

QuickAi – ONLINE SEAT RESERVATION AND CAR RENTAL SYSTEM

BY

MUSTAK AHAMMED

ID: 153-15-6596

AND

ARAFA AFRIN MOU

ID: 161-15-6799

AND

MD. ABDULLAH AL NOMAN

ID: 161-15-7291

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

Supervised By

Mr. A. S. M. Farhan Al Haque

Lecturer

Department of CSE

Daffodil International University

Co-Supervised By

Anup Majumder

Lecturer

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

DECEMBER 2019

APPROVAL

This Project/internship titled “QuickAi – ONLINE SEAT RESERVATION AND RENTAL SYSTEM”, submitted by Mustak Ahammed, ID No: 153-15-6596 and Arafa Afrin Mou, ID No: 161-15-6799 and Md. Abdullah Al Noman, ID No: 161-15-7291 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 07/12/19.

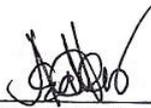
BOARD OF EXAMINERS



Dr. Syed Akhter Hossain
Professor and Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Chairman



Abdus Sattar

Assistant Professor

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

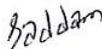


Farah Sharmin

Senior Lecturer

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Dr. Md. Saddam Hossain

Assistant Professor

Department of Computer Science and Engineering
United International University

External Examiner

DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Mr. A. S. M. Farhan Al Haque, 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:



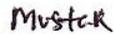
Mr. A. S. M. Farhan Al Haque
Lecturer
Department of CSE
Daffodil International University

Co-Supervised by:

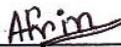


Anup Majumder
Senior Lecturer
Department of CSE
Daffodil International University

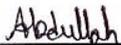
Submitted by:



Mustak Ahammed
ID: 153-15-6596
Department of CSE
Daffodil International University



Arafa Afrin Mou
ID: 161-15-6799
Department of CSE
Daffodil International University



Md. Abdullah Al Noman
ID: 161-15-7291
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

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

We really grateful and wish our profound our indebtedness to **Mr. A. S. M. Farhan Al Haque, Lecturer, Department of CSE** Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of mobile application development 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 express our heartiest gratitude to **Dr. Syed Akhter Hossain Head, Department of CSE**, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

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

There are many online applications available for the bus seat reservation and anyone can reserve seats of his choice online at home. **QuickAi** is a Web-based online seat reservation system for both bus and car to provide people a comfortable and easy interface for the people, overrides the existing manual system. QuickAi has some features that differentiate our application from the existing software's/applications as like; it consists of cars also and city transit that runs only city areas. This will provide a better way to buy bus tickets and car reservation.

By using our application, users can get hassle free service at home that saves time and money. QuickAi provides features that a user can see available bus or tickets, price and other information to choose seat among available seats anytime. Also, available reservation of cars for a particular date or date. Our application provides services for both long road buses and city transit buses runs inside cities. This application provides better security and online payment directly through the application. This web-application can be very effective for the people who want to go on a travel or the increase business of transport company.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
CHAPTER	
CHAPTER 01: INTRODUCTION	1-3
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	1
1.4 Expected outcome	2
1.5 Report Layout	2
CHAPTER 02: BACKGROUND	4-5
2.1 Introduction	4
2.2 Related Works	4
2.3 Comparative Studies	4
2.4 Scope of the Problem	5
2.5 Challenges	5
CHAPTER 03: Requirement Specification	6-15
3.1 Business Process Modeling	6
3.2 Requirement Collection and Analysis	6
3.3 Use Case Modeling and Description	7
3.4 Logical Data Model	14
3.5 Design Requirements	14
CHAPTER 04: DESIGN SPECIFICATION	16-19
4.1 Front-end Design	16
4.2 Back-end Design	16
4.3 Interaction Design and UX	17
4.4 Implementation Requirements	19

CHAPTER 05: IMPLEMENTATION AND TESTING	20-29
5.1 Implementation of Database	20
5.2 Implementation of Front-end Design	21
5.3 Implementation of Interactions	28
5.4 Testing Implementation	28
5.5 Test Results and Reports	29
CHAPTER 06: CONCLUSION AND FUTURE SCOPE	30-30
6.1 Discussion and Conclusion	30
6.2 Scope for Further Developments	30
REFERENCES	31
APPENDIX	32

LIST OF FIGURES

FIGURES	PAGE NO
Figure 3.1: BPM for Bus Seat Reservation	6
Figure 3.2: BPM for Car reservation	6
Figure 3.3: Use Case Diagram	10
Figure 3.4: ER-Diagram of System	14
Figure 3.5: Flow Chart of Seat Reservation	15
Figure 4.1: Architecture of MVC Framework	17
Figure 4.2: Database Tables	17
Figure 4.3: The 7 Factors Influence the User Experience	18
Figure 5.1: Database Structure	20
Figure 5.2: Implantation of User Table	20
Figure 5.3: Implantation of Admin Table	20
Figure 5.4: Implantation of Available Seats Table	21
Figure 5.5: Implantation of Route Table	21
Figure 5.6: Implantation of Bus Table	21
Figure 5.7: Implantation of Schedule Table	21
Figure 5.8: Required Field for Registration	22
Figure 5.9: Login Page	22
Figure 5.10: Dashboard Page	23
Figure 5.11: Search Seat	23
Figure 5.12: Search Car	24
Figure 5.13: Seat Selection	25
Figure 5.14: Selecting Seats	25
Figure 5.15: Payment page	26
Figure 5.16: Invoice Page	27
Figure 5.17: Login Page	27
Figure 5.18: Add Transport Page	28

LIST OF TABLES

TABLES	PAGE NO
Table 2.1: Comparative analysis Table	4
Table 5.1: System Tasting Table	29

CHAPTER 01

INTRODUCTION

1.1 Introduction

QuickAi is a web-based online seat reservation system for both long and short road buses and cars that will override the manual system. It provides facility that anyone can buy tickets easily from home just using a visit a simple website. This simple web application can make anyone's life easier and more comfortable those who are planning to travel somewhere in bus or need to go for offices, schools or workplace. Also mention that, our application provide facility to reserve seats in buses that runs in cities (city transit buses). If anyone wants to reserve a car then this also available through our website.

QuickAi saves time, cost and helpful for those who are busy with his work or don't want go anywhere to buy tickets. There will be an admin panel to control or manage the reservation system. After all, it's simple to buy a ticket just in a few minutes following few steps.

1.2 Motivation

There are already several seat reservation applications available but we have tried to bring some features that maybe helpful for people or feels more comfortable using our application. Though there are about 16.1 million of people in Bangladesh using internet [1], that motivates us to develop a web-based application. This would be responsible for any kind of browsers or platforms as like; Computer, Mobile.

We have developed the application having facility to reserve city transit bus tickets that runs on a particular city area. This will be very helpful for the employers, students or workers who need to stand for buses seeking empty seats. They can search for available seats and buy tickets before the journey. So, **QuickAi** would be a proper solution for them.

1.3 Objectives

There are some of the objectives discussed below about our project.

- To provide online system for seat reservation/buying tickets.
- To override the old manual system for ticket reservation.
- To provide reservation facility for both buses and cars. Including the buses runs in a city area called city transit buses.
- Payment system availability.
- To save time/money.
- To get rid of hassle or unpleasant situations during buying tickets.

1.4 Expected Outcome

Outcome is something that affects the system, improves or update. Though our application is about seat reservation, we hope to provide easier, comfortable and hassle-free service to the people. We proposed a system that override manual system, replacing it with online web-application. People will be helpful using our application on buying tickets online. Our application QuickAi has the following outcomes.

- Will override manual system.
- Time/money will be saved.
- Will replace cash payment with online digital payment gateway.
- To enable get rid of any hassle on busing tickets.

1.5 Report Layout

Report layout is the structure of report file that discuss what it contains and how the information's are presented. In our project report, the report is divided into 6 chapters and those are discussed below.

▪ Chapter 01: Introduction

Introductory chapter discuss about the introductory information about the project and Motivation behind building the application, Objectives and what will be the Outcome of the project after it published for all.

