

IACSD



INSTITUTE FOR ADVANCED  
COMPUTING AND  
SOFTWARE DEVELOPMENT  
AKURDI, PUNE

**Documentation On**

**Bus Ticket Booking System**

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**Project Guide**

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## Introduction

This chapter aims to describe the project background, problem statement, objectives, scopes, project significance and expected output of the system. The system is Bus Ticket Booking System. This is the project on the online ticketing system of **modern coast bus company**, which in most cases; the company has problems with their ticketing and scheduling process. This project intends to computerize its semi computerized ticketing system to provide better customer service. Because of that, the company can provide the easier way of travelling to the customer or passenger. Electronic tickets, or e-tickets, give evidence that their holders have permission to enter a place of entertainment, use a means of transportation, or have access to some Internet services. Bus Ticket Reservation System enables the bus company's customer to buy bus ticket online-ticket is the easiest and quickest way to take bus. The online system is a new system because it's just getting roots in bus company globally . Currently, staff at the bus ticket counter is using an internal system to sell ticket at the counter. Customer is unable to buy bus ticket online at this moment and has to go to the counter to buy bus ticket. Sometimes, customer needs to queue up a long queue to buy bus ticket and ask for information. Besides that, customer also not allows buying bus ticket through telephone and Transnational's telephone line is always busy. This brings a lot of inconvenience to the customers.

Online Bus Ticket Reservation System enables the customer to buy bus ticket, make payment, cancel reservation and ask for information online easily. Furthermore, staff can sell bus ticket

using Bus Ticket Reservation System after check bus ticket availability for the customer and print the bus ticket to the customer that queue up in the counter.

## **Document Purpose**

The purpose of this document is to present a detailed description of the Bus Ticket Booking System. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system.

## **Problem Statement**

The System that is being used by the staff at the counter currently is an internal system and just used to sell the bus ticket at the counter. Customer has to go to the counter to buy bus ticket or ask for bus schedule. Furthermore, customers need to pay cash when they buy the bus ticket and sometimes needs to queue up long time to get the bus ticket. Besides that, customer also not allowed to buy bus ticket through telephone and the bus company's telephone has been always-busy line.

## **Product Scope**

In our web application/website user can view home, about us, information, search for the bus, contact admin, promotions, booking, price, login and signup page. User also can check the

routes and buses scheduled for specific date. Managers and Agent can view available buses and drivers which are not scheduled and can set the schedule for routes under their region

For the user who sign up as a member, after login, they able to view home, about us, information, can search for the bus according to boarding station and drop, contact admin, promotions of the other websites, personal bookings, price, payment, profile update and prices in detail. Only members can book ticket and reserve seat and make payment in online mode For booking, users need to select scheduled bus and seat of their choice if bus is not scheduled at their required time then users can book ticket as waiting ticket.

For users who are not a member and would like to book ticket register and become a member. It is easy to register and requirements are Full Name, Username, Address, Phone Number, Email Address, Gender, State, Date of Birth, Username, Password, Govt. Id number. Billing information is required of making payment via transfer from their account to our account and we just need the references number, name, and bank name.

## **Aim & Objective**

The main objectives of the online system include:

- To provide a web-based bus ticket buying functions. Customer can buy bus ticket through the online system and no need to queue up to buy bus ticket at the counter.
- To enable customer to check the availability of the bus ticket online. Customer can check the time departure and arrival for every Transnational's bus through the system.
- To ease the bus ticket payment by online. Customer has to pay the bus ticket by m-pesa money services
- To reduce the number of staff at the point of sale. The number of staff at the counter can be reduced after the online buying bus ticket system launch.

## **Overview Of The Current System**

Currently, Modern coast bus ticket booking system does not have a particular developed system for enhancing the online booking of bus company. This implies that there is lack of any kind of interaction between the bus company and the customers. In most of time, anyone wishing to do ticket booking has to choose from any of the following three options in order to secure a space for service:

- i. Visiting the premises of the bus company to make the necessary inquiries upon which booking is done.
- ii. Contacting the manager in the bus company through a communication channel in order to inquire about the bus company and how booking can be done.
- iii. Performing consultation from anyone who has ever produced with Modern coast bus ticket booking system or has the knowledge or any relevant information about the bus company.

## **Problem associated with the current System:**

The main challenge associated with the current system is that potential customers have travel all the way to where the Modern coast bus ticket booking system is located. As a result, there is consumption of time which would be avoided by having an automated system. Booking through a call can limit the provision of enough information which might cause inconveniences of service delivery. All these are both tedious and time consuming activities.

There is also problem of customers being unable to assess the progress of their projects not unless they directly contact the manager which in turn consumes time in both parties.

In some cases, the interested customers may not know exactly where the bus company is located, other than visiting it. This problem is clearly solved by the new system which provides all relevant information about the bus company such as its geographical location, contacts and others.

## **Benefits Of Bus Ticket Booking System:**

- The Bus Ticket Booking System is fully functional and flexible.
- It is very easy to use.
- This Bus Ticket Booking system helps in back office administration by streamlining and standardizing the procedures.
- It saves a lot of time, money and labour.
- Eco-friendly: The monitoring of the society management and the overall business becomes easy and includes the least of paper work.
- The application acts as an office that is open 24/7.
- It increases the efficiency of the management at offering quality services to the customers.
- It provides custom features development and support with the application

## **Users and Characteristics:**

### **Customer:**

- Customer can login to the System.
- Customer can register or create profile
- Update/reset password
- Search for bus
- Book his/her ticket
- Make a payment

### **Manager:**

- Log into the Manager portal
- Profile creation
- Update/reset password
- Add buses routes and halts



- Schedule the bus
- set prices and distance

#### **Owner:**

- Log into the portal
- Access All Bookings Data
- Set authorization status
- Manage bus and update details

## **REQUIREMENTS**

### **Functional Requirements:**

- This section provides requirements overview of the system
- Registration: Any user is able to register using email id and password. Before using website user must register to the booking system.
- Login: Registered users can access the website as per their roles in the system.
- Search Bus Facility: Customers can search the bus by providing boarding and dropping stations and date of journey.
- Book Ticket: Customers can select the available bus and seat number to travel and if bus is not yet scheduled then they can book advance ticket as per their time and date
- Payment Processing: Customers can make secure payment by using various options in like Debit/Credit Card, UPI, Net Banking online mode.
- Email Processing: Users should receive mail of the successful booking with their confirm ticket and instructions about travel.
- Add Bus: Managers and owners can add bus to the system
- Schedule Bus: Bus scheduling on the specific routes is the primary task of the manager. Managers are having authorities to assign buses at any time to any driver.
- Add Routes and Stations: Owners and Manager can add stations to the routes and both can Add routes to the system with real information.
- Manage and View Bookings Data: Monthly Bookings and payment Data is accessible to Owner for auditing purpose and taking decisions.
- Logout: All logged in users can logout from the system at any point of time.

### **Non-Functional Requirements :**

- Security:

o Booking System has role based authorization to access the content of the

website. Role is authenticated on successful login and accordingly screens are displayed to the user.

- o System will have secure communication between payment gateway applications (SSL) and will expire session after 15 min of inactivity

- o Data will be secured at server side only and will not store any data on client-side. User information will be protected and maintained only for internal use. Information of the users will never be displayed to anyone.
- o All servers where application is deployed are well secured with firewall protection.

- Safety:

- o System will have auto-backup scheduled monthly to protect the data from any

hacking attempts.

- o Booking system application is properly secured with all malicious attacks by proper cyber-security rules.

- Reliability:

- o System will always be in running condition and available to access 24x7

- o All servers will be operational by using failover servers and website will have lowest downtime for maintenance.

