GUJARAT TECHNOLOGICAL UNIVERSITY

Darshan Institute of Engineering and Technology, Rajkot

(Affiliated with GTU)

A Mini Project Report on

"Bus Management System"

Under the subject

Summer Internship (3170001)

B. E. IV, Semester - VII

Department of Computer Engineering

Submitted By

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Academic Year

(2023-24)

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Darshan Institute of Engineering and Technology, Rajkot

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DECLARATION

We hereby declare that the Report, submitted along with the **Summer Internship (3170001)** for entitled **"Bus Management System"** submitted in partial fulfilment for the degree of **Bachelor of Engineering** in **Computer Department** to Gujarat Technological University, Ahmadabad, is a record of the work carried out by **Darshan Institute of Engineering and Technology, Rajkot** under the supervision of (**Prof. Firoz Sherasiya)** and that no part of any of report has been directly copied from any students' reports, without providing due reference.

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DEPARTMENT OF COMPUTER ENGINEERING

CERTIFICATE

This is to certify that the mini project on **Bus Management System** has been satisfactorily carried by Bhimani Maitriben Gopalbhai (**200540107083**) under my guidance in the fulfillment of the course Summer Internship (3170001) work during the academic year 2023-24.

Internal Guide
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Acknowledgement

I wish to express my sincere gratitude to my project guide Prof. **Firoz Sherasiya** and all the faculty members for helping me through my project by giving me the necessary suggestions and advices along with their valuable co-ordination in completing this work.

I also thank my parents, friends and all the members of the family for their precious support and encouragement which they had provided in completion of my work. In addition to that, I would also like to mention the college personals who gave me the permission to use and experience the valuable resources required for the project from the college premises.

Thus, in conclusion to the above said, I once again thank the faculties and members of **Darshan Institute of Engineering & Technology** for their valuable support in completion of the project.

Thank You
Bhimani Maitriben Gopalbhai

ABSTRACT

The Bus Management System offers a comprehensive digital solution for efficient transportation administration. With a focus on simplicity and functionality, administrators can seamlessly add, edit, and delete bus details and schedules through an intuitive portal. This system acts as a centralized hub, allowing transport managers to maintain real-time records of buses, routes, and timings. The interface is designed for effortless navigation, enabling administrators to manage transportation logistics with precision. Additionally, the system provides a clear display of bus routes, schedules, and occupancy, ensuring accurate information for both administrators and passengers. By integrating user-friendly features with effective route management, the Bus Management System enhances the overall transportation experience, ensuring punctuality, reliability, and improved operational efficiency for transport providers and passengers alike.

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1. Introduction

1.1 Purpose

The purpose of this project is to provide a friendly environment to maintain the details of bus and bus roots. The main purpose of this project is to maintain easy circulation system using computers and to provide different reports. This project describes the hardware and software interface requirements using ER diagrams and UML diagrams.

1.2 Document Conventions

- Context: A broad level diagram of the project showing a basic overview.
- Use Case: summarizes some of the relationships between Cases, user, and systems.
- UML: Unified Modeling Language
- LMS: Library Management System
- EMS: E-Commerce Management System

1.3 Intended Audience

The intended audiences for this document are:

- Software Project Managers
- Software Engineers
- Software Developers

1.4 Project Scope

This project is basically updating the manual bus information into an internet based application so that the users can know the details of all bus, availability of seats etc. It is a multi-user version and can take care of all the fundamental functions of a Library like bus Details.

2. Overall Description

2.1 Product Perspective

The Bus Management System is the effort to help people do their seat booking. Each people can see all bus details and their reserved seats.

2.2 Product Features

There are four different users who will be using this product:

- Administrator who will managing and maintaining the website and user account administration.
- Users who will be accessing the website.
- Individual people who use the platform to see their reserved seats.

The features that are available to the Use are:

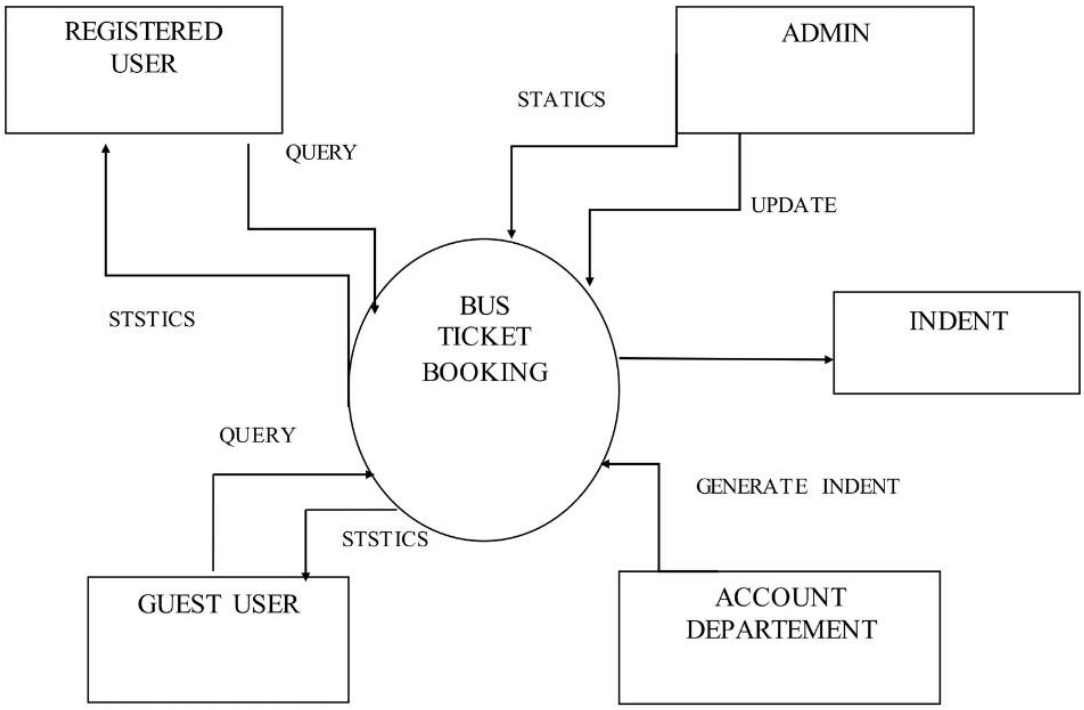
- User-friendly search bar that allows people to search their bus.
- Can view the different categories of bus.
- Can view the list of bus.
- Add new bus details and their information to the database.
- Edit the information of the existing bus.