▪ Chapter 02: Background

This discuss the Related works with our project, Comparative studies, Challenges appeared during developing the project and Scope of the web application.

- **Chapter 03: Requirement Specification**

Business Process Modeling(BPM), Use Case Diagram, Requirement collection and requirements have been discussed here in chapter three.

- **Chapter 04: Design Specification**

This chapter discuss about the design of frond-end, back-end, how to interact with design and other things.

- **Chapter 05: Implementation and Testing**

This chapter five is about the detail explanation of the Database and testing results and report.

- **Chapter 06: Conclusion and Future Scope**

This chapter shortly discuss some aspects of the web application and wishes for the project. What will be our next step of development, our future plan and cope of the project have been discussed here.

CHAPTER 02

BACKGROUND

2.1 Introduction

QuickAican be a better option for all people to reserve seat anytime anywhere. Though it's a web application, seat reservation would be very easy. Since, our application may not be the 1st in seat reservation system, so in this chapter we will discuss about some applications that likes related with our project, compare them and also discuss about the challenges that we have faced during the project development.

2.2 Related Works

Since, there is some applications on Internet and in Bangladesh that quite similar in some features on the other way some features differentiate our application from the other applications and make it unique. Similar applications available such as; Shohoz, bdtickets.

2.3 Comparative Studies

Since, there is some similar kind of application already available, so comparison between these applications as comparative analysis has been described below in Table 2.1.

Table 2.1: Comparative analysis Table

	Shohoz	bdtickets	QuickAi
Registration	✓	✓	✓
Login/registration Required to Reserve	✓	✓	✓
Email/Phone Verification	✓	✓	✓
Services	Bus	Bus/Air	Bus/ (City Transit Bues)/Car
Payment System	✓	✓	✓
Reserved seat cancellation	✗	✗	✓
Customer service	✓	✓	✓

2.4 Scope of the Project

Since, the project **QuickAi** is about seat reservation or buying tickets, we have worked on these and experienced the demand of transportation in Bangladesh and public suffering for seats on travelling through city transit buses. Obviously, an easy system required to reserve seats if someone wants to go on a journey. So, this is a good scope to spread it over of the people and make services available all over the country.

2.5 Challenges

Challenges are the competitive situation in any task where should have to prove the strength and ability to face the difficulty. During the development of our project sometimes we have faced some difficulties in doing the back-end code. Specially, we have faced a very problematic challenge in particular seat reservation part of the application. The layout design of seating chart, selecting, updating the seats was very challengeable.

CHAPTER 03

REQUIREMENT SPECIFICATION

3.1 Business Process Modelling

Business Process modelling (BPM) in business process management and systems engineering is the activity of representing processes of an enterprise, so that the current process may be analyzed, improved or automated that improves the efficiency [2]. BPM for the project is given below in Figure 3.1.

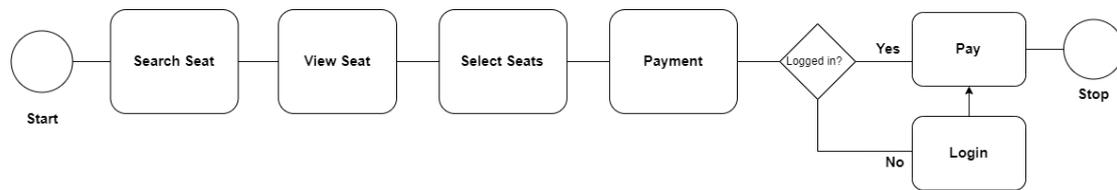


Figure 3.1: BPM for Bus Seat Reservation

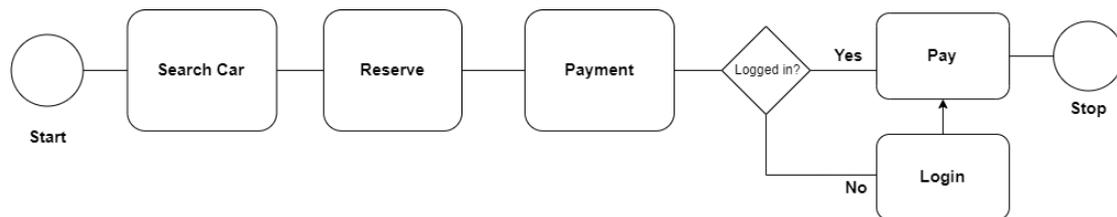


Figure 3.2: BPM for Car reservation

3.2 Requirement Collection and Analysis

3.2.1 Software Requirements

To develop a web-based application certain software's or tools may need to be required. As, we used below listed software's:

- Operating System: Windows.
- System Design: Adobe Photoshop, Adobe Illustrator.
- Language: JavaScript, CSS, HTML, PHP, AJAX, jQuery.
- MVC Framework: Laravel.
- Database: MySQL.
- Server: XAMP, Apache Server.

- IDE: Microsoft Visual Studio.
- Tools: Notepad++, Draw.io
- Debugger:
- Device: Computer, Mobile.
- Browser: Any browser such as; Chrome, Opera, Firefox, Safari etc.

For running the application required:

- Network: Wi-Fi or Cellular network.
- Compatible Device: PC or any mobile devices.
- Browser: Any browser.

3.2.2 Hardware Requirements

To develop the application Hardware that we used are listed below:

- Processor: Intel Core i3 Processor
- RAM: 4GB
- Minimum spaceavailable on Disk: Min. 0.4GB

3.2.3 Functional Requirements

- User interface for as GUI for the users.
- Since, MySQL database is used in the application for storing the information, so it needs to have Wi-Fi or mobile data connection other the application will not work.

3.3 Use Case Modeling and Description

3.3.1 System Model

- User Module and
- Admin Module

User Module

User of the application have following these functions.

▪ **Registration**

Registration is first step of get access to the application. Once registered, can able to reserve seats and other facilities. Registration required some basic information as Full name, Email address, Phone, password etc.

▪ **Login**

After registration a user can able to login to the system by using the Phone Number and Password.

▪ **Phone Number Verification**

After entering the required field for registration, it takes him to a new page where user should enter the verification code that has received on his phone. If the entered code is same as the code received on phone, the registration would be successful.

▪ **Dashboard**

On the Dashboard, user finds the seat reservation information. If he/she has any reserved ticket then it'll displayed here otherwise nothing will be displayed.

▪ **Profile**

A user gets his all information in profile page. There he/she can update the information.

▪ **Search Seat**

A user can search for available transport for a specific source, destination and date. First of all, should enter the source and destination, date and time, seat quantity.

▪ **Available Transport**

After searching for available buses or seats, will be displayed a list of available transport and can select any of the available buses/cars.

▪ **Seat Selection**

Once a bus is selected, a seat selection chart will appear and able to select any of the available seats and can update it if had done any mistake while selecting seats.

- **Payment**

A total cost for the seat or seats will be displayed and users need to pay the total fare for the seats and once payment is completed, the seat will be reserved or bought.

Admin Module

Admin module is for the administration where an admin can control the reservation management. The admin has the following responsibility.

- **Dashboard**

In this page, admin can view a list of recent seat reservation requests.

- **Reserved Seat Information**

An admin can view all the recent request for seat reservation where admin can control it, able to cancel the reservation maintaining the Terms and Conditions.

- **Adding Transport and Transport Information**

An admin can add transport (Bus/Car) information's as Roads, Available seats, Fare etc.

3.3.2 Use Case Diagram and Description

A use case diagram is a graphic depiction of the interactions among the elements of a system and it's a methodology used in system analysis to identify, clarify, and organize system requirements [3]. Use Case Diagram is shown in figure 3.3.

