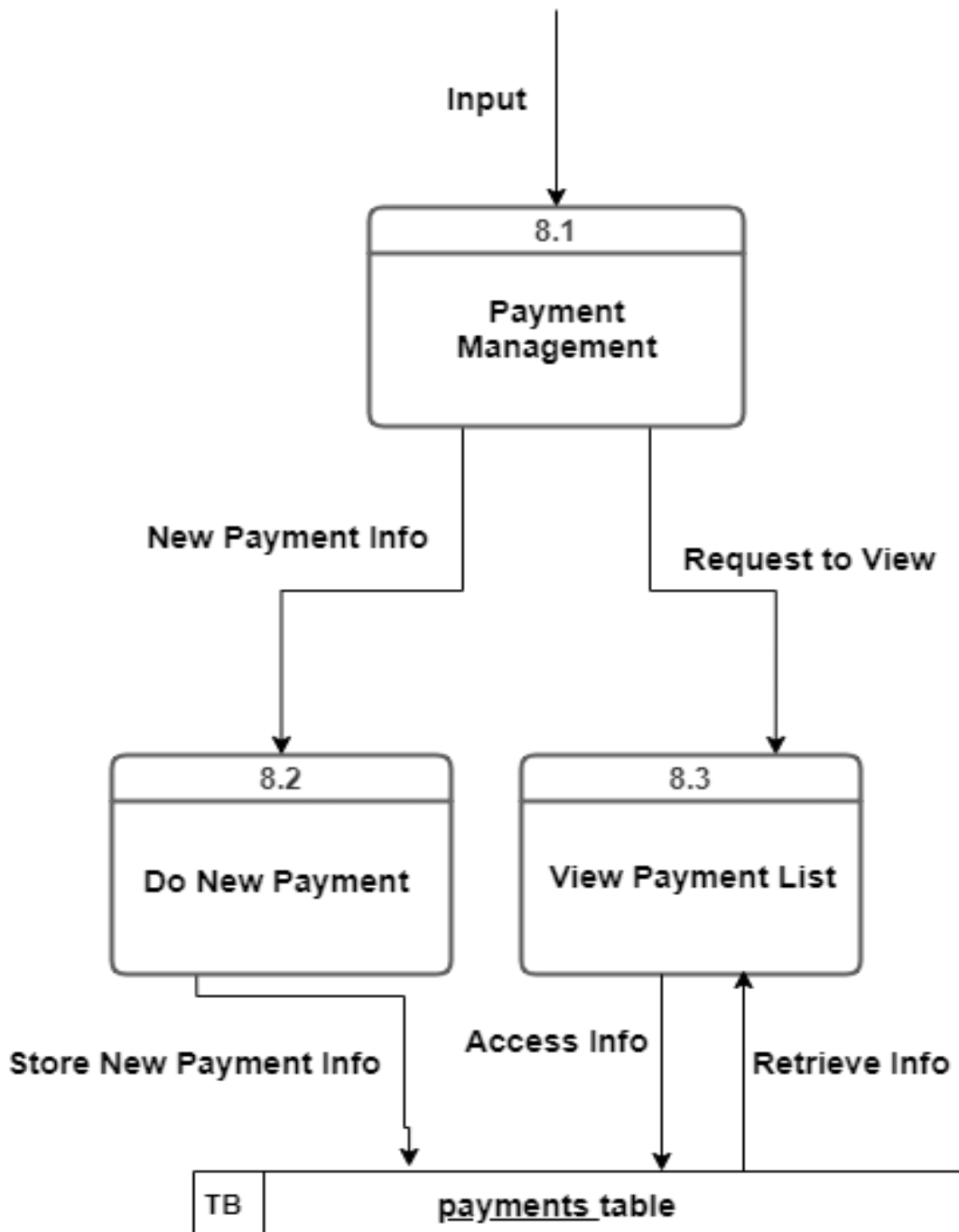


Figure 5.3.6: DFD Process 6



## **5.4 Database Design**

An arranged collection of data is called a database. A relational database in more clear terms is a set of models, tabular, inquiries, statistics, interfaces, and other components. As an illustration, modeling hotel room availability in a way that makes it simpler to recognize hotels with vacancies. The characteristics of the asset are usually organized by database designers to facilitate the operations which need information. Database design is the operation of constructing a comprehensive database data model. This data model means the physical requirements for creating a design in a data definition language, which might also ultimately be used to build a database, as well as the physical storage settings, logical design choices, and physical needs. Each entity in a properly attributed data model has certain attributes.