The features that are available to the Member are:

- Can view the different categories of bus available in the websit.
- Can view the List of bus available in each category.
- Can view the bus reservation.

Cataloguing

Cataloguing for online bus booking should focus on providing a seamless and user-friendly experience, with up-to-date information and an easy booking process.



(Fig 2.2 context diagram of bus management system)

2.3 User Classes and Characteristics

There are various kinds of user visits the product for different reason.

- **Admin:** The one who manages the bus and its database and rapidly keeps on updating the bus detail or people records for reservation seats and etc.
- **DATABASE:** You can say this as an assistant manager.
- **MEMBER:** company has registered members who is authorized to changes in their website

2.4 Operating Environment

The product will be operating in windows environment for User. The application will be operating in android environment for user. The only requirement to use this product would be the internet connection.

User	Particulars	Client System	Server System
End User And Admin (Windows Application)	Operating System	Windows	Windows Server
	Processor	Dual core (Minimum)	Pentium 4.0 GHz or higher
	Hard disk	123 GB (Minimum)	1 GB
	RAM	512 MB (Minimum)	80 GB
User (Mobile App)	Operating System	Android 4.0 and Higher	
	Processor	Octa Core (Minimum)	
	Enteral Memory	512 MB (Minimum)	
	RAM	512 MB (Minimum)	

2.5 Design and Implementation Constraints

User must keep their receipt number as confidential. Only Librarian and Asst. Librarian must keep their password as confidential. More over the user must have individual ID for getting ticket information.

2.6 User Documentation

The product will include user manual. The user manual will include product overview, complete configuration of the used software, technical details, backup procedure and contact information which will include email address. There will be no online help for the product at this moment.

2.7 Assumptions and Dependencies

- Internet must be needed for communication with server.
- User must be use standalone application for manage resources.
- It is a barcode and smart card enabled system.
- Each Member must have a unique ID for accessing userresources.

3. System Feature

3.1 Function Requirement

User Registration and Login: Users should be able to create account with their personal information. Provide secure login functionality for registered users.

Bus Selection and Booking: Display a list of available buses on the selected route. Users should be able to view bus details, including bus type, amenities. Allow users to select seats and book tickets for specific buses.

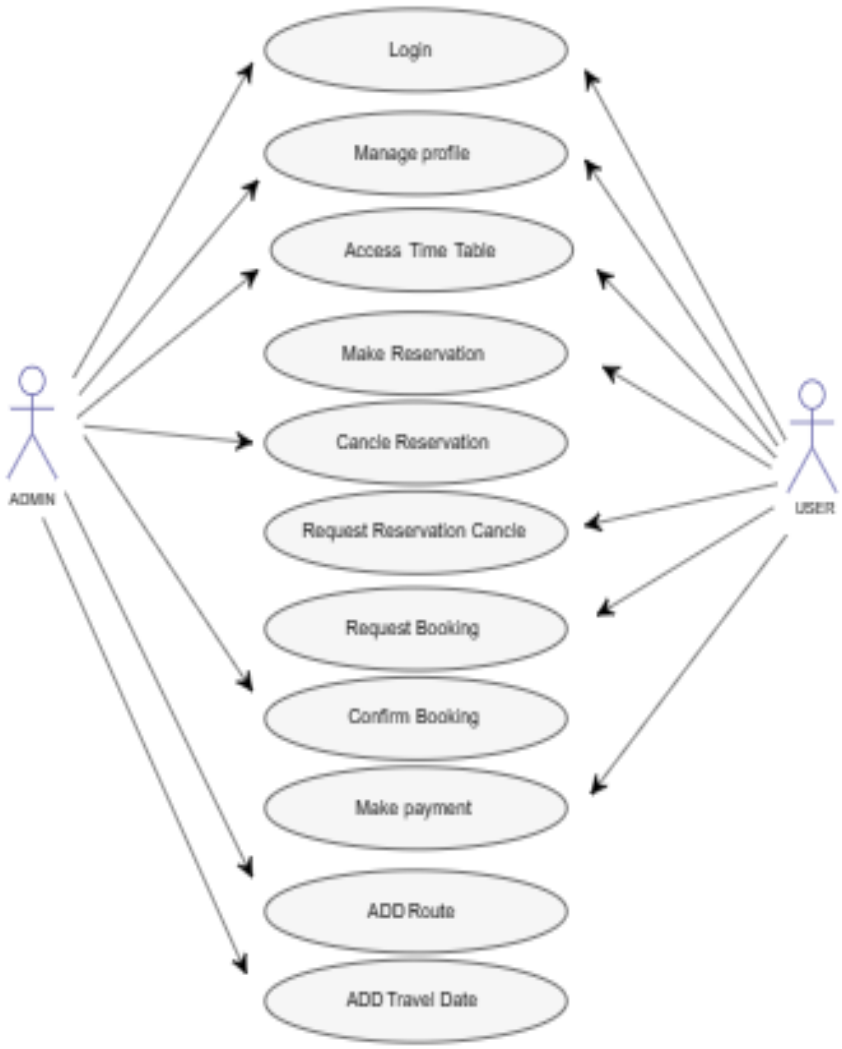
Seat Selection: Provide a graphical bus seat layout for seat selection. Highlight available and books seats. Allow users to select multiple seats if needed.