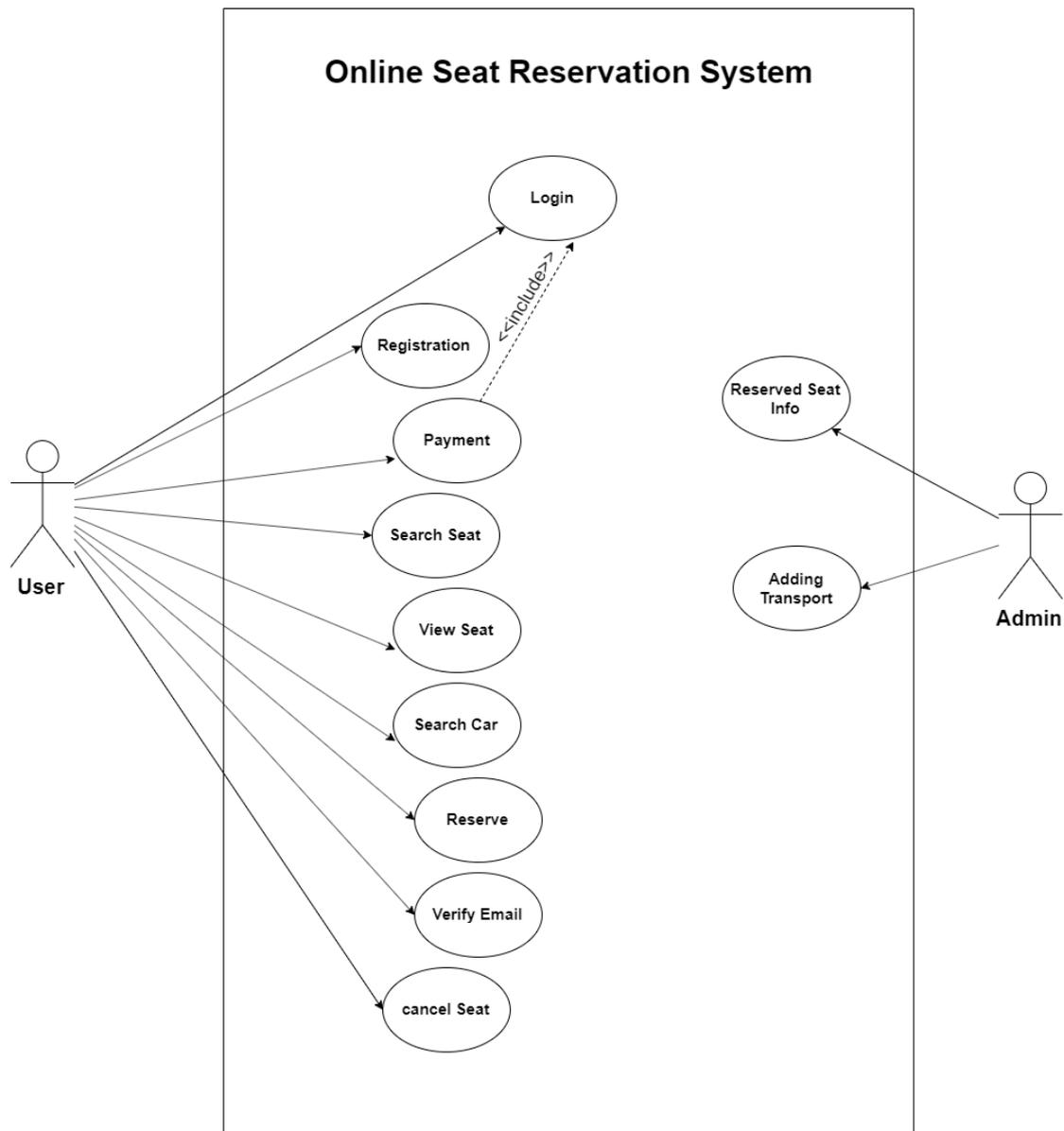


Figure 3.3: Use Case Diagram

Actor: User

Flow of steps

This Use case starts when a user opens the application. A user can have the following features in the application.

- **Registration**

Brief Description: Users can register themselves entering the required details for registration.

Actor: User

Flow of steps

- a. This use case starts when a User successfully registered.

- **Login**

Brief Description: After successful registration can login to the application.

Actor: User

Flow of steps

- a. This use case starts when a user login to the system.

- **Phone Verification**

Phone number verification is required to reserve seats or car. During registration, users have to verify his phone number. A verification code will be sent to the provided phone number and should enter the code to verify it.

- **Dashboard**

Brief Description: After successful login to the application, dashboard page will be the 1st page.

Actor: User

Flow of steps

- a. This use case starts when a user login to the application.
- b. Users able to find reserved seat or car details and can cancel the reserved seat.

- **Profile**

Brief Description: There a user will able to find his/her account details and can update their details. Once the profile is completed, a user can buy tickets/reserve car.

Actor: User

Flow of steps

- a. This use case starts when a User login to the system.

▪ **Search Bus**

Brief Description: For searching available seats, should provide the source and destination, date and time, seat quantity and in next page available seats and buses will appear.

Actor: User

Flow of steps

- a. Use case starts when a user login/visit the page.
- b. For search available seat login not required.

▪ **Search Car**

Brief Description: Searching for available cars on a particular date and time and in next page available cars list and related information will appear.

Actor: User

Flow of steps

- a. Use case starts when a user login/visit the page.
- b. For search available seat login not required.

▪ **Available Transport**

Brief Description: List of available transport (Bus/Car) will appear with details of Transport name, source, destination, time schedule and fare.

Actor: User

Flow of steps

- a. Use case starts when a user login/visit the page.
- b. Login/registration is not required.

▪ **Seat Selection**

Brief Description: Users can select available seats or update it from the seat selection chart.

Actor: User

Flow of steps

- a. Use case starts when a user login/visit the page.
- b. Login/registration is not required but need to login while paying the fee.

▪ **Payment**

Brief Description: Users able to pay for the selected seats and total fare can be paid directly from the application

Actor: User

Flow of steps

- a. Use case starts when a user login to the application and select seats.

Actor: Admin

Flow of steps

This Use case starts when an admin login to the admin panel.

▪ **Login**

Brief Description: Admin can login to the system by entering email username and password.

Actor: Admin

Flow of steps

- a) This use case starts when anadminlogin to the admin panel.

▪ **Reserved Seat Information**

Brief Description: Admincan see requested seats for reservation and can control it.

Actor: Admin

Flow of steps

- a) This use case starts when aadmin loggedin to the admin panel.
- b) Admincan see who has reserved the seat and other details.

▪ Adding Transport

Brief Description: Though, an admin has full access of the application, so admin can add Transport, Road, Fare, Available seats etc.

Actor: Admin

Flow of steps

- a) This use case starts when an admin logged in to the system.

3.4 Logical Data Model

The logical data model represents the data processing modules. The Entity-Relationship Diagram/Model (ER Diagram) represents the logical data model. The diagram for the application is shown in figure 3.4.

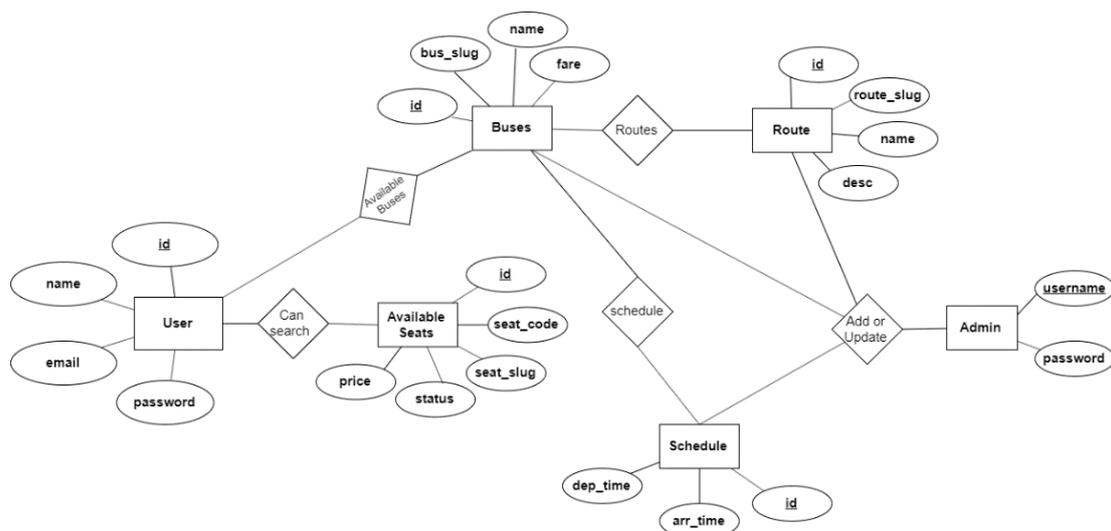


Figure 3.4: ER-Diagram of System

3.5 Design Requirements

To design a system several things, need to keep in mind. Designing an application for better and expected outcome, properly functioning of features is required. While the conditions are satisfying or not, whether there give any bugs is very important for the success. As in our web application, the seat reservation part is very crucial. The working procedure of seat reservation have been discussed with flow chart diagram in figure 3.5.

