Software Requirements Specification

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Online Bus Ticket Booking System

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1. Introduction:

The Online Bus Ticket Booking System (OBTBS) is a web-based application that provides a platform for booking bus tickets online. This software system aims to simplify the process of booking bus tickets by providing an easy-to-use interface to the customers. The system allows users to search for available buses, book tickets, and cancel bookings if necessary.

2. Scope :

The Online Bus Ticket Booking System is designed to provide the following functionalities:

2.1 User :

- User Registration and Login
- Search for Available Buses
- Book Bus Tickets
- Cancel Booked Tickets
- View Booking History
- View Available Buses

2.2 Admin :

- Admin Registration and login
- Search for Available Buses
- Cancel Booked Tickets
- View Bookings of each Customer
- View Available Buses
- Manage Bus Schedules

- Manage Bookings
- Manage Ticket Pricing
- Manage Routes
- Manage User Accounts
- Track Total Sales by Bus or by Date
- Track Seats occupied
- View Other Admins

3. Functional Requirements:

3.1 User :

3.1.1 User Registration and Login:

- The system shall allow users to register and create an account by providing their personal information such as Name, Phone number, and Password.
- The system shall allow users to log in using their Name and Password.

3.1.2 Search for Available Buses:

- The system shall allow users to search for Buses Available based on the Bus Number entered, Route(Source and Destination), Date of Travel.

3.1.3 Book Bus Tickets:

- The system shall allow users to book bus tickets by selecting the desired bus, seat(s), based on the Route and Date of Departure

3.1.4 Cancel Booked Tickets:

- The system shall allow users to cancel their booked tickets up to a certain time limit and receive a refund if applicable.

3.1.5 View Booking History :

- The system shall allow users to view their Booking history and Details such as the Bus name, Departure Date and Time , Destination cities, Ticket price, and Booked Time.

3.1. 6 View Available Buses :

- The system shall allow the users to view the available buses, their schedules, and the number of seats available for booking.

3.2 Admin :

3.2.1 Admin Registration and Login:

- The system shall allow admins to register and create an account by providing their personal information such as Name, Username and Password.
- The system shall allow admins to log in using their UserName and Password.

3.2.2 Search for Available Buses:

- The system shall allow admins to search for Buses Available based on the Bus Number entered, Route(Source and Destination), Date of Travel.

3.2.3 Book Bus Tickets:

- The system shall allow admins to book user bus tickets by selecting the desired bus, seat(s), based on the Route and Date of Departure

3.2.4 Cancel Booked Tickets:

- The system shall allow admins to cancel users booked tickets at any point of time

3.2.5 View Booking History :

- The system shall allow admins to keep track of users Booking history and Details such as the Bus name, Departure Date and Time , Destination cities, and Ticket price, Booked Time.

3.2. 6 View Available Buses :

- The system shall allow the administrator to view the available buses, their schedules, and the number of seats available for booking.

3.2. 7 Manage Bus Schedules :

- The system shall allow the administrator to manage the bus schedules by adding, updating, or deleting bus schedules.

3.2.8 Manage Bookings :

- The system shall allow the administrator to manage the bookings by adding, or deleting bookings.

3.2.9 Manage Ticket Pricing :

- The system shall allow the administrator to manage the ticket pricing by setting the price of tickets for different types of buses and routes.

3.2.10 Manage Routes :

- The system shall allow the administrator to manage the routes by adding, updating, or deleting routes.

3.2.11 Manage User Accounts :

- The system shall allow the administrator to manage the user accounts adding, or deleting users to the system Database.

3.2.12 Track Total Sales by Bus or by Date :

- The system shall allow the administrator to keep track of Total Sales generated on any given day , by any bus.

3.2.13 Track Seats occupied :

- The system shall allow the administrator to keep track of Seats occupied by any bus.

3.2.14 View Other Admins :

- The system shall allow the administrator to keep track of other admins in the system, and look at their Details.

