

Project : Railway Reservation System

Shall Statements

Functional Requirements

1.Login / Sign Up Function :

1.1Allow passengers to create a new account.

1.1.1Collect personal details such as name, email address, and phone number during account creation

1.1.2Create a login system using email address and password for the registered passengers

1.1.3Ensure system security and privacy of passenger information through authorized access

2.Train Search Function :

2.1Enable passengers to search for train timings, availability, and fare for a given destination

2.2.Store all train-related information, including timings, routes, and fares in a database

2.3.Query the database to retrieve relevant information based on the search criteria entered by the passenger

2.4.Display all available trains, their timings, routes, and fares for the given destination

3.Booking Tickets :

3.1.Enable passengers to view the list of available trains and their schedules for the desired destination

3.2.Display the available classes for each train such as first class, business class, and economy class

3.3.Allow passengers to select a train from the list of available trains

- 3.4.Allow passengers to select a class for the selected train based on their preference and budget
- 3.5.Check for the availability of seats in the selected class and train
- 3.6.Display the fare for the selected class and train based on the travel distance and other factors
- 3.7.Provide the passengers with the option to proceed with the booking or to cancel the selection and make changes if required
- 3.8.Once the passenger confirms the selection, reserve the seats in the selected class and train and generate a booking confirmation number
- 3.9.Display the booking confirmation number and ticket details to the passenger for future reference.

4.Cancellation :

- 4.1.Provide a list of booked tickets for the passenger to select the one they wish to cancel
- 4.2.Retrieve the details of the selected ticket, including the train name, date of travel, and class
- 4.3.Display the cancellation policy to the passenger and inform them of any applicable charges
- 4.4.Allow passengers to confirm the cancellation and refund request
- 4.5.Cancel the reserved seats and release them for others to book
- 4.6.Calculate the refund amount based on the cancellation policy and the time remaining until the date of travel
- 4.7.Process the refund and update the passenger's account balance or credit card
- 4.8.Display the refund amount and updated account balance or credit card details to the passenger for reference.

5.Payment Option :

- 5.1.Provide passengers with different payment options such as credit card, debit card, net banking, and digital wallets
- 5.2.Display the payment options to the passengers along with any applicable fees or charges
- 5.3.Process the payment transaction securely using a payment gateway
- 5.4.Confirm the payment and generate a payment receipt

6.Adding Train :

- 6.1.Provide an interface for the admin to add a new train to the system
- 6.2.Retrieve the details of the new train from the admin, including its name, number, source, destination, and stops

7.Modify :

- 7.1.Allow admin to modify the details of an existing train, such as its timings, stops, and fare
- 7.2.Retrieve the details of the train to be modified and display them to the admin for editing
- 7.3.Update the details of the train in the database and notify passengers of any changes made

8.Remove Train :

- 8.1.Allow admin to remove a train from the system
- 8.2.Retrieve the details of the train to be removed and check if any passengers have booked tickets for it
- 8.3.Cancel the reservations of all passengers who have booked tickets for the train to be removed and process their refunds
- 8.4.Remove the train from the database and notify passengers of its removal.

9.REvenue Report :

- 9.1. Provide an interface for the admin to select a specific time period for which the revenue report is to be generated
- 9.2. Retrieve the booking details from the database for the selected time period, including the number of tickets sold, the fare for each ticket, and the total revenue generated
- 9.3. Calculate the revenue earned from each train and display it in the revenue report
- 9.4. Allow the admin to export the revenue report in a suitable format, such as PDF or Excel.

Non-Functional Requirements

1. **Performance:** The system must be able to handle a large number of concurrent users without experiencing any performance degradation.
2. **Scalability:** The system should be designed in a way that allows it to be scaled up or down depending on the number of users or the size of the database.
3. **Reliability:** The system must be highly reliable and available at all times. It should be able to recover from failures quickly and efficiently without losing any data.
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6. **Security:** The system must be secure and protect user data from unauthorized access. All data transmitted between the client and the server must be encrypted.
7. **Usability:** The system must be easy to use and navigate for all types of users. It should have a clear and intuitive interface with appropriate documentation.
8. **Maintainability:** The system must be easy to maintain and upgrade. It should be designed in a way that allows for easy integration with other systems.