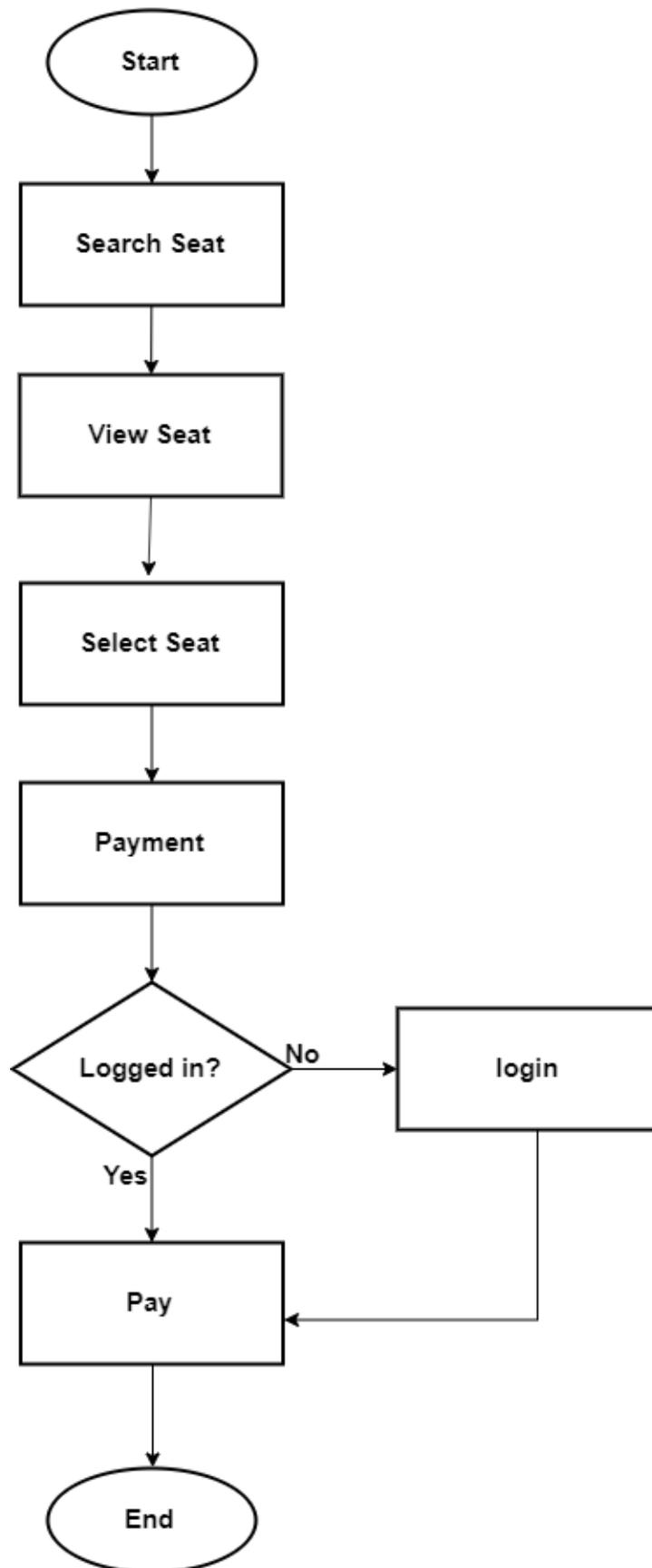


Figure 3.5: Flow Chart of SeatReservation

CHAPTER 04

DESIGN SPECIFICATION

4.1 Front-end Design

Front-end design is the main look and attraction of any application and as such it's very important for success of the application. Since, we want to make the web application easy and comfortable for everyone. So, we tried to design front-end better. Below are some of the designs of different features of the application QuickAi.

User

1. Registration Screen
2. Login Screen
3. EmailVerification
4. Phone Verification
5. Dashboard Screen
6. Profile Screen
7. Search Seat
8. Available Buses/Cars Screen
9. Seat Selection Screen
10. Payment Screen

Admin

1. Login Screen
2. Dashboard Screen
3. Seat Reservation Information
4. Adding Transport.

4.2 Back-end Design

Back-end refers to the server-side design of the application This discuss about the database, how it connects to the front-end and to the server and the purpose of Framework. The figure 4.1 illustrates the full back-end process about how the back-end design system works.

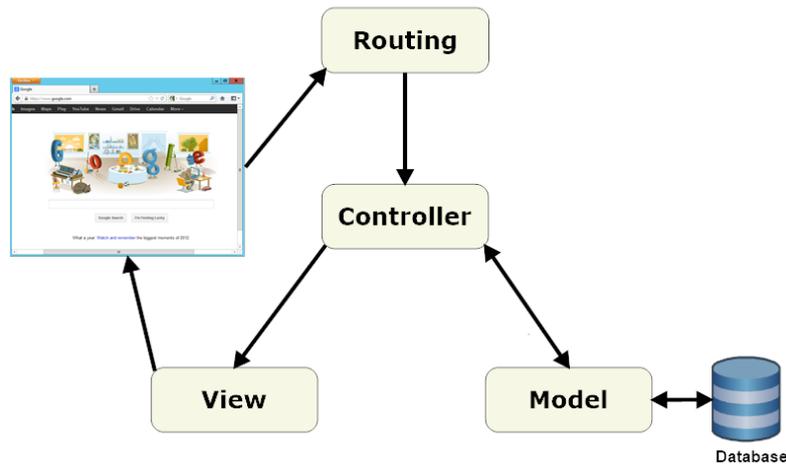


Figure 4.1: Architecture of MVC Framework

DBMS table for the application is given below:

Table	Action	Rows	Type	Collation	Size	Overhead
admin	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16 KiB	-
buses	Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	32 KiB	-
bus_stop	Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	48 KiB	-
districts	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	32 KiB	-
failed_jobs	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16 KiB	-
migrations	Browse Structure Search Insert Empty Drop	14	InnoDB	utf8mb4_unicode_ci	16 KiB	-
password_resets	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32 KiB	-
routes	Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_unicode_ci	48 KiB	-
route_stop	Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	48 KiB	-
schedules	Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_unicode_ci	48 KiB	-
seats	Browse Structure Search Insert Empty Drop	35	InnoDB	utf8mb4_unicode_ci	48 KiB	-
stops	Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	64 KiB	-
users	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	32 KiB	-
13 tables	Sum	86	InnoDB	utf8mb4_general_ci	480 KiB	0 B

Figure 4.2: Database Tables

4.3 Interaction Design and UX

UX means for User Experience. The success of an application mostly depends on the User Experience and Interaction Design is a part of it. Using the application, what feels a user about the application is very important. So, before implementing a project these should be remembered. UX has 7 factors that influence it [4] has shown in figure 4.3.

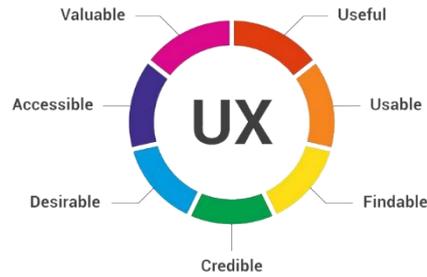


Figure 4.3: The 7 Factors Influence the User Experience

Home Screen Interaction Design and UX

Home screen is very crucial for any website/application. So, in our application homepage consist of some basic constant information's designed as looked good. It consists of logo at the top then menu that links all of the pages of the website as Login, Registration, Search Sea, Contact and other pages. From the home screen users can search for seats availability.