4. Non-Functional Requirements :

The following are the Non-Functional requirements of the Online Bus Booking Portal:

- Performance
- Reliability
- Security

- Usability
- Compatibility

4.1 Performance:

- The system shall be able to handle a few concurrent users and process their requests quickly.

4.2 Reliability :

- The system shall be reliable and provide accurate information to the users.

4.3 Security :

- The system shall be secure and protect user information such as personal and payment information, and store user passwords in an encrypted format.

4.4 Usability :

- The system shall be easy to use and provide a user-friendly interface to the users. The user interface is intuitive, and users should be able to complete their bookings without any difficulties .

4.5 Compatibility :

- The system shall be compatible with different web browsers and operating systems.

5. Constraints:

The following are the Constraints of the Online Bus Booking Portal:

- Hardware Constraints
- Software Constraints
- Design and Implementation Constraints

5.1 Hardware Constraints :

- The system is developed to run on all PCs and Smartphones .

5.2 Software Constraints :

The system is developed using the following software tools and technologies:

- Programming Language: PHP
- Web Server: Apache
- Database: MySQL
- Frontend: HTML , CSS, JavaScript

5.3 Design and Implementation Constraints:

- The current constraints on the project are related to the provision of the database resources. The more robust and the faster the database, the better the performance of the software. Once the customer is directed to the payment page, we can't redirect him to the payment gateway.
- User Documentation : A brief description and hands-on tutorial would be sufficient for understanding the workings of the Online Bus Reservation Portal. Along with this, a user's manual would be handy for quick references to the various features that the software has.

Assumptions and Dependencies :

- The users are supposed to know the basics of using computers, like typing on a keyboard, clicking using a mouse or should be able to use an android mobile.
- Since the whole software is implemented in the English Language, the users of this software are expected to be comfortable with the English Language

6. System Architecture :

- The Online Bus Booking Portal uses a three-tier architecture, consisting of a presentation layer, application layer, and data layer.
- The presentation layer handles user interactions and displays data to users.
- The application layer contains the business logic and process user requests.
- The data layer handles data storage and retrieval.
- The system uses the following components:
    1. Web Server: The web server handles user requests and responses.
    2. Database Server: The database server stores user and booking information.

7. Data Management :

- The system uses a relational database to store user and booking information. The database is secure and provides data integrity and consistency.

8. External Interface Requirements

8 .1 Software Interfaces :

This system will require database management software like MySQL to manage the process of storing the system data, and web server software that organizes the distribution of users in the local network. This system further needs to interact with database management software (XAMPP / MAMP) to program and create an Online bus Booking Management System.

Booking process of the system that organizes the distribution of users in the local network and able to do this online booking.

These databases include Bus seats and passenger information. These can be modified by the end users.
The Bus database will include the bus number, seats, bus schedule and if they are vacant and available or reserved.
The passenger information database will contain all the information of the passenger such as Name , Id, and Phone Number.

8.2 Communication Interfaces :

- The system communication interface is completely dependent on server software to ensure correct sending and retrieving data from the database.
- The System will perform the following functions:
    1. Sophisticated and user-friendly interface for all passengers. Individual account or profile for each user related to the system. Internet connection to work on with the system.
    2. Real time or dynamic service should be given in case of all changes appearing in the system

9. Requirements :

9.1 Site Adaptation Requirements :

- The software does not require any modifications for site adaptation.
- The system works on a basic computer that is connected to the organization’s local area network.

9.2 Performance Requirements:

- For better performance high speed Internet connection is preferred.
- Any browser with a recent version would work fine.