- Scalability:

- o Microservices architecture is scalable irrespective of the number of users grow

on the website. This helps in adding functionalities without disturbing other functions of the website.

- o Can use the data to scale in other aspects of the travels business and easy to change the business logic.

- Modularity:

- o Application is built using set of reusable modules by considering the future scope and complexity.

- Portability:

o Website is accessible from any place and any device. Application built using standard web technologies.

o Application can be deployed to any client-server architecture platform and other cloud platforms such as AWS, GCP, and Azure

## **Operating Environment:**

### **Server Side:**

- Processor: Intel® Xeon® processor 3500 series
- HDD: Minimum 500GB Disk Space
- RAM: Minimum 2GB
- OS: Windows 8.1, Linux 6
- Database: Oracle 11g

### **Client Side (minimum requirement):**

- Processor: Intel Dual Core
- HDD: Minimum 80GB Disk Space
- RAM: Minimum 1GB
- OS: Windows 7, Linux

## **Design and Implementation Constraints:**

The application will use Ajax, JavaScript, jQuery and css as main web technologies.

HTTP and FTP protocols are used as communication protocols. FTP is used to upload the web application in live domain and the client can access it via HTTP

protocol.

Several types of validations make this web application a secured one and SQL Injections can also be prevented.

Since Society Management system is a web-based application, internet connection must be establish

## **Specific Requirement**

### **External Interface Requirements:**

#### **User Interfaces:**

User Interfaces:

☐ All the users will see the same page when they enter in this website. This page

asks the users a username and a password.

☐ After being authenticated by correct username and password, user will be redirect to their corresponding profile where they can do various activities.

☐ The user interface will be simple and consistence, using terminology commonly

understood by intended users of the system. The system will have simple interface, consistence with standard interface, to eliminate need for user training

of infrequent users.

#### **Hardware Interfaces:**

☐ No extra hardware interfaces are needed.

☐ The system will use the standard hardware and data communication resources.

This includes, but not limited to, general network connection at the server/hosting site, network server and network management tools

## **Application Interfaces:**

OS: Windows 7, Linux

Web Browser:

The system is a web-based application; clients need a modern web browser such as

Mozilla Firefox, Internet Explorer, Opera, and Chrome. The computer must have an

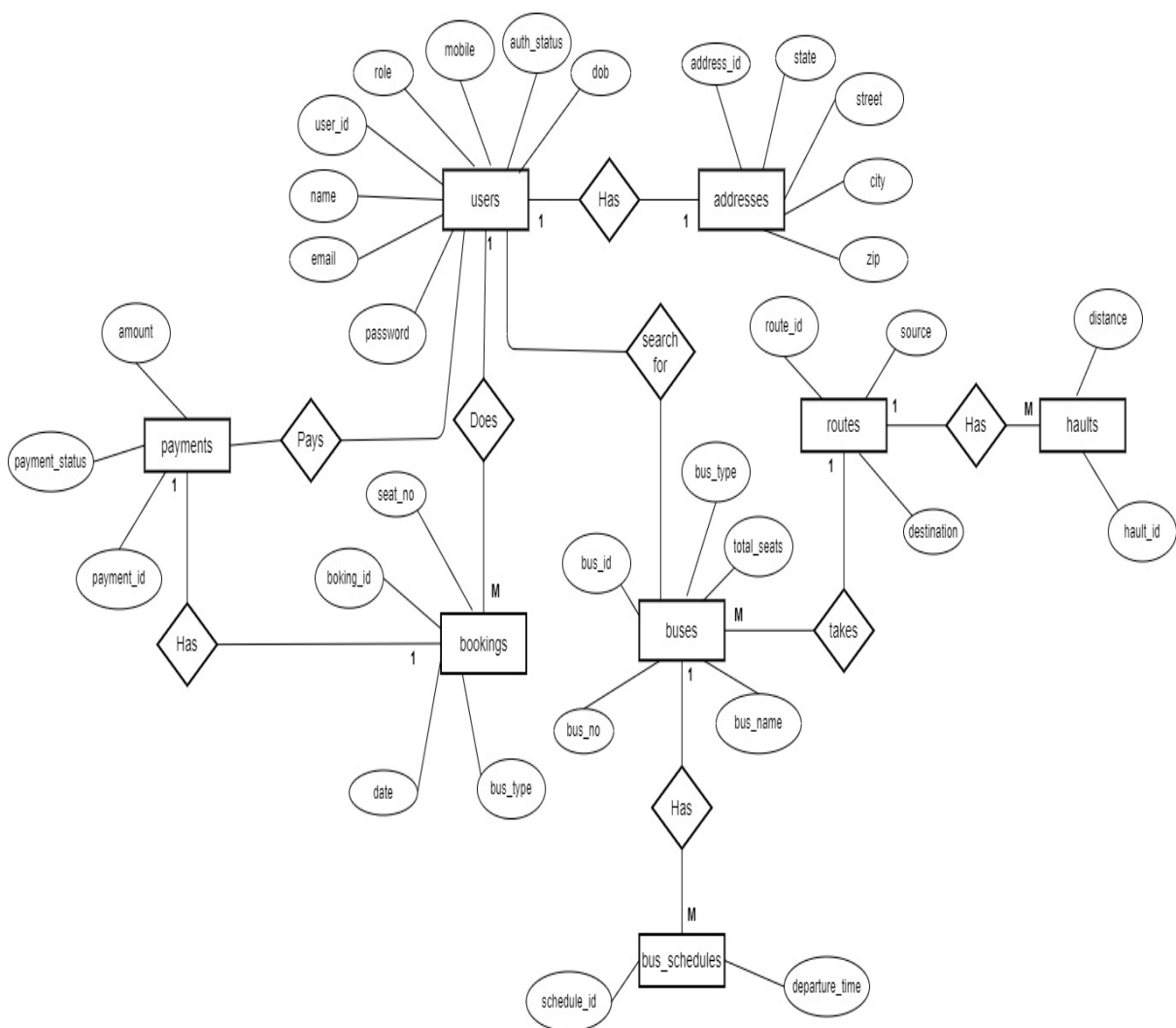
Internet connection in order to be able to access the system.

Communications Interfaces:

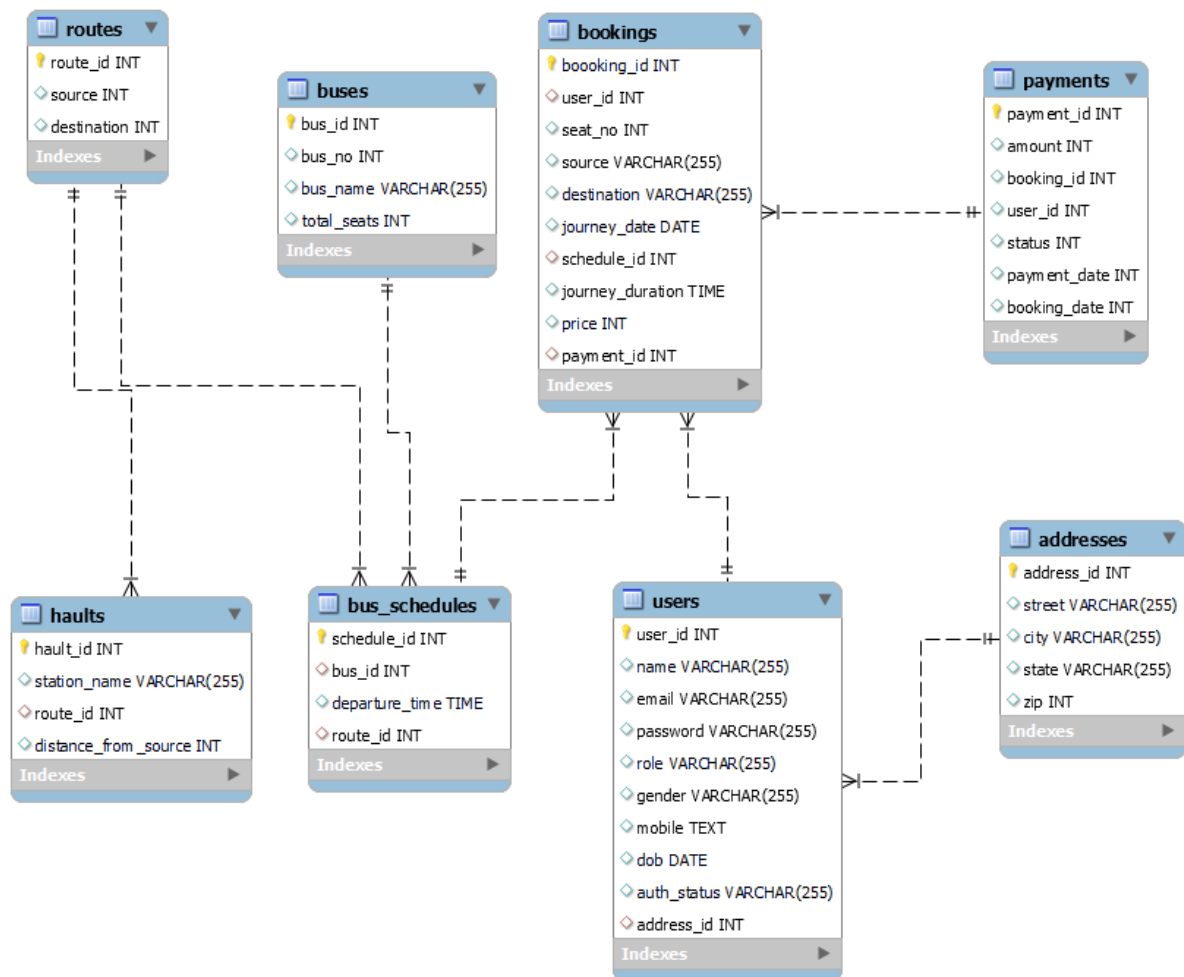
☐ This system uses communication resources which includes but not limited to, HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.

☐ This application will communicate with the database that holds all the booking information. Users can contact with server side through HTTP protocol by means of a function that is called HTTP Service. This function allows the application to use the data retrieved by server to fulfil the request fired by the user