Login Screen Interaction Design and UX

From the login screen users can login to the applications user panel by entering the email/phone and password. If user entered the correct information then it will direct to the Dashboard page.

Registration Screen Interaction Design and UX

This is a simple page design. To reserve seats/buying tickets must have to register themselves by entering the required fields as; Name, Email, Phone, Password etc. After successful registration, can login to his account.

Search Seat/ Car Screen Interaction Design and UX

This is the main feature of the application. There is a tabbed menu screen design. From the page, users can search for available seats for a specific source, destination. To search for available seats, doesn't require login.

On the second tab, users can search for car reservation. If there is any available car any that search is available then this will be displayed on the second screen.

Available Transport Screen Interaction Design and UX

This is a display screen where available bus or car with details displayed. User need not to login for this purpose.

Seat Selection Screen Interaction Design and UX

There is seat selection chart designed to select or update seat easily and users can select seats as they are mentioned while searching for available seats. After seat selection, to confirm the reservation, they need to pay for the seats. And to pay the total fee, users have to login or register.

Dashboard Screen Interaction Design and UX

This is the first page when someone login to the application. In this dashboard screen, they will find recent reserved seats. Where they can also cancel the seat. This is simple UI.

Profile Screen Interaction Design and UX

This is the user's profile where they can find all information that have submitted during registration and should fill up all the other field that haven't filled.

4.4 Implementation Requirements

Implementation requirements for the application:

1. PHP
2. CSS
3. HTML
4. JavaScript
5. jQuery
6. Ajax
7. MySQL
8. Laravel Framework
9. Microsoft Visual Studio as IDE
10. XAMP Server (Apache Server)

CHAPTER 05

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Building the application, we have used the MySQL as the back-end database server. Also, used the Laravel as the Framework. We have used Apache server using the XAMP. To build the website, we have needed to use several tables for storing different types of information.

The database and different tables have been discussed below with the figure 5.1-5.7.

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> admin	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16 KiB	-
<input type="checkbox"/> buses	★ Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	32 KiB	-
<input type="checkbox"/> bus_stop	★ Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	48 KiB	-
<input type="checkbox"/> districts	★ Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	32 KiB	-
<input type="checkbox"/> failed_jobs	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16 KiB	-
<input type="checkbox"/> migrations	★ Browse Structure Search Insert Empty Drop	14	InnoDB	utf8mb4_unicode_ci	16 KiB	-
<input type="checkbox"/> password_resets	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32 KiB	-
<input type="checkbox"/> routes	★ Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_unicode_ci	48 KiB	-
<input type="checkbox"/> route_stop	★ Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	48 KiB	-
<input type="checkbox"/> schedules	★ Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_unicode_ci	48 KiB	-
<input type="checkbox"/> seats	★ Browse Structure Search Insert Empty Drop	35	InnoDB	utf8mb4_unicode_ci	48 KiB	-
<input type="checkbox"/> stops	★ Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	64 KiB	-
<input type="checkbox"/> users	★ Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	32 KiB	-
13 tables	Sum	86	InnoDB	utf8mb4_general_ci	480 KiB	0 B

Figure 5.1: Database 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	email_verified_at	timestamp			Yes	NULL			Change Drop More
<input type="checkbox"/> 5	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
<input type="checkbox"/> 6	remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
<input type="checkbox"/> 7	created_at	timestamp			Yes	NULL			Change Drop More
<input type="checkbox"/> 8	updated_at	timestamp			Yes	NULL			Change Drop More

Figure 5.2: Implantation of User Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/> 1	username	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 2	password	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More

Figure 5.3: Implantation of Admin Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	id 🔑		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2	seat_code	utf8mb4_unicode_ci		No	None			Change Drop More
<input type="checkbox"/>	3	seat_slug	utf8mb4_unicode_ci		No	None			Change Drop More
<input type="checkbox"/>	4	status	utf8mb4_unicode_ci		No	None			Change Drop More
<input type="checkbox"/>	5	price			No	None			Change Drop More
<input type="checkbox"/>	6	bus_id 🗑️		UNSIGNED	Yes	NULL			Change Drop More
<input type="checkbox"/>	7	user_id 🗑️		UNSIGNED	Yes	NULL			Change Drop More
<input type="checkbox"/>	8	created_at			Yes	NULL			Change Drop More
<input type="checkbox"/>	9	updated_at			Yes	NULL			Change Drop More

Figure 5.4: Implantation of Available SeatsTable

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	id 🔑		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2	route_slug 🗑️	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	3	name 🗑️	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	4	desc	utf8mb4_unicode_ci		No	None			Change Drop More
<input type="checkbox"/>	5	created_at			Yes	NULL			Change Drop More
<input type="checkbox"/>	6	updated_at			Yes	NULL			Change Drop More

Figure 5.5: Implantation of RouteTable

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	id 🔑		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2	bus_slug	utf8mb4_unicode_ci		No	None			Change Drop More
<input type="checkbox"/>	3	name	utf8mb4_unicode_ci		No	None			Change Drop More
<input type="checkbox"/>	4	route_id 🗑️		UNSIGNED	Yes	NULL			Change Drop More
<input type="checkbox"/>	5	fair			No	None			Change Drop More
<input type="checkbox"/>	6	created_at			Yes	NULL			Change Drop More
<input type="checkbox"/>	7	updated_at			Yes	NULL			Change Drop More

Figure 5.6: Implantation of BusTable

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	id 🔑		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2	bus_id 🗑️		UNSIGNED	Yes	NULL			Change Drop More
<input type="checkbox"/>	3	stop_id 🗑️		UNSIGNED	Yes	NULL			Change Drop More
<input type="checkbox"/>	4	arr_time			No	None			Change Drop More
<input type="checkbox"/>	5	dep_time			No	None			Change Drop More
<input type="checkbox"/>	6	created_at			Yes	NULL			Change Drop More
<input type="checkbox"/>	7	updated_at			Yes	NULL			Change Drop More

Figure 5.7: Implantation of ScheduleTable

5.2 Implementation of Front-end Design

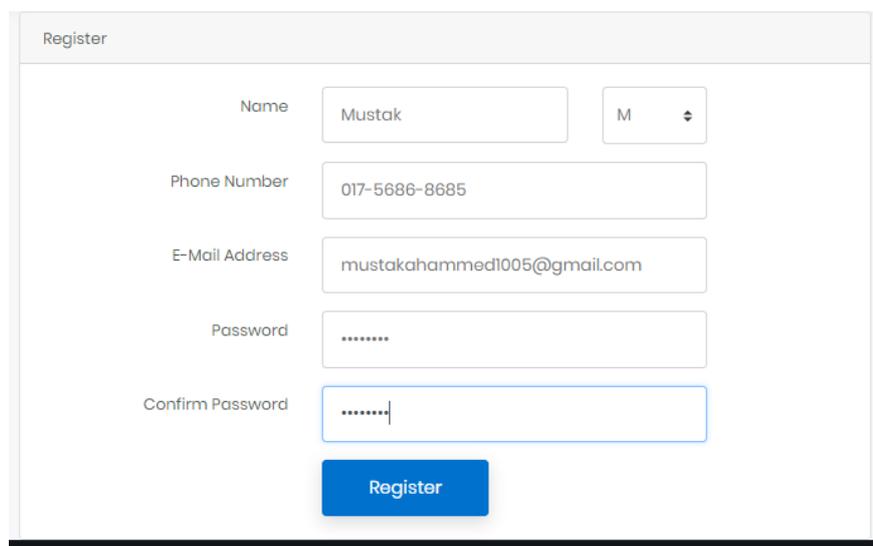
Front-end Design is very crucial for any project's success. As, our project is a web-based application, we used CSS, Bootstrap, JavaScript to design the UI or frond-end

of the application. There are different functions available in the application, so that have many pages. Those are described below.