Booking Confirmation: Send booking confirmation emails or SMS to users. Generate and display booking reference numbers.

Booking History: Provide a history of past booking and the ability to view or print-e-tickets.

Security and Privacy: Implement robust security measures to protect user data and financial transactions. Comply with data protection regulations.

3.2 Usage Diagram



(fig. Use case diagram of bus management)

4. External Interface Requirements

4.1 User Interface

- Login Screen
  - UserName
  - Password

- Add New Bus
  - BusNumber
  - RTONumber
  - Average

- Ticket Booking
  - Bus
  - Date
  - Time

- Add Bus Details
  - Bus Route
  - DriverName
  - RTONumber
  - Avrage
  - KM
  - Departure Time

4.2 Hardware Interface

- Barcode and smart card enabled system and hence the issue and return of material is handled uniformly.

4.3 Software Interface

Server

- Operating System: Windows
- Processor: Pentium 4.0 GHz or higher
- RAM: 1GB Mb or more
- Hard Drive: 80 GB or more

Client

- Operating System: Windows and Android
- Processor: Pentium III or 2.0 GHz or higher or Octa.
- RAM: 512 Mb or more

Database: My SQL Server

Development Tools: Codesandbox, Visual Studio

4.4 Communication Interface

Communication between server and application system need the internet connection into system. Because all the data will be available in server database. Using the web services fetch the data from the server.

5. Non Functional Requirement

Safety requirements

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup

Security requirements

A bus management system typically involves the use of technology and data to optimize and streamline the operations of a bus transportation service. Security is a critical aspect of such systems to protect sensitive data, ensure passenger safety, and prevent unauthorizes access or misuse.

Software quality attributes

The quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database

Hardware constraints

The system requires a database in order to store persistent data. The database should have backup capabilities.

Software constraints

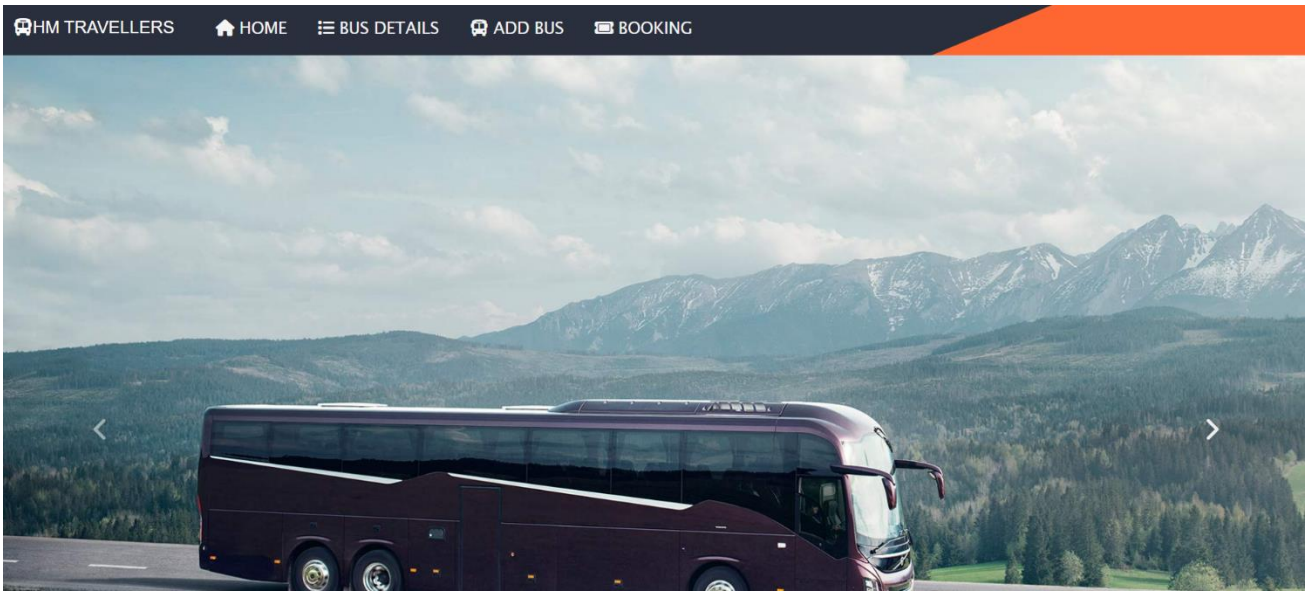
The development of the system will be constrained by the availability of required software such as database and development tools. The availability of these tools will be governed by