## System Design

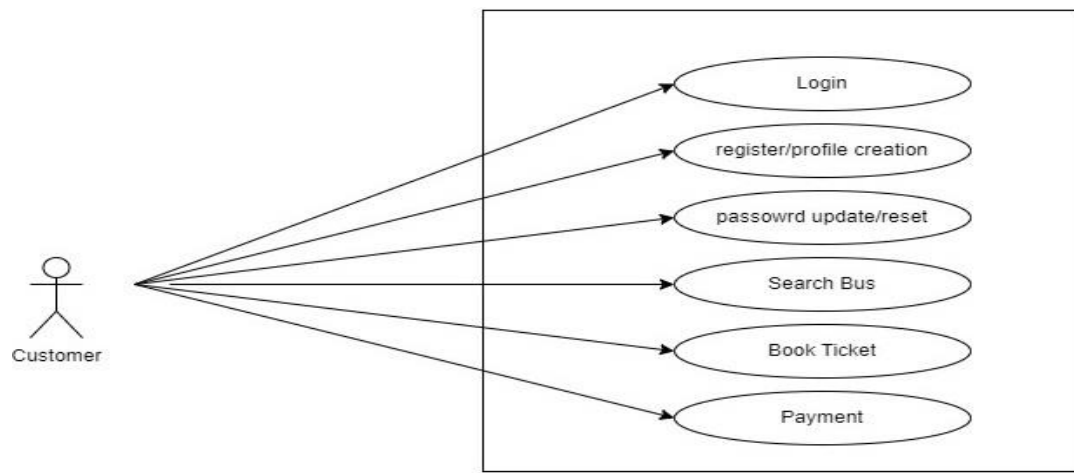


## ER Diagram

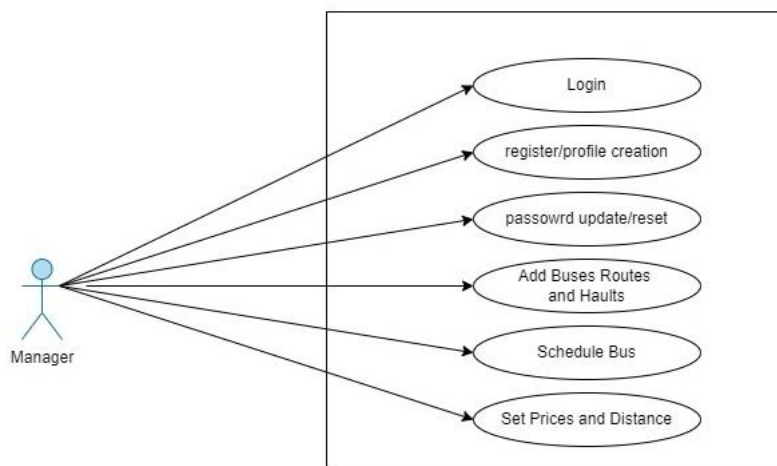


## ER System Generated Diagram

## USE CASE DIAGRMS

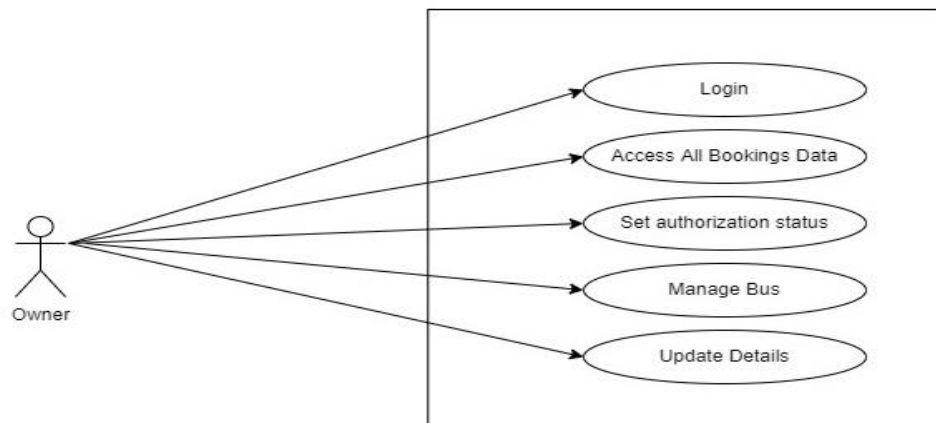


## Customer Use Case Diagrams



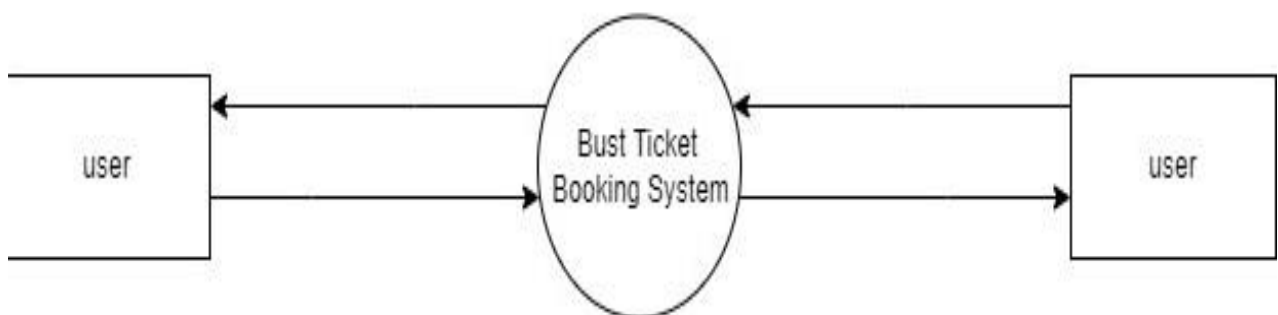


## Manager Use Case Diagram

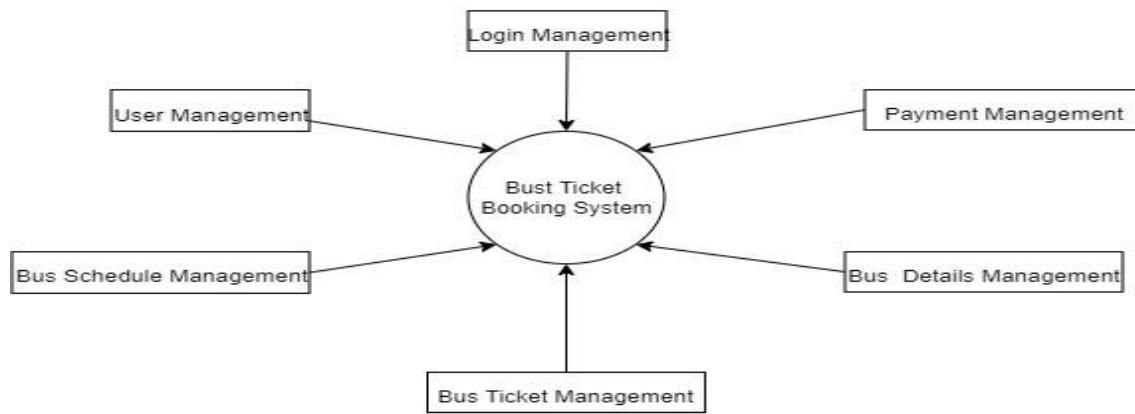


## Owner Use Case Diagram

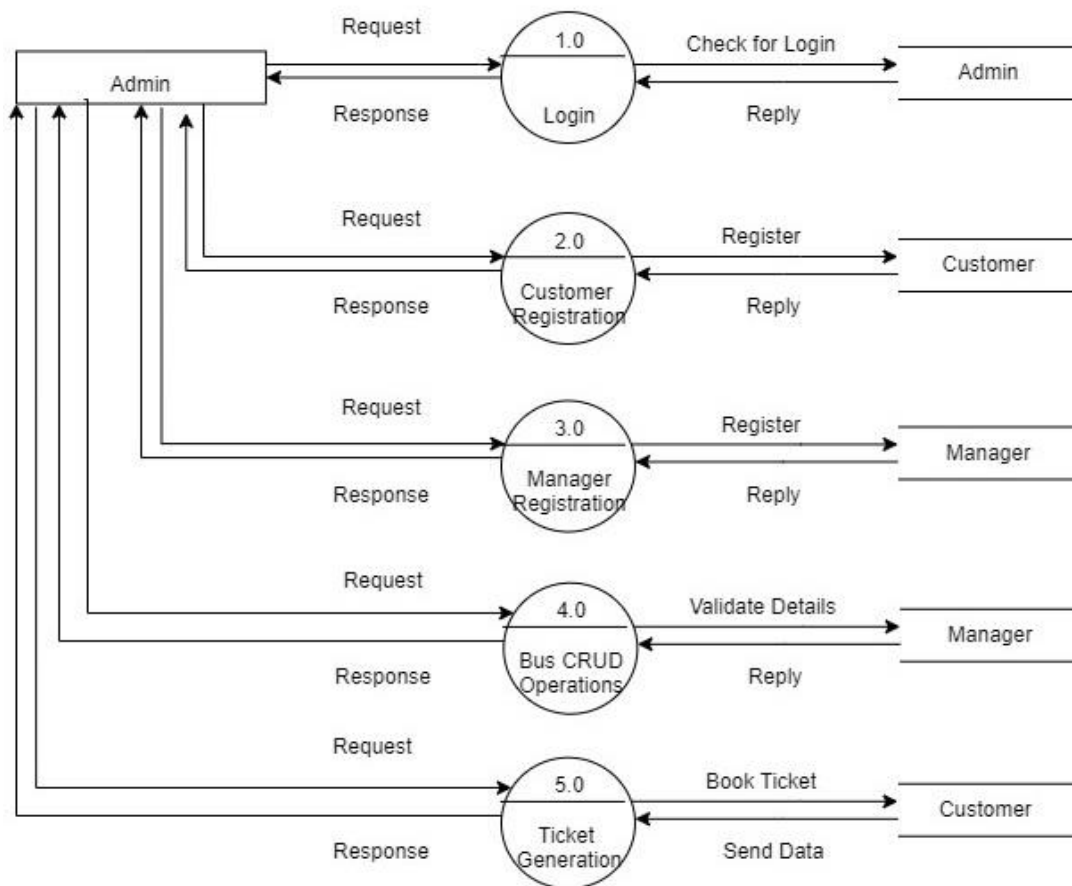