### **5.4.1 ER Diagram**

An Entity Relationship Diagram actually shows us the connections between the entity sets in a whole database. The entity between this context is a collection of information. The logical structure of the database is then represented in the ER diagram. Entity relationship (ER) diagrams are a form of flowchart that display how "entities," such as humans, objects, or ideas, connect to one another on the inside of a system. ER diagrams are often used in software engineering, education, information systems, business, and research to create or solve problems in relational databases. These are also known as ERDs or ER models, and they leverage a predefined set of symbols to represent way entities, relationships, and their properties are interconnected. Ovals, diamonds, rectangles and connection lines are instances of those symbols. An ER diagram shows how the data that a system generates is processed.

An ER diagram is a means of visualizing how the information a system produces is related. The following figure 5.4.1 shows ER diagram of Car Rental Management System. This Diagram Has 8 entities and lots of attributes and some important relationship in this system.

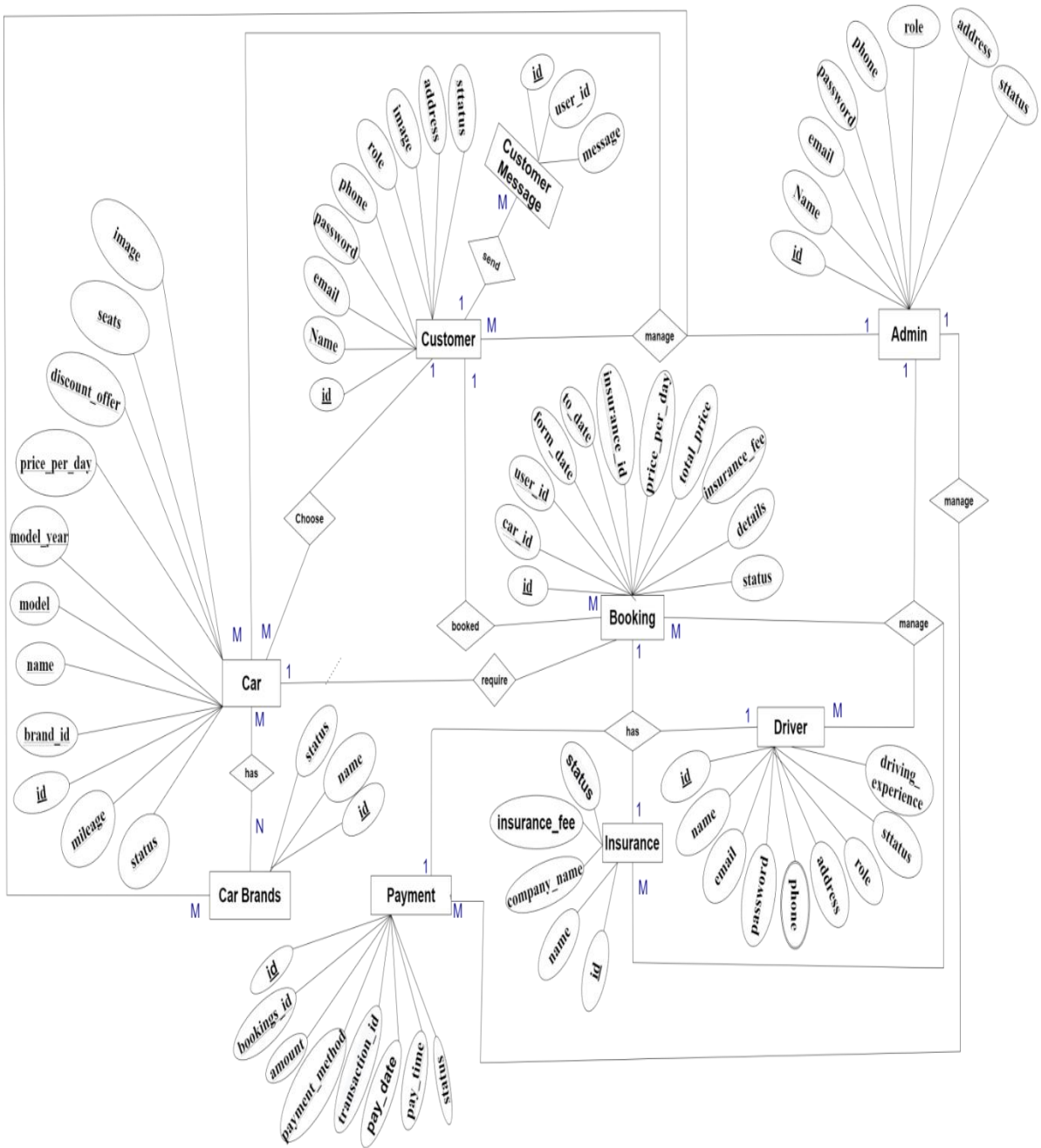


Figure 5.4.1: Entity Relationship Diagram

## 5.5 Database Table Structure

### 5.5.1 CRS Database Structure:

In that following figure 5.5.1 shows CRS Database Structure.

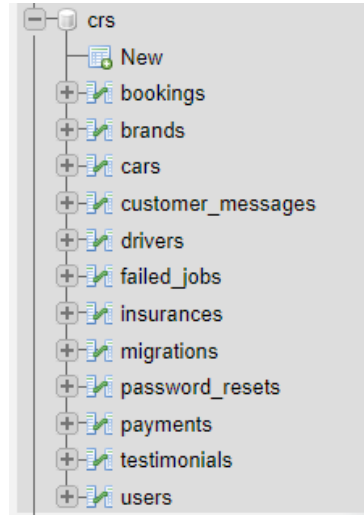


Figure 5.5.1: CRS database structure

### 5.5.2 User Table Structure:

In that following figure 5.5.2 shows User Table Structure.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change  Drop  More
<input type="checkbox"/>	2 name	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	3 email	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	4 role	varchar(255)	utf8mb4_unicode_ci		No	user			Change  Drop  More
<input type="checkbox"/>	5 phone	int(11)			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	6 email_verified_at	timestamp			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	7 password	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	8 image	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	9 nid_number	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	10 address	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	11 remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	12 created_at	timestamp			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	13 updated_at	timestamp			Yes	NULL			Change  Drop  More

Figure 5.5.2: User Table structure