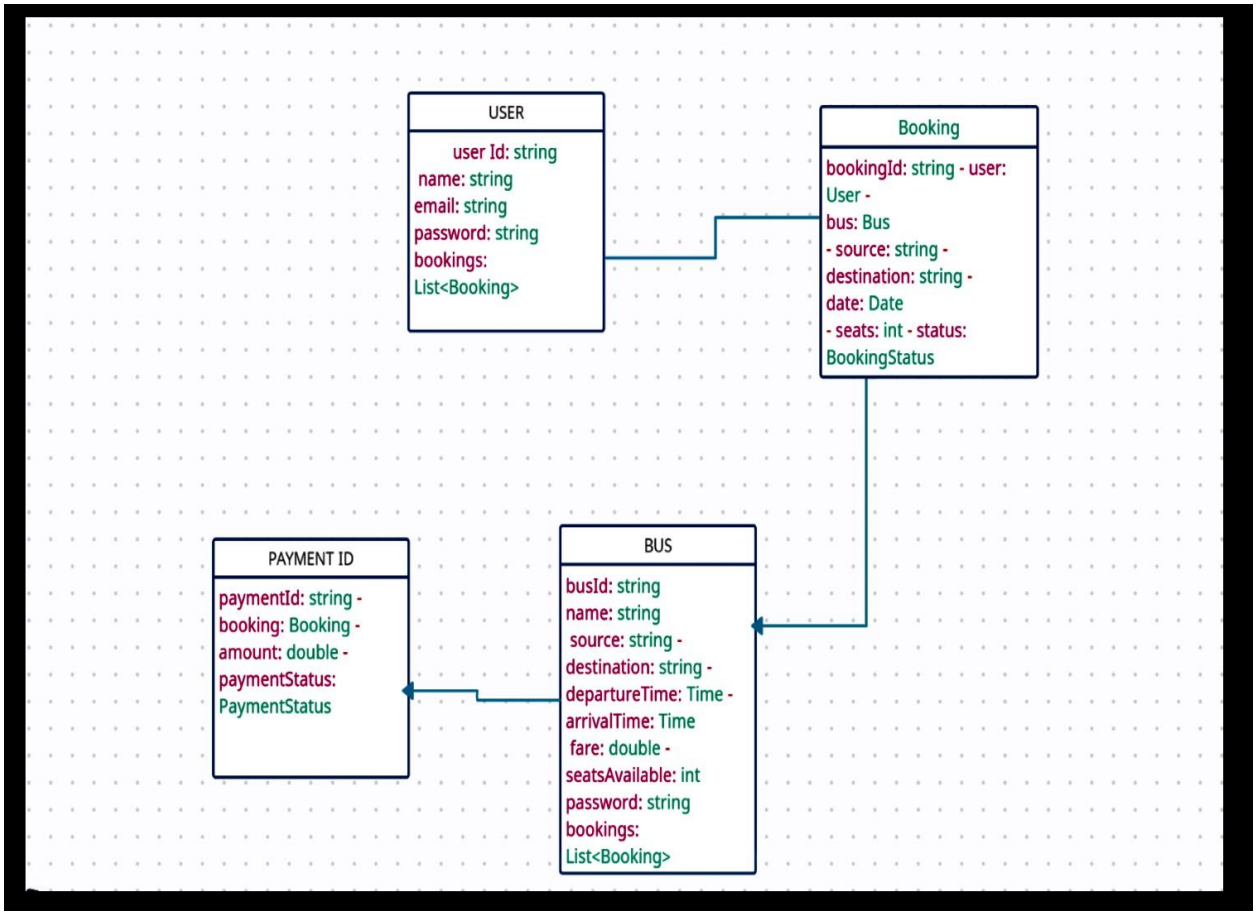
9.3 Security Requirements:

- The passwords are encrypted so that no one else can know the password.
- Since there are separate logins for different types of users, their work is restricted to the respective users.