## Data Flow Diagrams



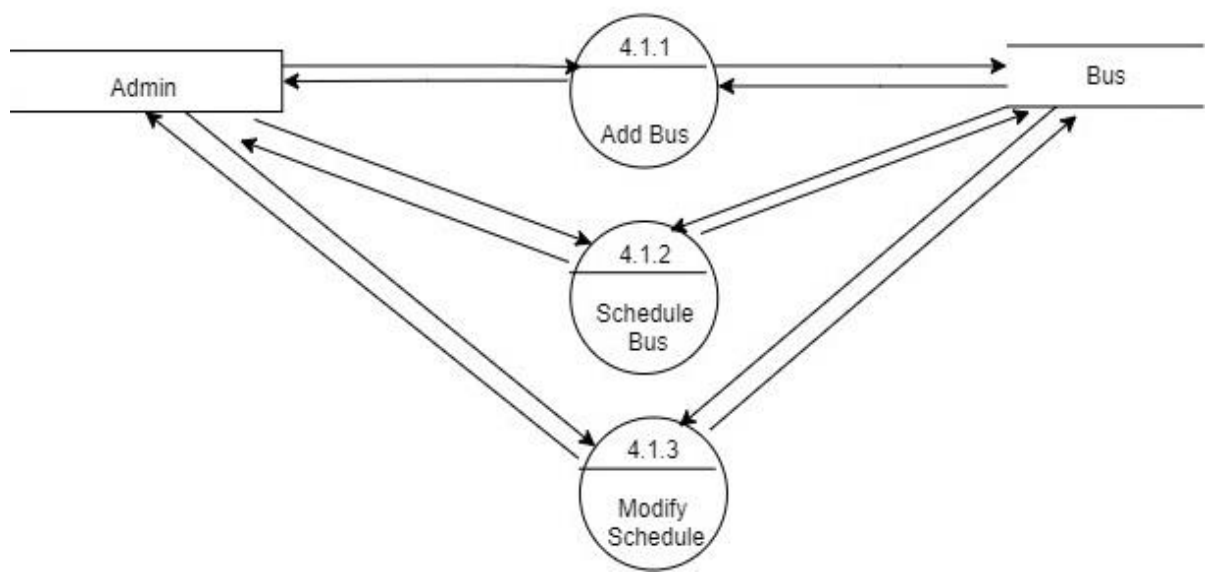
## Zero Level DFD



## First Level DFD

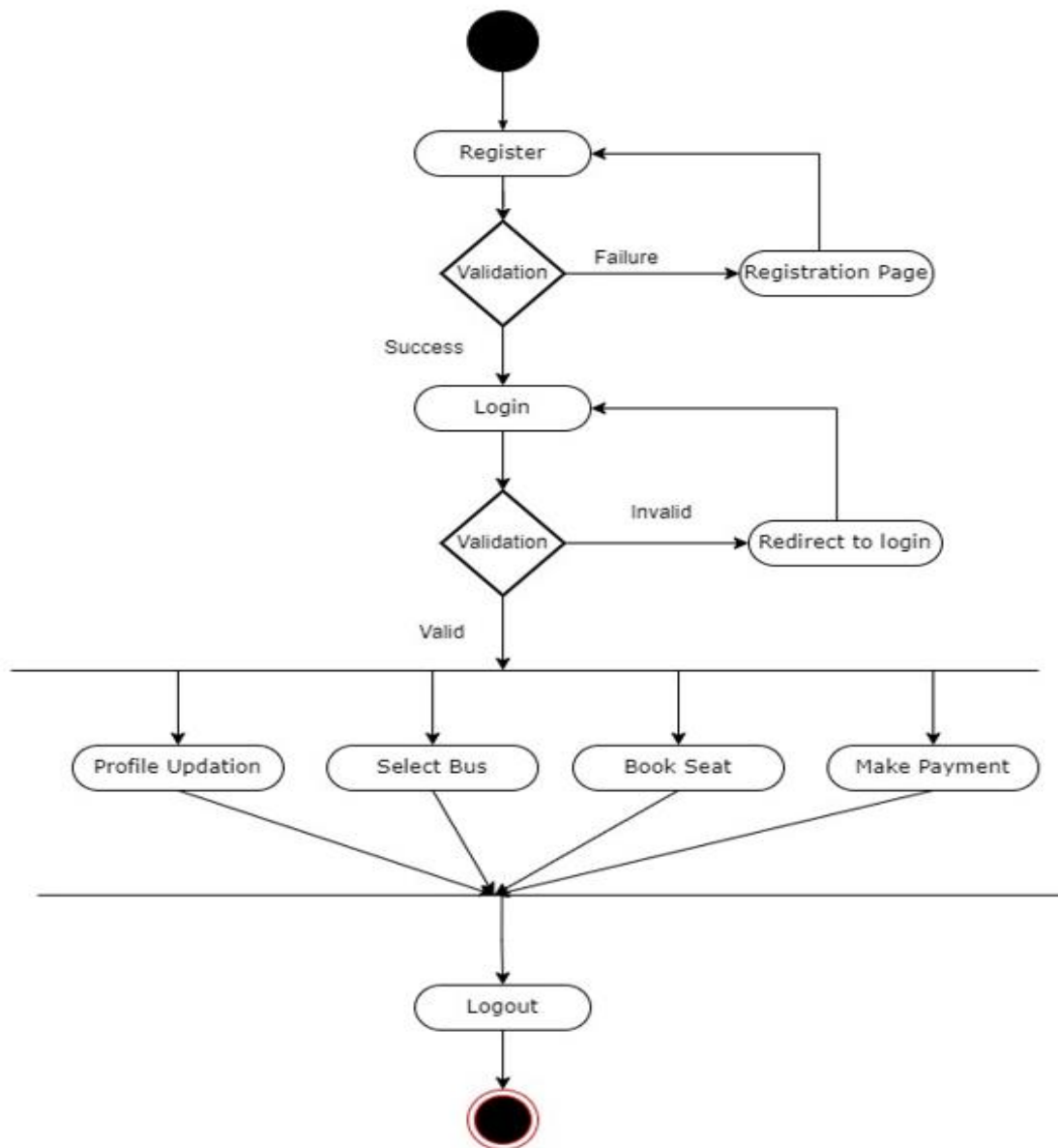


**Second Level DFD**

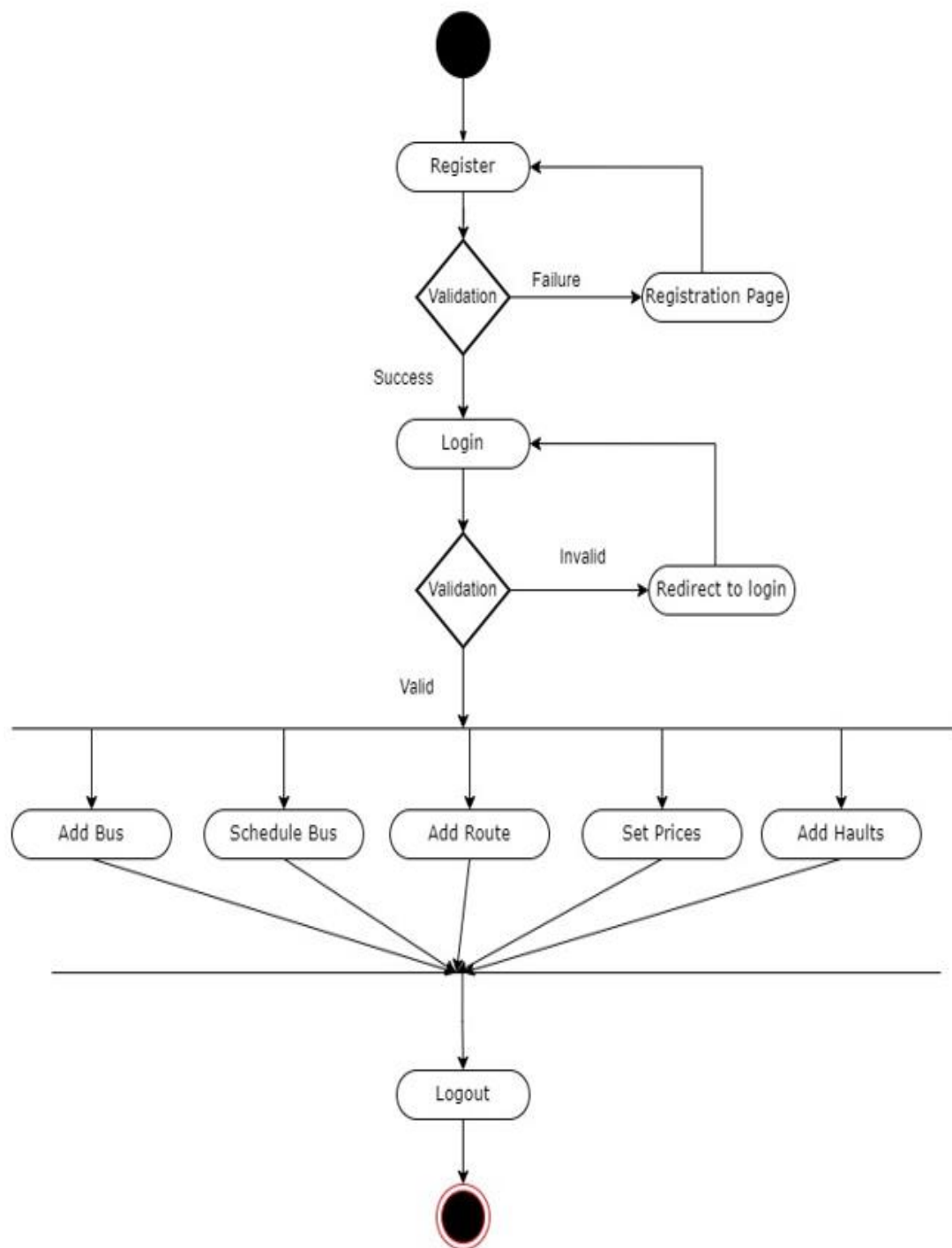


**Bus DFD**

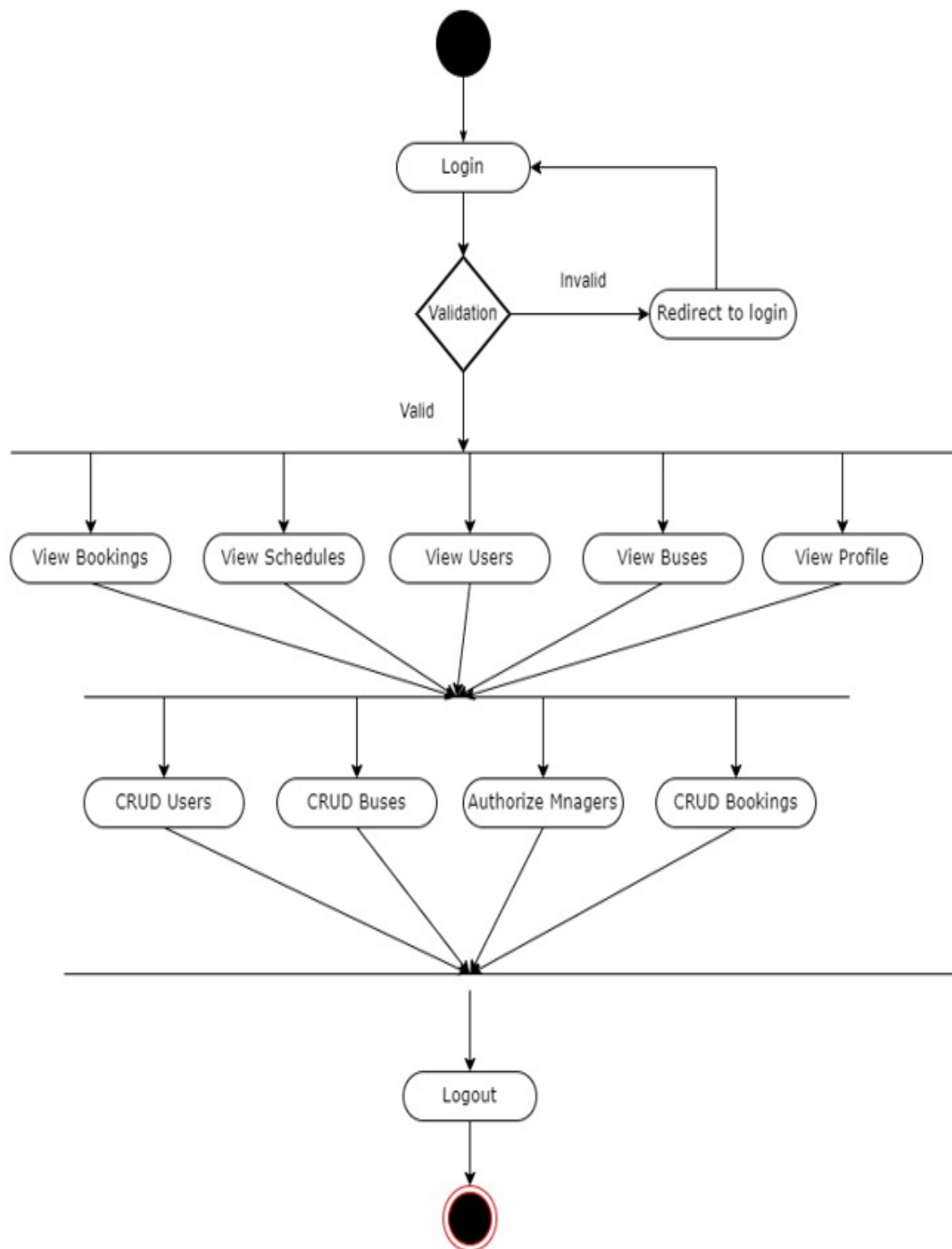
# Activity Diagram



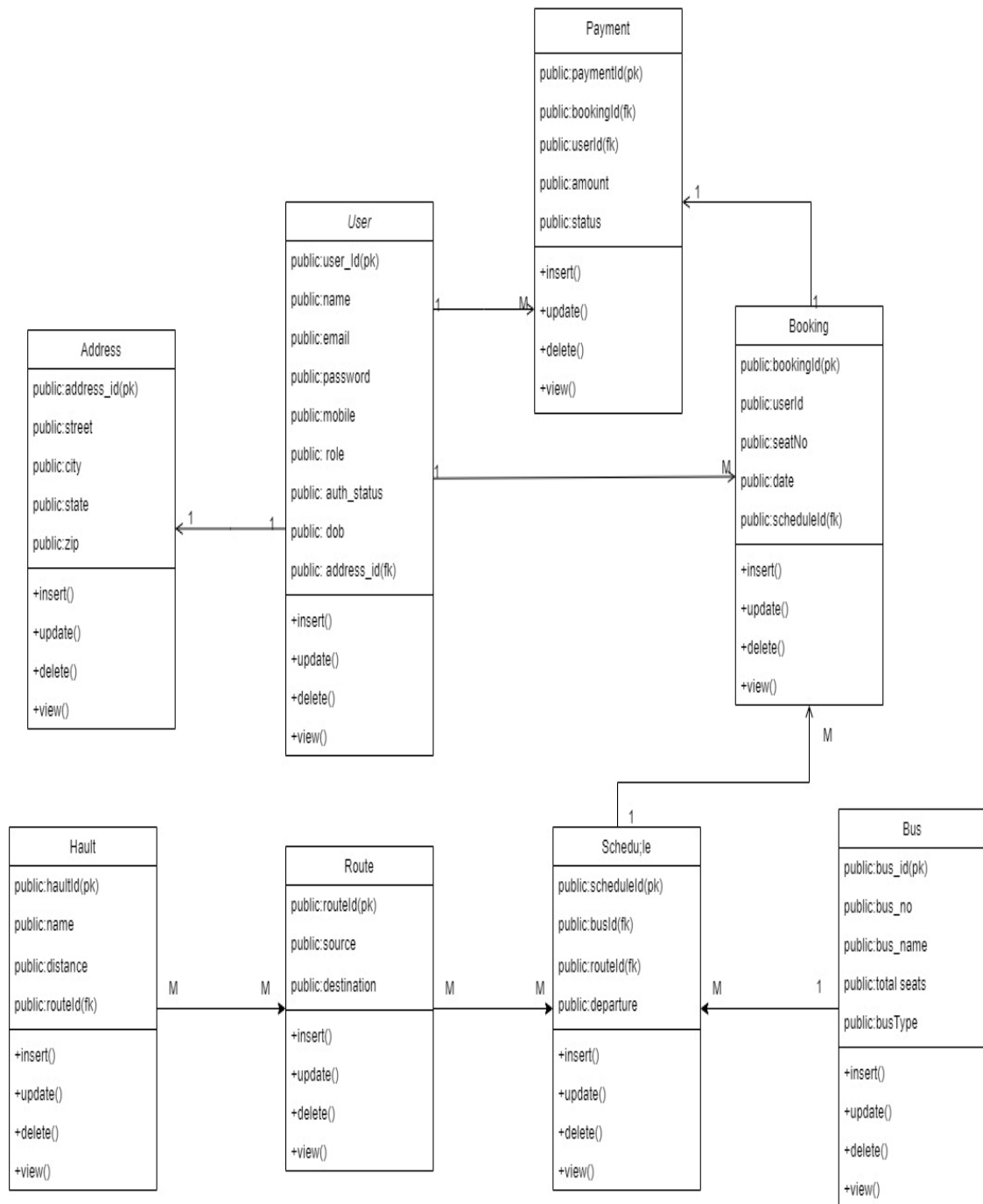
Customer Activity Diagram



**Manager Activity Diagram**



**Owner Activity Diagram**



**Class Diagram**



## Table Structure

Field	Type	Null	Key	Extra
<u>user_id</u>	int	NO	PRI	<u>auto_increment</u>
name	varchar(255)	YES		
email	varchar(255)	YES	UNI	
password	varchar(255)	YES		
role	varchar(255)	YES		
gender	varchar(255)	YES		
mobile	text	YES		
dob	date	YES		
<u>auth_status</u>	varchar(255)	YES		
<u>address_id</u>	int	YES	MUL	