### 5.5.3 Car Table Structure:

In that following figure 5.5.3 shows Car Table Structure.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	<b>id</b>		UNSIGNED	No	None		AUTO_INCREMENT	Change  Drop  More
<input type="checkbox"/>	2	<b>brand_id</b>			No	None			Change  Drop  More
<input type="checkbox"/>	3	<b>name</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	4	<b>model</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	5	<b>car_engine</b>	utf8mb4_unicode_ci		No	dsu78998f			Change  Drop  More
<input type="checkbox"/>	6	<b>model_year</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	7	<b>price_per_day</b>			No	0.00			Change  Drop  More
<input type="checkbox"/>	8	<b>discount_offer</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	9	<b>image</b>	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	10	<b>color</b>	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	11	<b>air_condition</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	12	<b>power_deadlock</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	13	<b>anti_lockbraking</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	14	<b>brake_assist</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	15	<b>power_steering</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	16	<b>cd_player</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	17	<b>central_locking</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	18	<b>crash_sensor</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	19	<b>mileage</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	20	<b>transmission</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	21	<b>seats</b>			No	None			Change  Drop  More
<input type="checkbox"/>	22	<b>luggage</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	23	<b>fuel</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	24	<b>decs</b>	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	25	<b>status</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	26	<b>created_at</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	27	<b>updated_at</b>			Yes	NULL			Change  Drop  More

Figure 5.5.3: Car Table structure

### 5.5.4 Car Brands Table Structure:

In that following figure 5.5.4 shows Brand Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	<b>id</b>		UNSIGNED	No	None		AUTO_INCREMENT	Change  Drop  More
<input type="checkbox"/>	2	<b>brand</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	3	<b>status</b>	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	4	<b>created_at</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	5	<b>updated_at</b>			Yes	NULL			Change  Drop  More