5.2.1 User

5.2.1.1 Registration Page

Registration is required to get access and reserve seats. Registration is quite easy, just fill up the required fields. When the users click on Register button, an email with verification code will be send to the provided email address.



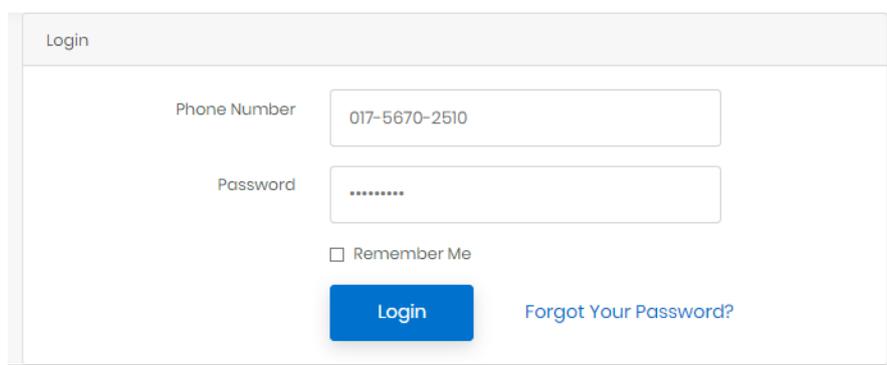
The screenshot shows a registration form titled "Register". It contains the following fields and elements:

- Name:** A text input field containing "Mustak" and a dropdown menu showing "M".
- Phone Number:** A text input field containing "017-5686-8685".
- E-Mail Address:** A text input field containing "mustakahammed1005@gmail.com".
- Password:** A text input field with masked characters ".....".
- Confirm Password:** A text input field with masked characters ".....".
- Register Button:** A blue button labeled "Register".

Figure 5.8: Required Field for Registration

5.2.1.2 Login Page

Registered email and password will be needed to login to the application and after that they can enjoy the features of the seat reservation application.



The screenshot shows a login form titled "Login". It contains the following fields and elements:

- Phone Number:** A text input field containing "017-5670-2510".
- Password:** A text input field with masked characters ".....".
- Remember Me:** A checkbox labeled "Remember Me".
- Login Button:** A blue button labeled "Login".
- Forgot Your Password?:** A blue link labeled "Forgot Your Password?".

Figure 5.9: Login Page

5.2.1.3 Dashboard Page

Dashboard page of the user panel display the recent reservation information of Bus and Car both. User can also cancel the seat or can download the invoice as pdf. When he has done, can logout from his account.

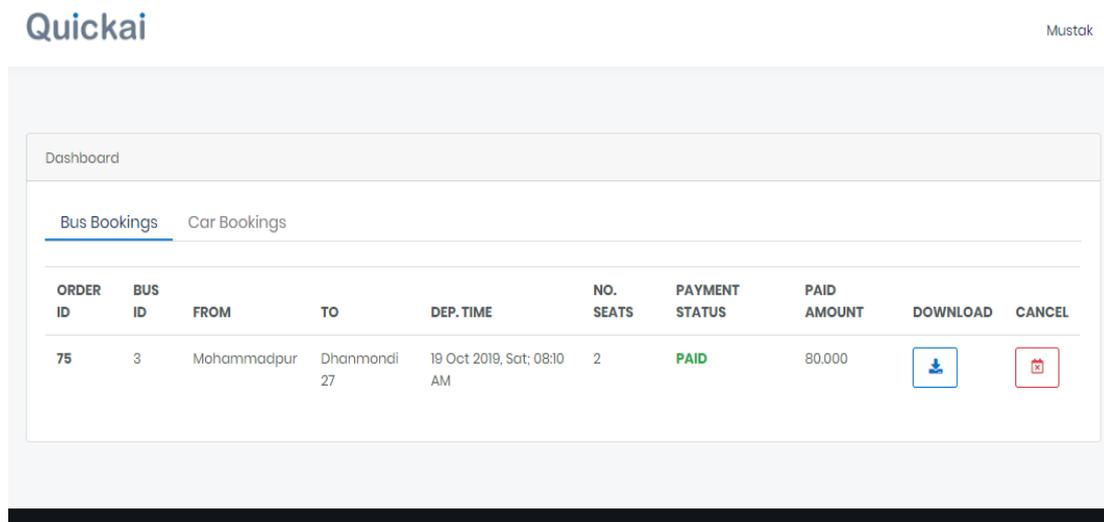


Figure 5.10: Dashboard Page

5.2.1.4 Search Seat

To reserve a seat user can search for seat entering the required field as Source and destination, date and time, seat quantity. The next page will show the available transport list with details.

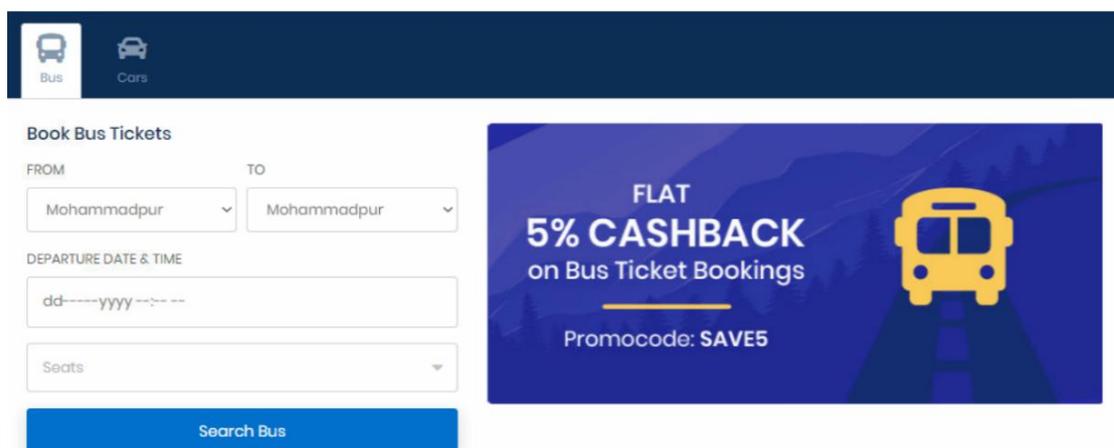


Figure 5.11: Search Seat

5.2.1.5 Search Car

There is also feature for car reservation where users can reserve to go for a travel with family and friends. They can search cars for the entering destination place with mentioning the pickup date and time.

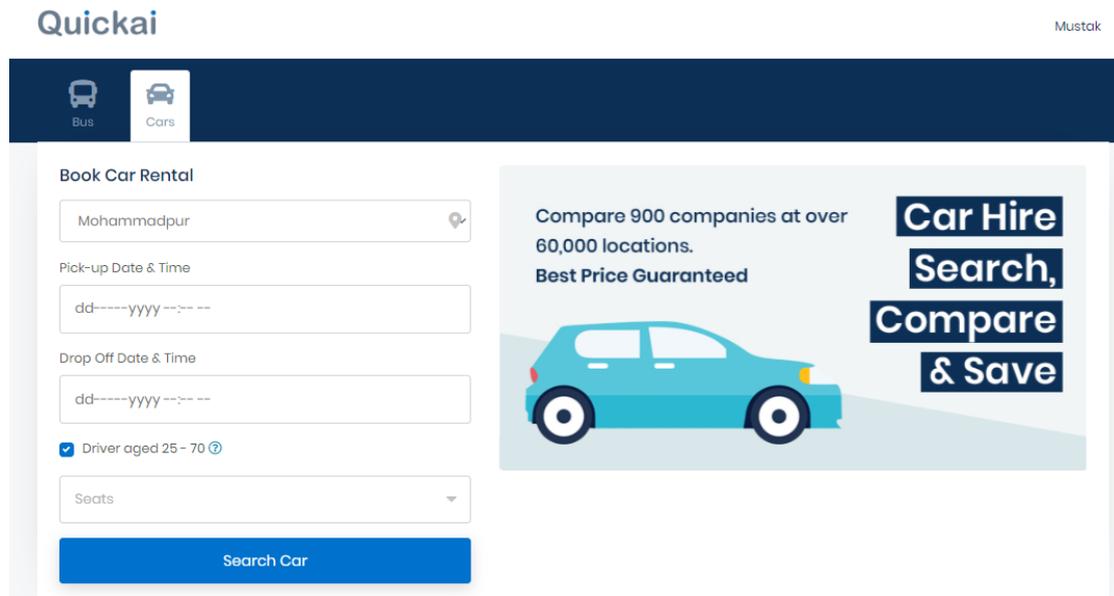


Figure 5.12: Search Car

5.2.1.6 Seat Selection

From the seat chart users can select seat from the available seats. They can also update the selection. For this purpose, they don't need to login.