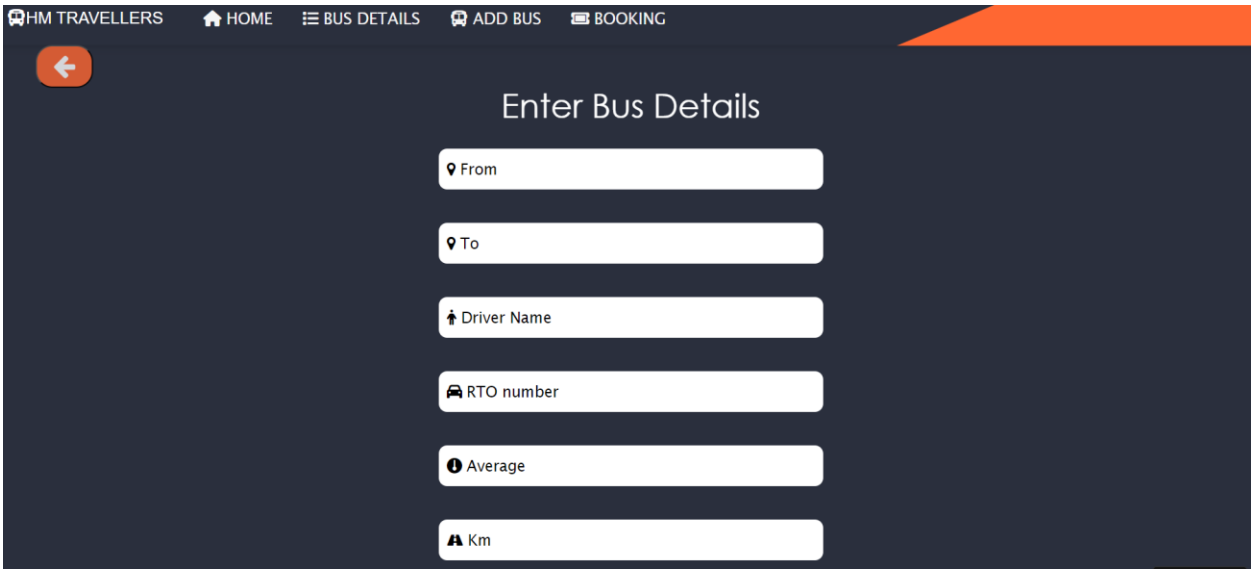
Alert constraints

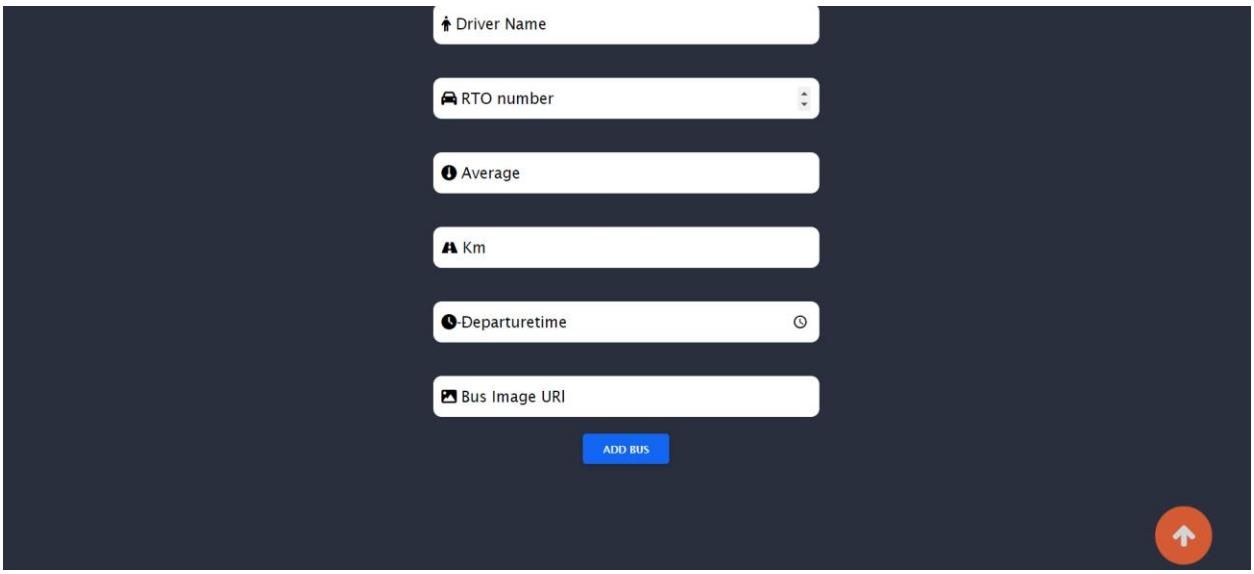
Sometime user miss the submit book and article on return data, so system will be give the return book alert message on member mobile before one day of return date. And also provide alert for upcoming new books and article.