### Users

Field	Type	Null	Key	Extra
<u>address_id</u>	Int	NO	PRI	<u>auto_increment</u>
street	varchar(255)	YES		
city	varchar(255)	YES		
state	varchar(255)	YES		
zip	Int	YES		

### Addresses

Field	Type	Null	Key	Extra
<u>bus_id</u>	int	NO	PRI	<u>auto increment</u>
<u>bus_no</u>	int	YES	UNI	
<u>bus_name</u>	varchar(255)	YES		
<u>total_seats</u>	int	YES		

### Buses

Field	Type	Null	Key	Extra
<u>route_id</u>	int	NO	PRI	<u>auto increment</u>
source	int	YES		
destination	int	YES		

### Routes

Field	Type	Null	Key	Extra
<u>hault_id</u>	int	NO	PRI	<u>auto increment</u>
<u>station_name</u>	varchar(255)	YES		
<u>route_id</u>	int	YES	MUL	
<u>distance_from_source</u>	int	YES		

### Haults

Field	Type	Null	Key	Extra
<u>schedule_id</u>	Int	NO	PRI	<u>auto increment</u>
<u>bus_id</u>	Int	YES	MUL	
<u>departure time</u>	time	YES		
<u>route_id</u>	Int	YES	MUL	

### Schedules

Field	Type	Null	Key	Extra
<u>boooking_id</u>	int	NO	PRI	<u>auto increment</u>
<u>user_id</u>	int	YES	MUL	
<u>seat no</u>	int	YES		
Source	varchar(255)	YES		
Destination	varchar(255)	YES		
<u>journey date</u>	date	YES		
<u>schedule_id</u>	int	YES	MUL	
<u>journey duration</u>	time	YES		
Price	int	YES		
<u>payment_id</u>	int	YES	MUL	

### Bookings

Field	Type	Null	Key	Extra
<u>payment_id</u>	int	NO	PRI	<u>auto increment</u>
Amount	int	YES		
<u>booking_id</u>	int	YES		
<u>user_id</u>	int	YES		
Status	int	YES		
<u>payment_date</u>	int	YES		
<u>booking_date</u>	int	YES		

### Payments

## Conclusion

Online Bus Ticket Booking system is successfully designed and develop to fulfill the necessary requirement The system is very much user friendly from level validation and field level validation are perform very efficiently.

Our project online bus reservation system provides an easy way for booking the bus tickets. Our project has succeeded in managing the data and providing the best service to the users.

The new computerized system was found to be much faster and relatable and user friendly than the existing system.

## Future Scope

We would like to say that my system did not capture everything that would be required and would therefore recommend for future improvements on the following:

- A feature to allow the admin message the clients within the system
- Features to enable clients give their feedback and suggestions.
- Integrating the system with M-pesa for customers to make payments using the system.

## References

Noraini (2017). SRS template File and Sample of SRS. Retrieved date, 1st April 2017 from <http://elearning.utmspace.edu.my/16172>

Devterch(2013). Plantation Management System. Retrieved date, 10th April 2016 from <http://devterch.com/products/plantation-management-system/>

Shahliza & Shahida (2016). SRS-Template-v1.1-ForSCSJ2203-SEUTM-BySS-20March2016. Retrieved date, 5th May 2016 from <http://elearning.utm.m>

- W3School.com
- BootStrap.io
- React.io

Royal Travels Home About Us Contact Us

Sign In Sign Up

Sign Up

First Name

Last Name

Date Of Birth

dd-mm-yyyy

Gender

None

Mobile

Email

chvt@gmail.com

Password

Confirm Password

Select State

Andaman and Nicobar Islands

Select City

Nicobar

Enter Postal Code (PIN)

Select Role

Passenger

Sign Up

Old User? Sign In Here

Home Add Route Add Bus Add Hault Schedule Bus View Bookings View My Profile Edit Profile Logout

## Home Screen

## WELCOME TO MANAGER PAGE

ROYAL BUSES

Info

[FAQ](#)  
[Blog](#)  
[Offers](#)  
[Privacy Policy](#)  
[Terms And Conditions](#)

Top Cities

- Hyderabad
- Pune
- Aurangabad
- Kolhapur

[Home](#)
[Add Route](#)
[Add Bus](#)
[Add Hault](#)
[Schedule Bus](#)
[View Bookings](#)
[View My Profile](#)
[Edit Profile](#)
[Logout](#)

## Add Route

Enter Source:

Enter Destination:

Enter Price Per Km :

[Add Route](#)

## Route List

Enter Station or Route Id

Route Id	Source	Destination	Price Per Km	Update Price
1	Manmad	Mumbai	10	<a href="#">Update</a>
2	Pune	Mumbai	25	<a href="#">Update</a>
3	Mumbai	Pune	20	<a href="#">Update</a>
4	Nashik	Pune	15	<a href="#">Update</a>
5	Pune	Nagpur	10	<a href="#">Update</a>

[Home](#)
[Add Route](#)
[Add Bus](#)
[Add Hault](#)
[Schedule Bus](#)
[View Bookings](#)
[View My Profile](#)
[Edit Profile](#)
[Logout](#)

Bus No :

Bus Name :

Bus Type :

Select AC/Non\_AC :

Total Seat Capacity :

[Add Bus](#)

[Search](#)

Bus No	Bus Name	Type	Ac/Non_AC	Seat Capacity
103	Shivneri	SLEEPER	AC	30

[Home](#)
[Add Route](#)
[Add Bus](#)
[Add Hault](#)
[Schedule Bus](#)
[View Bookings](#)
[View My Profile](#)
[Edit Profile](#)
[Logout](#)

Bus No :

Bus Name :

Bus Type :