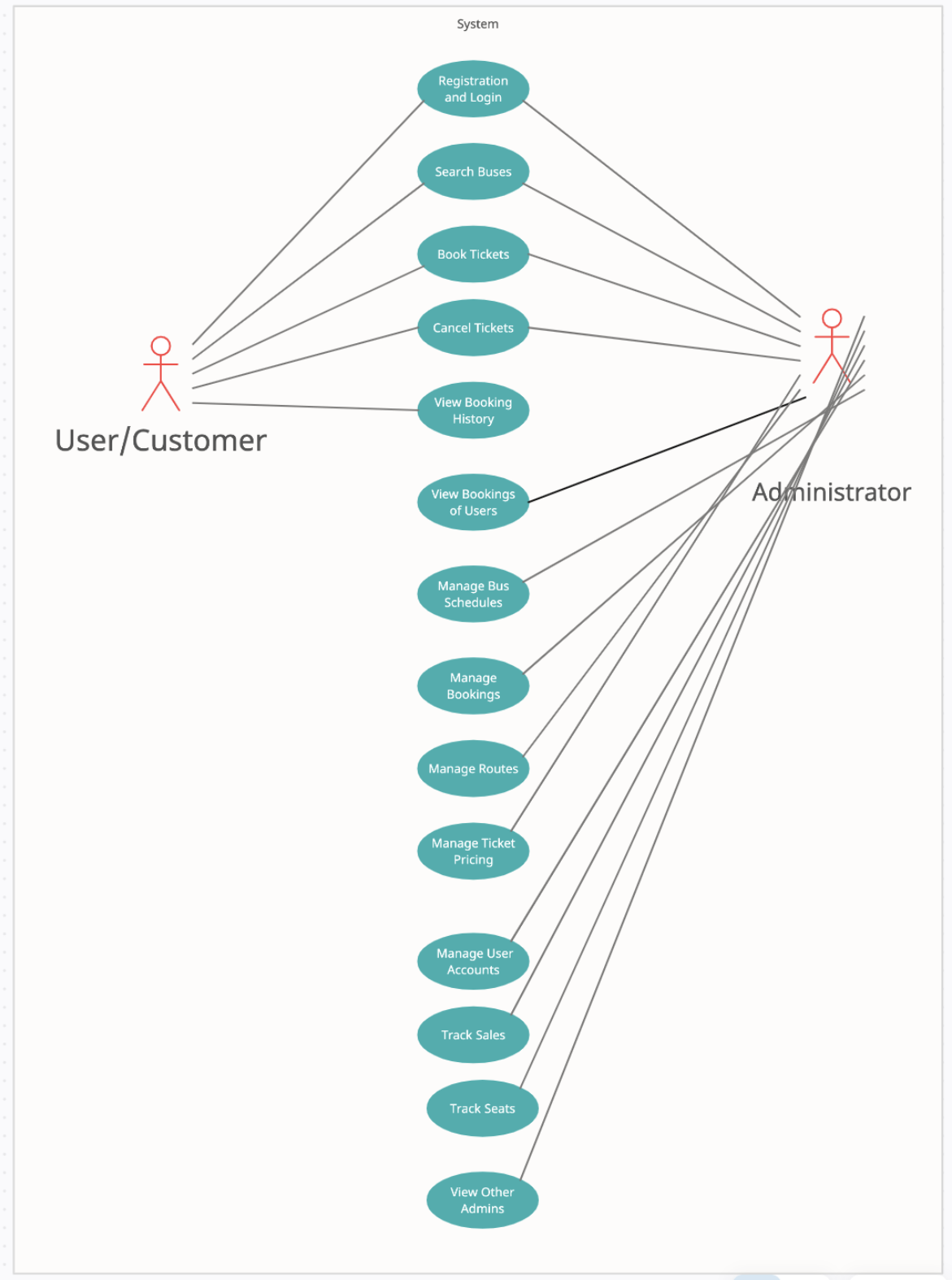
9.4 Safety Requirements :

- All the users must remember their login credentials

10. Class Diagram:



11. Use Case Diagram:



12. Conclusion:

- This facility is helpful for the users and the organization as well.
- This is a simple yet effective technology which helps the users to access the service concurrently from different places.
- This project is designed to meet the requirements of an Online Bus Ticket Booking System.
- It has been developed using HTML, PHP, CSS, JAVASCRIPT and the database has been built in MySQL.
- By using this application, the company can provide reservation services and information to their customers without the limitation of office hours or manpower.
- Not only does it let customers book trips around the clock from any location with an internet connection but it is also designed for use by the company to internally manage their business processes minimizing Human errors.