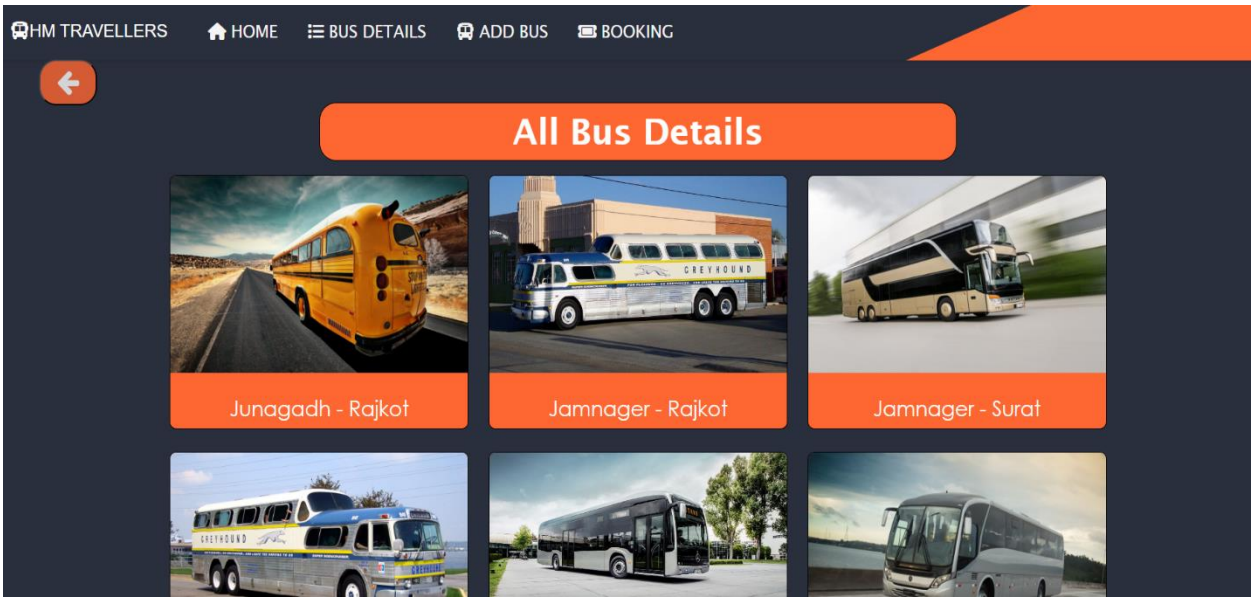
5. Implementation

Screenshots of Project

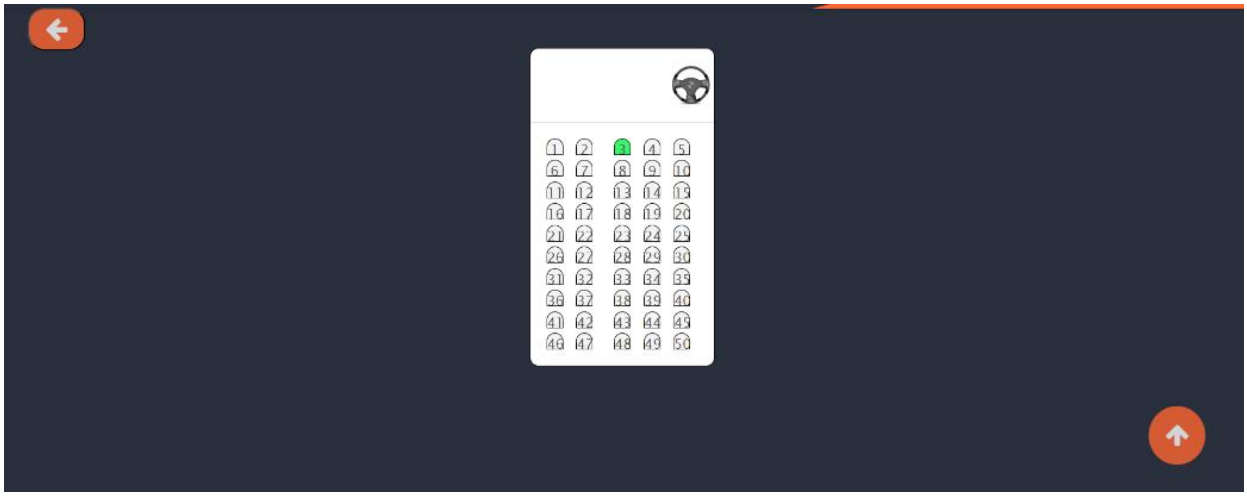



HM TRAVELLERS
HOME
BUS DETAILS
ADD BUS
BOOKING
Enter Bus Details
From
To
Driver Name
RTO number
Average