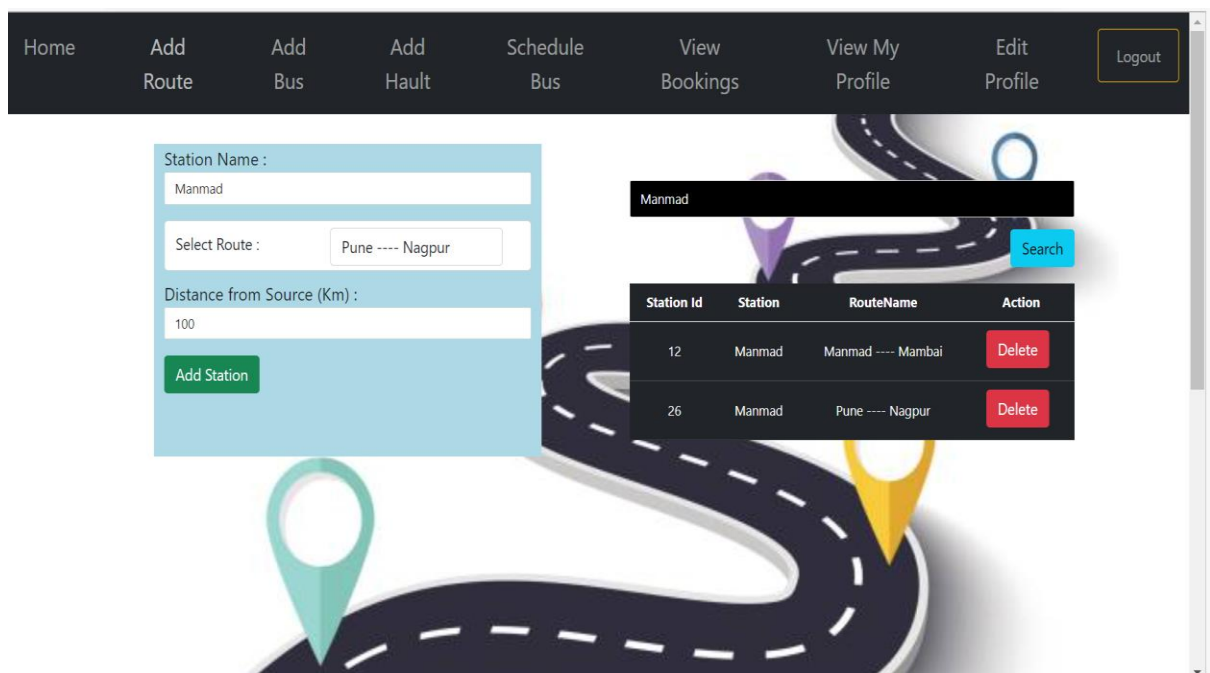
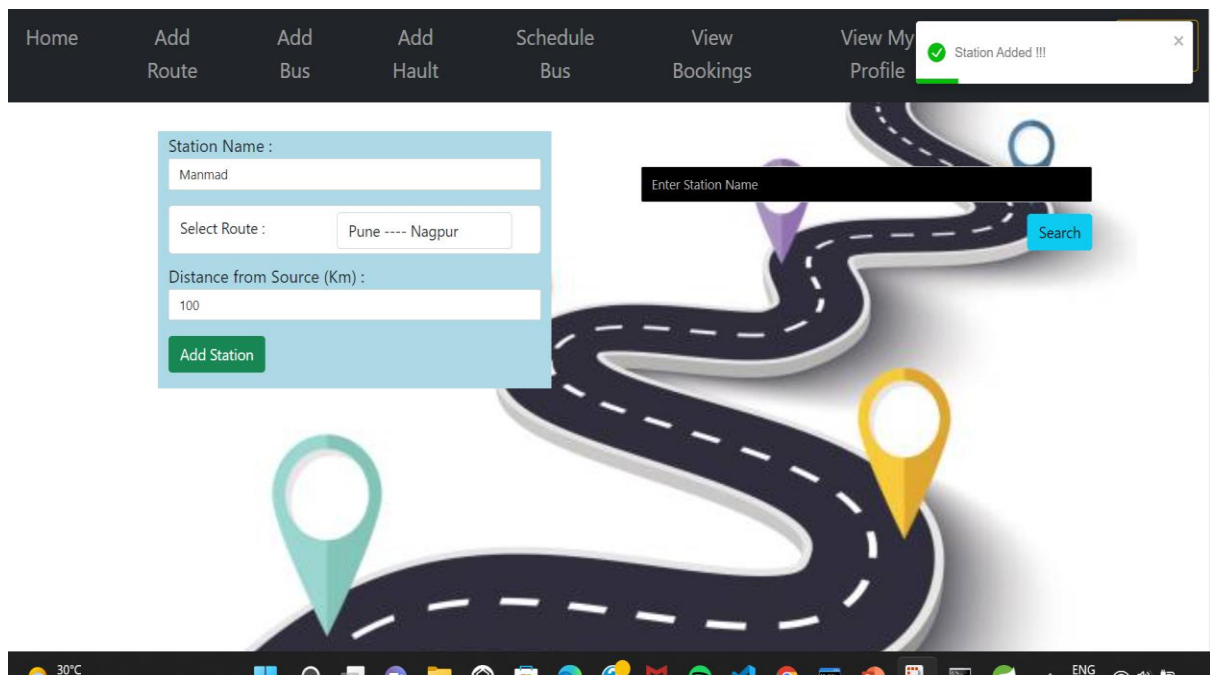
Select AC/Non\_AC :

Total Seat Capacity :

[Add Bus](#)

[Search](#)

Bus No	Bus Name	Type	Ac/Non_AC	Seat Capacity
106	Shivshahi	SEATING	NON_AC	40





Home

Add Route

Add Bus

Add Hault

Schedule Bus

View Bookings

View My Profile

Edit Profile

Logout

Bus No:

106

Route No:

Pune ---> Mumbai

Start Date :

29-09-2022

Start Time :

17:38

Schedule Bus

1

Schedule Id	Bus No	Route	Start Date	Start Time	Action
1	101	Manmad---Mambai	2022-10-02	04:00:00	Cancel
2	102	Manmad---Mambai	2022-10-02	04:00:00	Cancel
3	103	Mumbai---Pune	2022-10-03	03:00:00	Cancel
4	104	Mumbai---Pune	2022-10-03	03:00:00	Cancel
5	105	Mumbai---Pune	2022-10-03	03:00:00	Cancel
6	101	Nashik---Pune	2022-09-29	02:00:00	Cancel

Bus No:

106

Route No:

Pune ---> Mumbai

Start Date :

29-09-2022

Start Time :

17:38

Schedule Bus

105

Schedule Id	Bus No	Route	Start Date	Start Time	Action
5	105	Mumbai---Pune	2022-10-03	03:00:00	Cancel

## View All Bookings

Export To Excel

Previous

Next

dd-mm-yyyy

dd-mm-yyyy

Search

Search By Ticket Id

Search

Booking Id	Bus Name	Bus Number	Date Of Journey	On Boarding	Off Board	Seat Number	Customer	Fare	Action
5	Shivshahi	101	2022-10-02	Nashik	Niphad	8	Vaibhav Pawar	520	Cancel
4	Shivshahi	101	2022-10-02	Nashik	Niphad	2	Vaibhav Pawar	520	Cancel
3	Shivshahi	101	2022-10-02	Nashik	Mumbai	7	Sumeet Katkade	2860	Cancel
2	Shivshahi	101	2022-10-02	Nashik	Mumbai	6	Sumeet Katkade	2860	Cancel
1	Shivshahi	101	2022-10-02	Nashik	Mumbai	1	Sumeet Katkade	2860	Cancel

Fields	Details
Name:	Sumeet Katkade
Email:	sumeet@gmail.com
Mobile:	9260215998
Gender:	Male
Date of Birth:	27-04-1998
<div>Edit Profile</div>	



Choose File

No file chosen

[Home](#)[Add Route](#)[Add Bus](#)[Add Hault](#)[Schedule Bus](#)[View Bookings](#)[View My Profile](#)[Edit Profile](#)[Logout](#)

## Edit Profile

First Name:

Last Name:

Mobile

Select State

[Home](#)[New Bus Booking](#)[My Bookings](#)[View My Profile](#)[Edit Profile](#)[Contact Us](#)[Logout](#)

## Hi Vaibhav Welcome To Royal Bus Bookings

Royal Travels

[Home](#)
[New Bus Booking](#)
[My Bookings](#)
[View My Profile](#)
[Edit Profile](#)
[Contact Us](#)

Logout

Hi Vaibhav Welcome To Royal Bus Bookings

Sinner

Manchar

29-09-2022

Search

Previous

Next

Sort on Price

Bus No	Bus Name	Arrival Time	Departure Time	Type	Price	Action
101	Shivshahi	29-09 06:00	29-09 06:20	SLEEPER AC	1440	Select
102	Shivneri	29-09 06:00	29-09 06:20	SLEEPER NON_AC	1360	Select
103	Shivneri	29-09 06:00	29-09 06:20	SLEEPER AC	1440	Select

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[My Bookings](#)
[View My Profile](#)
[Edit Profile](#)
[Contact Us](#)

Logout

Bus Layout

Window Seat

Aisle Seat

Window Seat

Already Booked

Your Selected

Your Total Price is = 0

Clear Selection

Book Selected Seats

1

2

3

4

5

6

7

8

9

10

11

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