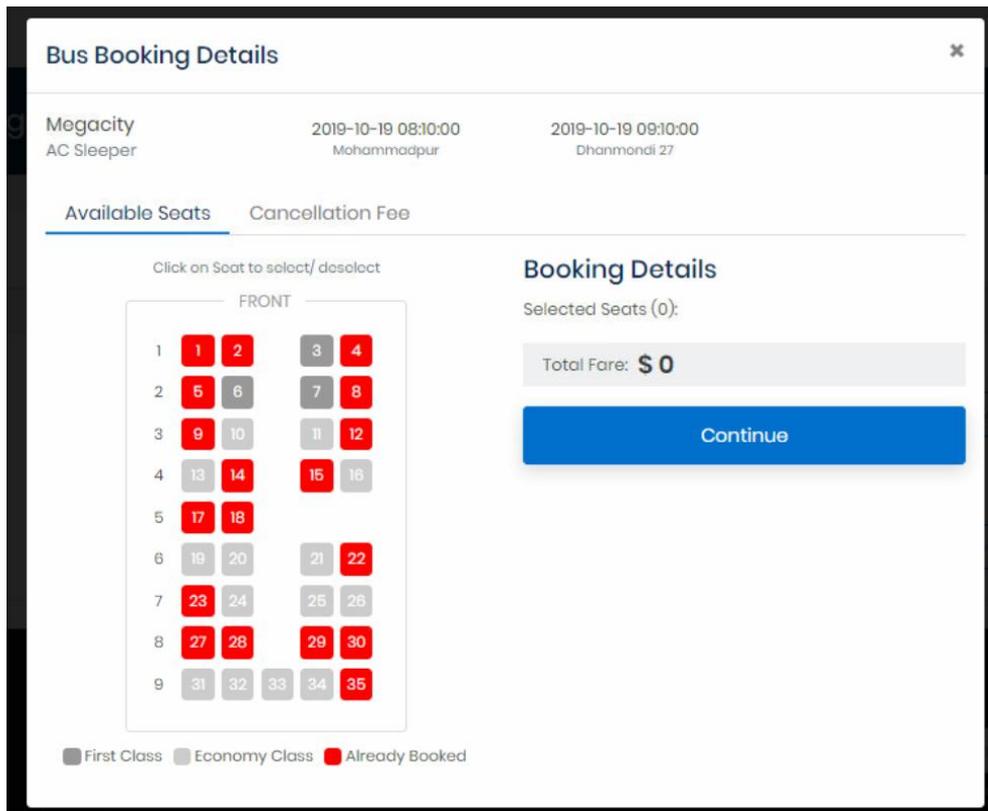


Figure 5.13: Seat Selection

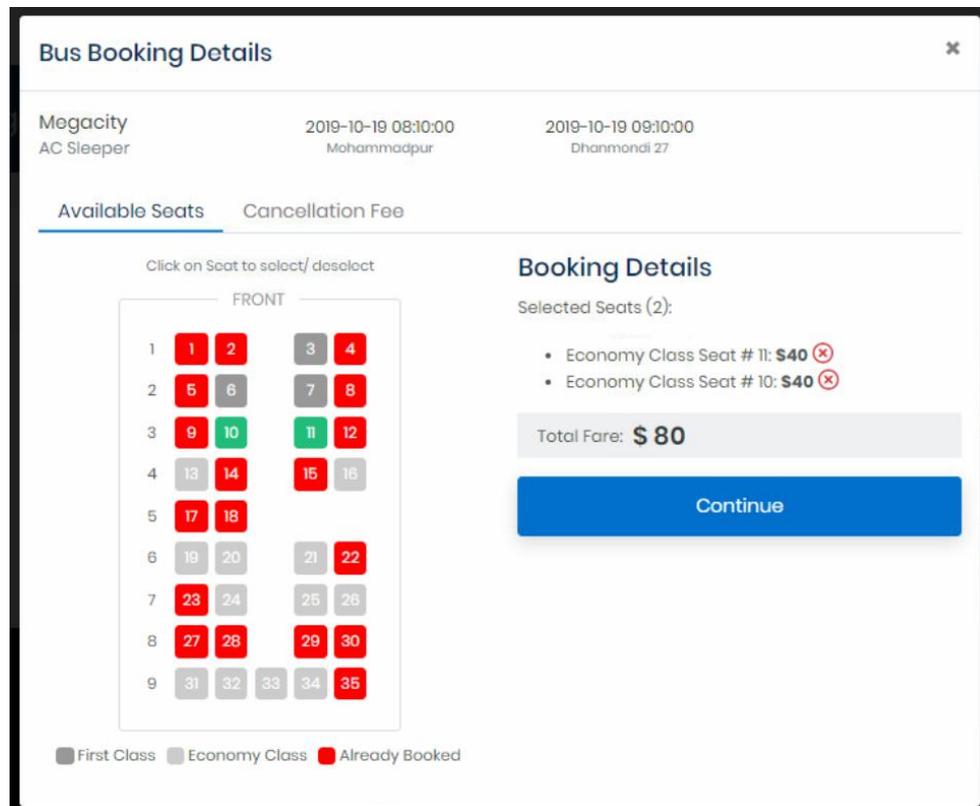


Figure 5.14: Selecting Seats

5.2.1.7 Payment

After selecting the seat have to pay total cost for tickets and for this user need to login and then can pay for it. If not registered, it will ask for registration.

Confirm Bus Details

Mohammadpur → Dhanmondi 27 19 Oct 2019, Sat Refundable

[Fare Rules](#)

Megacity AC Sleeper 08:10 AM Mohammadpur 09:00 AM Dhanmondi 27

Seat No(s): 3_4 3_5

NOTE: This is a special fare given by the Operator. Operator cancellation charges do apply.

Fare Details

Base Fare 40.00
Number of Seats 2

Total Amount 80

[Proceed To Payment](#)

Traveller Details

Contact Details

mustakahammed1006@gmail.com 017-5670-2510

Payment Home > Payment

Select a Payment Mode

Credit/Debit Cards **bKash**

Enter Card Details

Credit or debit card

Card number MM / YY CVC

Card Holder Name mustak

Save my card Details.

[Proceed to Pay 80](#)

Payable Amount

Amount 80

Total Amount 80

We value your Privacy.
We will not sell or distribute your contact information. [Read our Privacy Policy.](#)

Billing Enquiries
Do not hesitate to reach our [support team](#) if you have any queries.

Figure 5.15: PaymentPage

5.2.1.8 Invoice (Ticket Information)

After successful payment procedure, an invoice containing information of ticket or seat reservation will be generated and a confirmation message will be sent to the customers phone and they will be able to download the invoice as PDF file format.