Figure 5.5.4: Car Brands Table structure

### 5.5.5 Booking Table Structure:

In that following figure 5.5.5 shows Booking Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	<b>id</b>		UNSIGNED	No	None		AUTO_INCREMENT	Change  Drop  More
<input type="checkbox"/>	2	<b>car_id</b>			No	None			Change  Drop  More
<input type="checkbox"/>	3	<b>user_id</b>			No	None			Change  Drop  More
<input type="checkbox"/>	4	<b>insurance_id</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	5	<b>from_date</b>			No	None			Change  Drop  More
<input type="checkbox"/>	6	<b>to_date</b>			No	None			Change  Drop  More
<input type="checkbox"/>	7	<b>price_per_day</b>			No	0.00			Change  Drop  More
<input type="checkbox"/>	8	<b>insurance_fee</b>	utf8mb4_unicode_ci		No	0			Change  Drop  More
<input type="checkbox"/>	9	<b>total_price</b>			No	0.00			Change  Drop  More
<input type="checkbox"/>	10	<b>due</b>			No	0.00			Change  Drop  More
<input type="checkbox"/>	11	<b>details</b>	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
<input type="checkbox"/>	12	<b>status</b>	utf8mb4_unicode_ci		No	pending			Change  Drop  More
<input type="checkbox"/>	13	<b>created_at</b>			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	14	<b>updated_at</b>			Yes	NULL			Change  Drop  More

Figure 5.5.5: Booking Table structure

### 5.5.6 Driver Table Structure:

In that following figure 5.5.6 shows Driver Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	<b>id</b>	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change  Drop  More
2	<b>name</b>	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
3	<b>email</b>	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
4	<b>role</b>	varchar(255)	utf8mb4_unicode_ci		No	user			Change  Drop  More
5	<b>phone</b>	int(11)			Yes	NULL			Change  Drop  More
6	<b>email_verified_at</b>	timestamp			Yes	NULL			Change  Drop  More
7	<b>password</b>	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
8	<b>image</b>	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
9	<b>nid_number</b>	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
10	<b>address</b>	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
11	<b>driver_experience</b>	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
12	<b>remember_token</b>	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change  Drop  More
13	<b>created_at</b>	timestamp			Yes	NULL			Change  Drop  More
14	<b>updated_at</b>	timestamp			Yes	NULL			Change  Drop  More

Figure 5.5.6: Driver Table structure

### 5.5.7 Payment Table Structure:

In that following figure 5.5.3 shows Payment Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 <b>id</b>	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change  Drop  More
<input type="checkbox"/>	2 <b>booking_id</b>	int(11)			No	None			Change  Drop  More
<input type="checkbox"/>	3 <b>amount</b>	double(10,2)			No	0.00			Change  Drop  More
<input type="checkbox"/>	4 <b>payment_method</b>	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	5 <b>transaction_id</b>	varchar(255)	utf8mb4_unicode_ci		No	None			Change  Drop  More
<input type="checkbox"/>	6 <b>pay_date</b>	date			No	None			Change  Drop  More
<input type="checkbox"/>	7 <b>pay_time</b>	time			No	None			Change  Drop  More
<input type="checkbox"/>	8 <b>status</b>	varchar(255)	utf8mb4_unicode_ci		No	pending			Change  Drop  More
<input type="checkbox"/>	9 <b>created_at</b>	timestamp			Yes	NULL			Change  Drop  More
<input type="checkbox"/>	10 <b>updated_at</b>	timestamp			Yes	NULL			Change  Drop  More

Figure 5.5.7: Payment Table Structure

# CHAPTER 6

## TESTING

### 6.1 System Testing

A test procedure is system testing. With its help we can track and evaluate and may monitor and assess whether a fully integrated system or product acts as intended in line with functional specifications. It responds to the question, Only the external who working with these features are evaluated while the testing because it falls within the category of system testing. It is fully user-centered and doesn't call for any technical knowledge of coding, designing, programming and etc.

### 6.2 System Testing Methodology

A developed product is considered ready only if it has passed multiple levels of software testing. Every main as well as little element of the software is trailed to guarantee both its quality and functionality, beginning including its insider structures and codes and moving on to its primary characteristics, executive functions, functionality, and more. Two Category of Software Testing: 1) Black Box Testing, 2) White Box Testing

### 6.3 System Testing Design

Table 6.3.1 System Testing Scenario – 1

Scenario	User Login System
Input's	Enter E-mail and password
Desired Output's	With valid mail & pass access should gained.
Actual Output's	system worked as wanted
Decision	Showing results of desired outputs and shows the system is fortunate for login.