Km


Driver Name
RTO number
Average
Km
Departuretime
Bus Image URI
ADD BUS

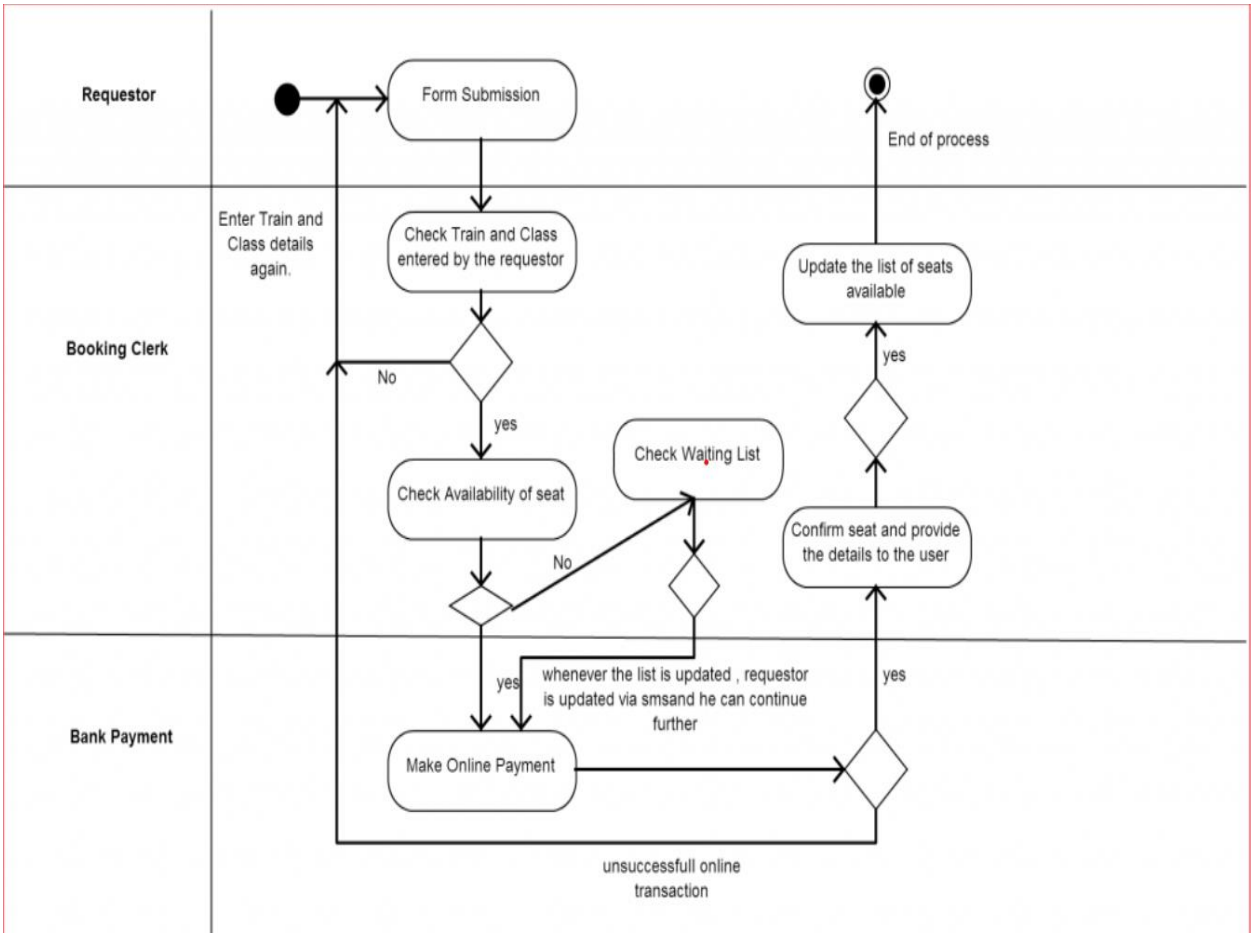

HM TRAVELLERS
HOME
BUS DETAILS
ADD BUS
BOOKING
All Bus Details
Junagadh - Rajkot
Jamnager - Rajkot
Jamnager - Surat