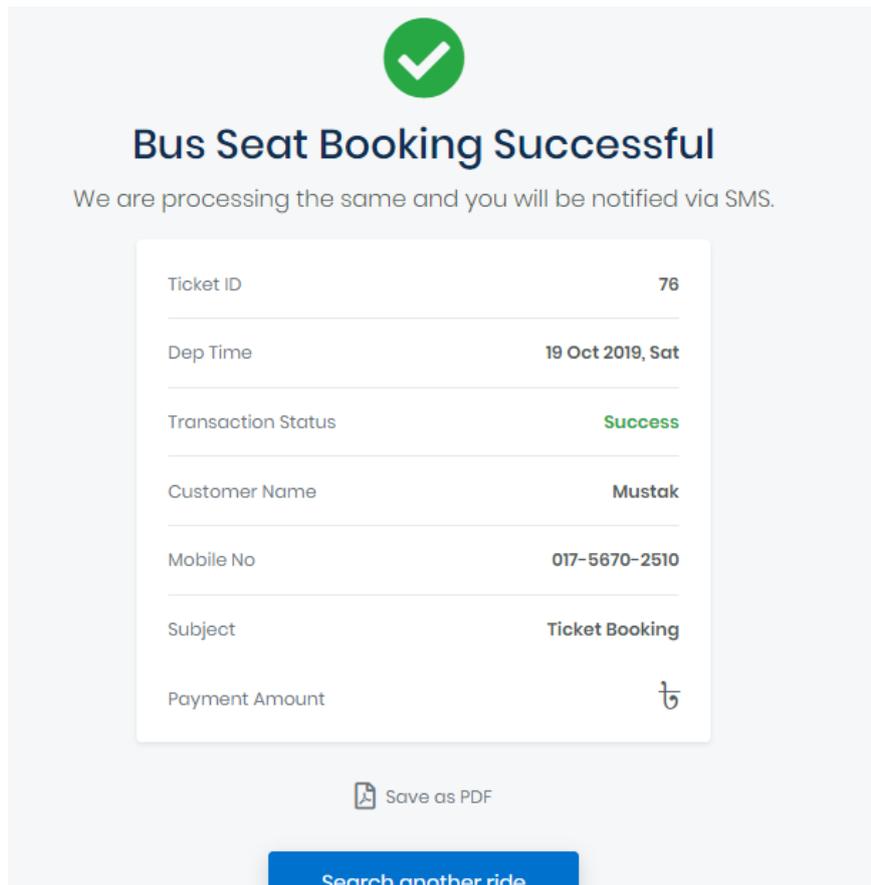


Figure 5.16: InvoicePage

5.2.2 Admin Panel

5.2.2.1 Login Page

To login the admin panel of the website, need to enter the username and password.

Login

Phone Number

Password

Remember Me

[Login](#) [Forgot Your Password?](#)

Figure 5.17: Login Page

5.2.2.3 Add Transport

Admin can add Transport, Road, Fare, Available seats from this page.

The screenshot shows a web application interface for updating a bus scheduler. The page title is 'Quickai' and the user is 'kashif'. The breadcrumb is 'Home > Scheduler'. The main heading is 'Bus || Update Scheduler'. The form is titled 'SCHEDULER' and contains the following fields:

- 'Select a BUS' dropdown menu with 'Pinik' selected.
- 'FROM' dropdown menu.
- 'ARRIVAL DATE & TIME' input field with value '22-Nov-2019 12:11 AM'.
- 'DEPARTURE DATE & TIME' input field with value '28-Nov-2019 11:11 AM'.
- 'TO' dropdown menu.
- 'ARRIVAL DATE & TIME' input field with value '29-Nov-2019 02:21 PM'.
- 'DEPARTURE DATE & TIME' input field with value '30-Nov-2019 02:22 PM'.
- 'UPDATE' button.

Figure 5.18: Add Transport Page

5.3 Implementation of Interactions

These discuss about how to interact on different pages or screens. This is very important. Interaction of the system with people is very important and we have worked on it for the better user experience and interaction.

5.4 Testing Implementation

When a system is implemented and test some specific function is called test implementation [5]. For the better performance of the application we have tested it many times from different devices and browsers because this is necessary to get correct result. We have tested mainly the following features of the web application.

1. User Registration
2. Login
3. Phone Number Verification
4. SQL injections and Queries checking whether these are working properly.
5. Reservation of Bus seat or Car.

5.5 Test Results and Reports

The following Table 5.1 showing some system test results.

Test Case ID	Date	Tester	Design	User Experience	Recommendation for others
1	10/10/19	Sakib	Great	Great	Yes
2	12/10/19	Fahim	Average	Good	Yes
3	12/10/19	Nayan	Good	Great	Yes
4	20/10/19	Imran	Great	Good	Yes

Table 5.1: System Tasting Table

CHAPTER 06

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

By the grace of Almighty, the development of the project has been completed successfully. Though are some features, we have not implemented as we will implement it in future. We are very hopeful that our project “QuickAi” Online Seat Reservation System will help people to save his valuable time, money and reduces hassle on buying bus tickets or reserve car.

Travelling through buses in city area through city transit buses is quite difficult because need to stand for buses having empty seats or not found available seats on the bus as results, standing all the way to workplace. By using our website this problem of people can be solved.

And the old manual seat reservation system also be replaced with online system that people can buy/reserve seats from at home.

6.2 Scope for Further Developments

We have developed the web application to digitalize the reservation system as it be easy, more comfortable and hassle free. So, we have tried to make it with all of the features that required in reservation system but sometimes we can't afford to make visible. We have planned about some features that bring to the application in future. So, here is a list below that we are interested to work in future development of the project.

- Implement Payment System.
- Real time bus tracking using GPS tracker device.
- Bring more features.
- Improves the User Interface.
- Bring more transport availability on the website.
- Bring online chat support.
- A mobile application as well as the website.

REFERENCES

- [1] The Total number of Internet users in Bangladesh, available at <<https://en.wikipedia.org/wiki/Internet_in_Bangladesh >>, last accessed on 10/09/19 at 04:05pm.
- [2] Definition of Business Process Model, available at <<https://en.wikipedia.org/wiki/Business_process_modeling>>, last accessed on 25/09/19 at 04:50pm.
- [3] Definition of Use Case Diagram, available at <<<https://whatis.techtarget.com/definition/use-case-diagram>>>, last accessed on 01/10/19 at 05:00pm.
- [4] 7 factors that influencing UX, available at <<<https://www.interaction-design.org/literature/article/the-7-factors-that-influence-user-experience>>>, last accessed on 07/10/19 at 12:10pm.
- [5] Definition of system testing, available at <<https://en.wikipedia.org/wiki/System_testing>>, last accessed on 13/09/19 at 12:00pm.

APPENDIX

Appendix: Project Reflection

Since, we have developed a web-based application for the bus/car reservation system, it's a long journey and result of team work. At the beginning, we think that if we were able to create a website where can people easily buy tickets or reserve car then it would be very useful for everyone. And at last the project has been completed.

We have worked hard to develop the application. Sometimes we had to learn about the project related things. Sometimes occur problems that take much time to solve it, need help of Internet, Google, YouTube. Bug problem was a very challengeable. But team work help to build the application, where if there is a problem, we have chance to discussed about how to solve it.

We should also spend much time think about the design of the website. After develop the application we have tested it in different device and by many people.

transport system

ORIGINALITY REPORT

25%	14%	1%	25%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Daffodil International University Student Paper	18%
2	dspace.daffodilvarsity.edu.bd:8080 Internet Source	2%
3	Submitted to Postgraduate Institute of Medicine Student Paper	1%
4	Submitted to University of Derby Student Paper	1%
5	Submitted to Informatics Education Limited Student Paper	1%
6	Submitted to University of Greenwich Student Paper	<1%
7	dspace.library.daffodilvarsity.edu.bd:8080 Internet Source	<1%
8	Submitted to KMD Computer Center Student Paper	<1%
9	Submitted to Gulf College Oman Student Paper	<1%

10	etd.lib.metu.edu.tr Internet Source	<1%
11	jobs-jo.blogspot.com Internet Source	<1%
12	Submitted to National College of Ireland Student Paper	<1%
13	ijarece.org Internet Source	<1%
14	Submitted to Study Group Worldwide Student Paper	<1%
15	hrdesigncast.com Internet Source	<1%
16	Rishabh Dudheria. "Assessing Vulnerability of Mobile Messaging Apps to Man-in-the-Middle (MitM) Attack", International Journal of Computer Network and Information Security, 2018 Publication	<1%
17	www.slideshare.net Internet Source	<1%
18	Submitted to University of Westminster Student Paper	<1%

Exclude quotes Off
Exclude bibliography On

Exclude matches Off