Table 6.3.2: System Testing Scenario – 2

Scenario	Adding new User by admin
Input's	Required information's of users to Create
Desired Output's	If all required information is correctly filled out, new User will be incorporated into the system
Actual Output's	system works correctly as desired outputs
Decision	Like desired outputs and actual outputs, the system shows perfect result so as system is fortunate for new User.

Table 6.3.3: System Testing Scenario – 3

Scenario	Adding new Driver by admin
Input's	Required information's of driver to Create
Desired Output's	If all required information is correctly filled out, new Driver will be incorporated into the system
Actual Output's	system works correctly as desired outputs
Decision	Like desired outputs and actual outputs, the system shows perfect result so as system is fortunate for new Driver.

Table 6.3.4: System Testing Scenario – 4

Scenario	Adding new Car by admin
Input's	Required information's of car to Create
Desired Output's	If all required information is correctly filled out, new car will be incorporated into the system
Actual Output's	system works correctly as desired outputs
Decision	Like desired outputs and actual outputs, the system shows perfect result so as system is fortunate for new Car.



Table 6.3.5: System Testing Scenario – 5

Scenario	Admin can Add new Car Brands
Input's	Required information's of car brand to Create
Desired Output's	If all required information is correctly filled out, new car brand will be incorporated into the system
Actual Output's	system works correctly as desired outputs
Decision	Like desired outputs and actual outputs, the system shows perfect result so as system is fortunate for new Driver.

Table 6.3.6: System Testing Scenario – 6

Scenario	User can Book Car and Admin Manage it
Input's	Required Car booking information for Create
Desired Output's	If all required information is correctly filled out, new car booking will be incorporated into the system
Actual Output's	system works correctly as desired outputs
Decision	Like desired outputs and actual outputs, the system shows perfect result so as system is fortunate for new car booking.

Table 6.3.7: System Testing Scenario – 7

Scenario	Admin can Add Payment
Input's	Required payment information for Create
Desired Output's	If all required information is correctly filled out, new payment will be incorporated into the system
Actual Output's	system works correctly as desired outputs
Decision	Like desired outputs and actual outputs, the system shows perfect result so as system is successful for new Payment.

## CHAPTER 7

### Conclusion and Future scope

#### 7.1 Discussion and Conclusion

##### 7.1.1 Discussion

The creation of more efficient operational procedures and management processes is essential in this age of present science, information, and internet communication. With the expansion of networks and the internet, online car rental businesses are emerging and rising significantly. We designed a car rental website from which people can easily rent their desired car easily staying at home. Just they need to enter our websites and have to make an account that's it. Now people can easily book their car from home easily with a very reasonable and affordable price. Finally, the members of our team that successfully completed this project are optimistic that the customers will obtain sufficient benefits.

##### 7.1.2 Conclusion

The majority of firms today rely on technology and use online systems. Online systems have already undergone numerous adjustments due to necessity. The primary goal of our project is to make it easier for such firms to efficiently perform their manual tasks, and for our project, we have chosen the Online Car Rental System as an example of a company that manages its manual tasks using technology. Being a part of the software implementation process at Easy Code Software has been the most rewarding experience. The implement issue was where I had the greatest experience. We have picked up a lot of fresh knowledge.

The following indicator will show some of our technical issues that we've learnt about and resolved as a result of working on this project:

- The design plan for a website project.
- The web-based project's evaluating plan.
- The contemporary landscape of programming languages.
- The Laravel MVC framework working process.

- The project will be more effective if some design patterns are followed.
- Acquiring an understanding of the MVC pattern and using it in the project.

## **7.2 Limitations and Future Scope**

### **7.2.1 Limitations**

- Real-time car position detection is still not available.
- A mechanism for backing up databases needs to be created.
- The implementation of real-time driver notification for booking purposes is not yet complete.

### **7.2.2 Future scopes**

- Making use of real-time vehicle location detection
- Using real-time notifications to deliver to drivers for booking purposes
- Online payment system will be added as soon as possible

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