Bus : Jamnager - Surat
Bus : Jamnager - Surat
Driver Name : Aminbhai
RTO number : 24888
Average : 56269
KM : 44734 Km
Departuretime : 05:00

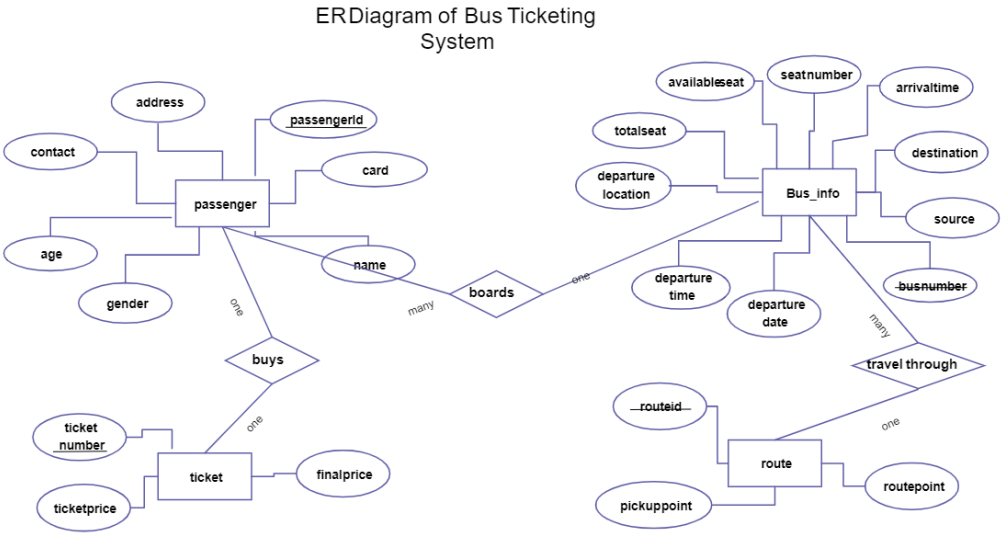


Appendices

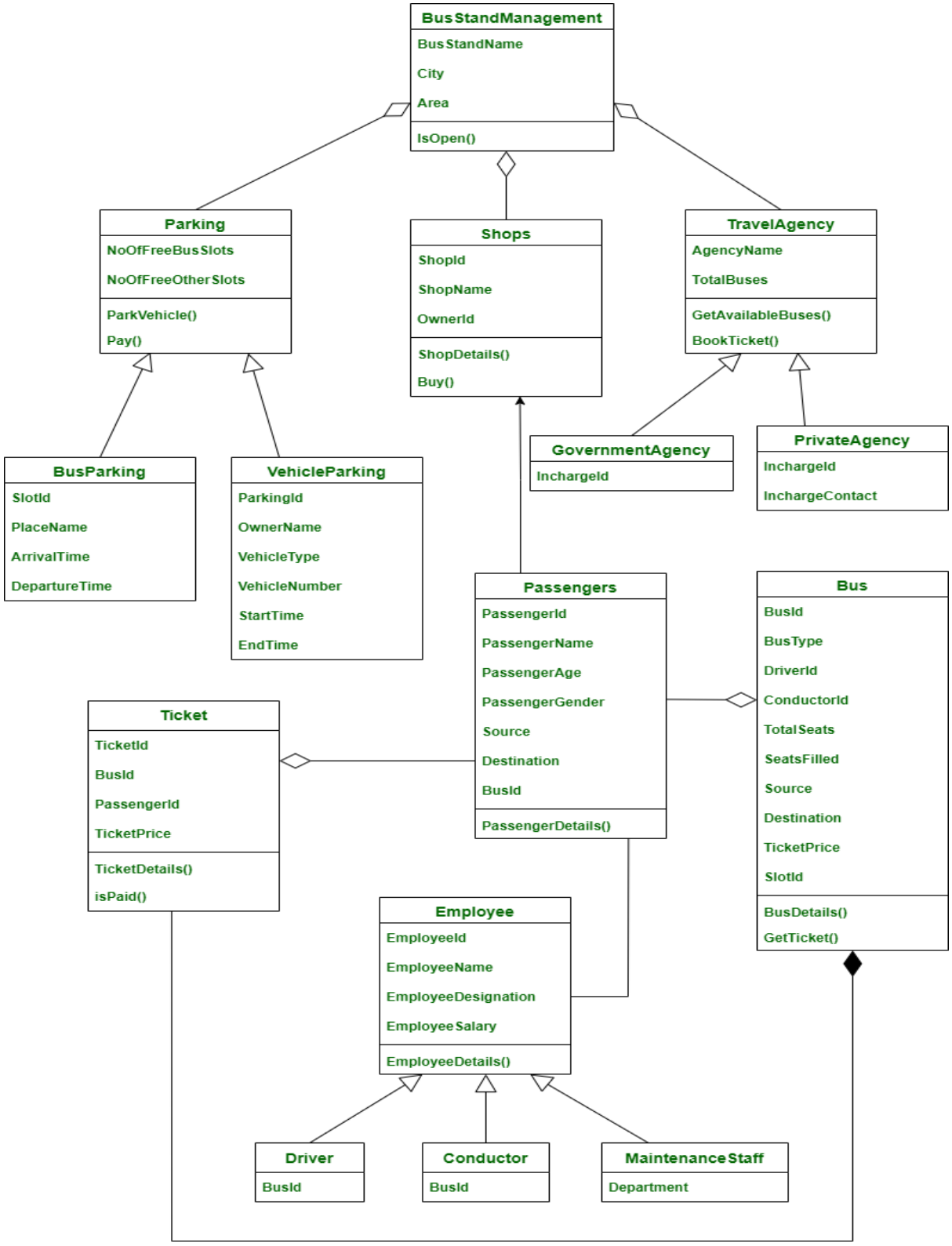
A) Activity Diagram



B) E-R Diagram

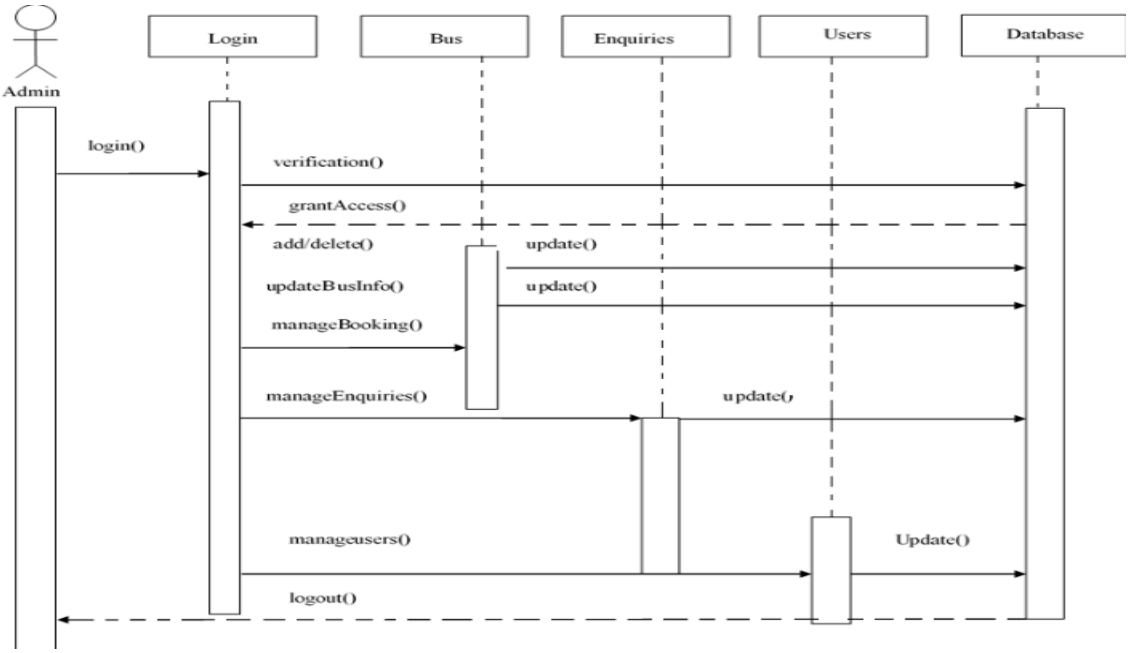

ERDiagram of Bus Ticketing System
address
passengerId
contact
card
passenger
age
name
gender
boards
buys
ticket number
ticket
finalprice
ticketprice
availableseat
seatnumber
arrivaltime
totalseat
destination
departure location
Bus_info
source
departure time
departure date
busnumber
travel through
routeid
route
routepoint
pickuppoint
one
many

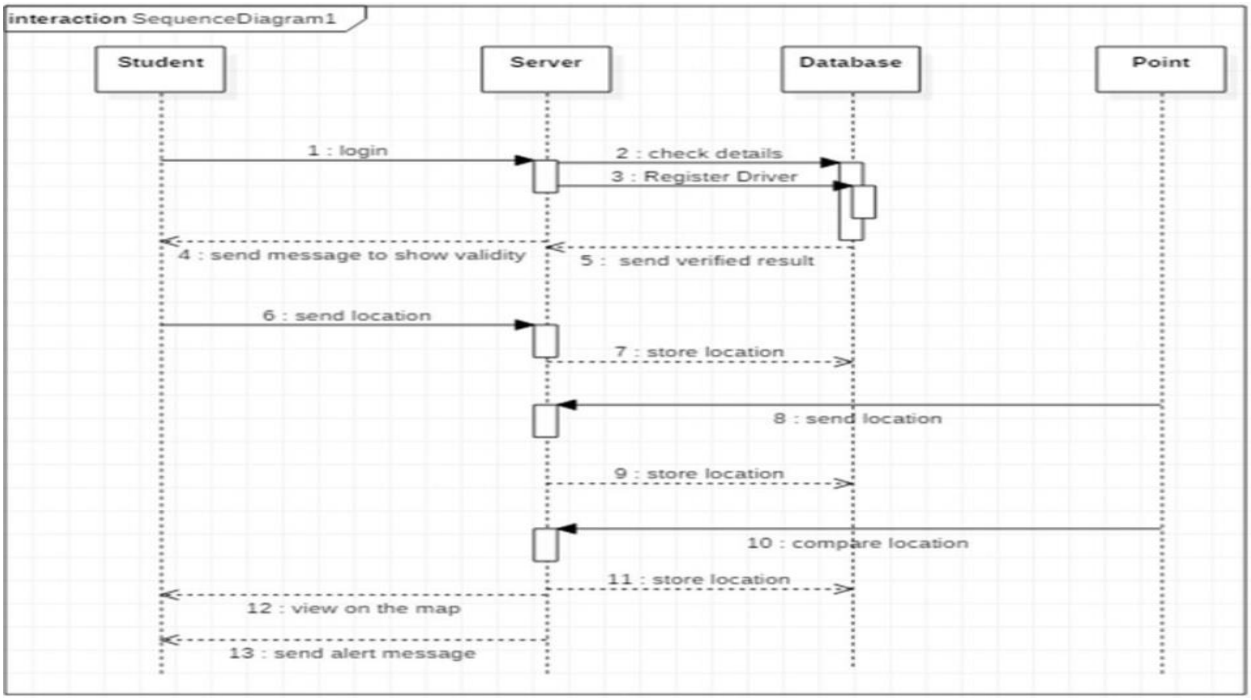
C) Class Diagram



D) Sequence Diagram

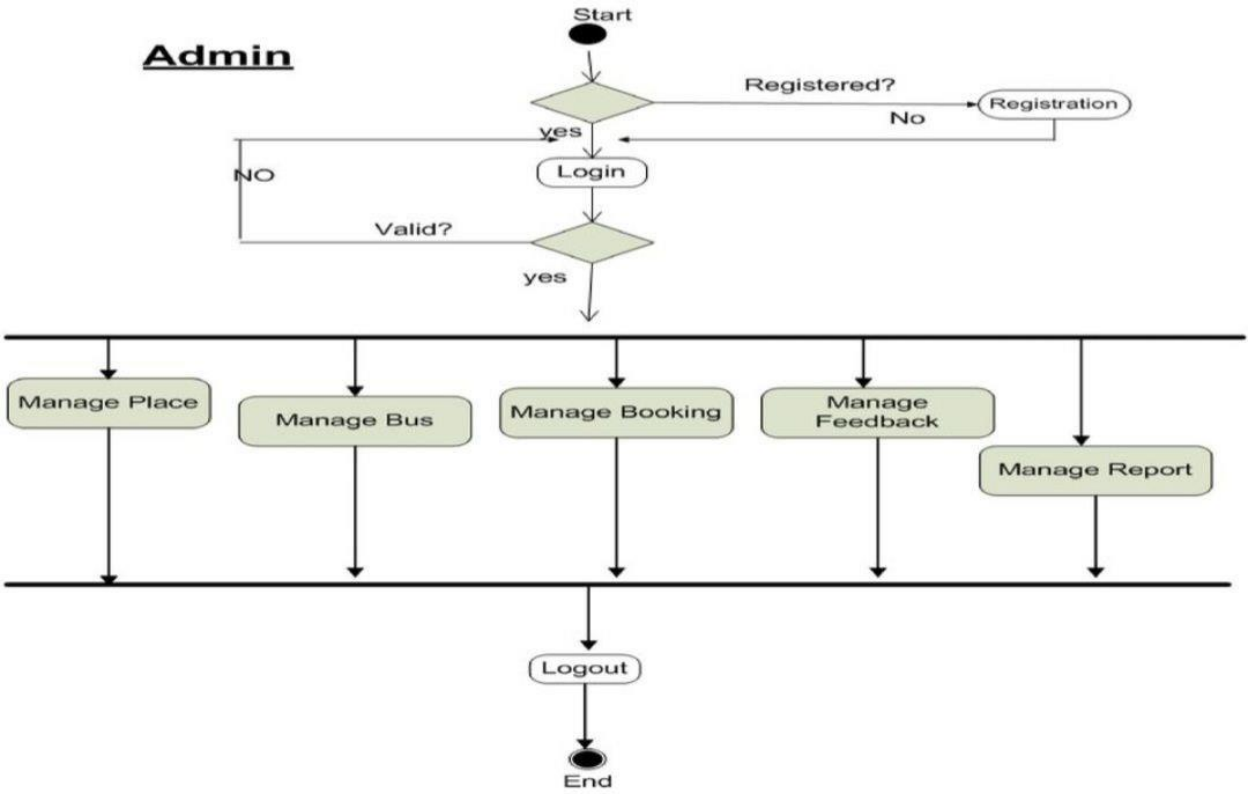
- Sequence diagram



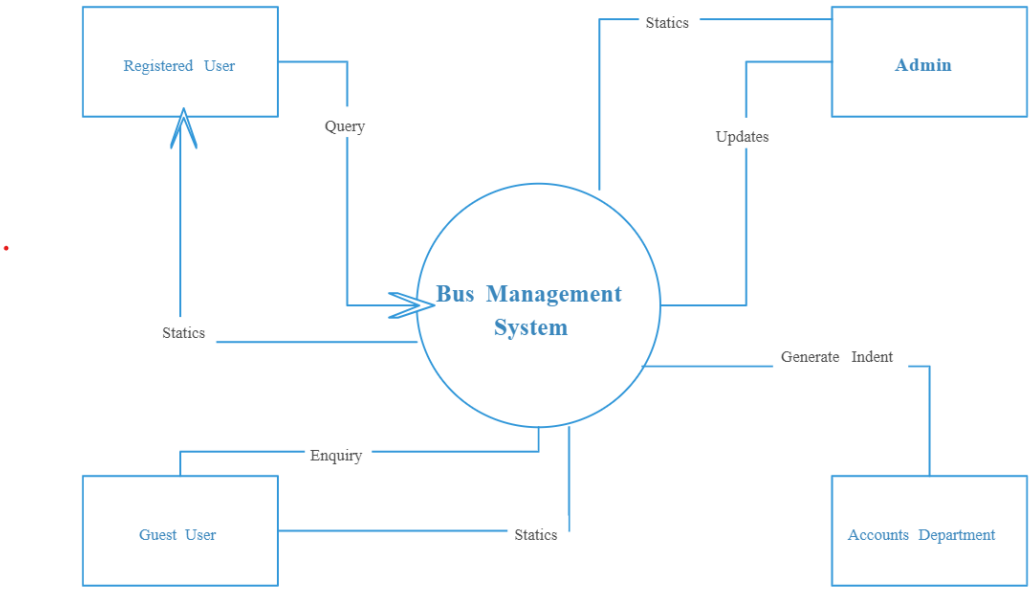


E) State Diagram

- State diagram



F) Dataflow Diagram



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- https://www.busbud.com/
- https://www.redbus.in/