**Train Ticket Reservation Application Software Detailed Documentation**

**1. Introduction**

The Train Ticket Reservation Application is a system designed to facilitate the booking of local train tickets and provide seamless travel experiences for users. This document provides a comprehensive overview of the software, detailing its features, functionalities, and user interactions.

**2. System Overview**

The Local Train Ticketing Application allows users to perform the following actions:

* **User Authentication:** Users can log in with their credentials to access the system.
* **Ticket Booking:** Users can book local train tickets online.
* **Ticket Receipts:** Users can generate and print ticket receipts.
* **Ticket Information:** Users can view details about train timing, delays, and other relevant information.
* **Admin Operations:** Admins can manage train schedules, recharge user balances, and monitor ticket processing.

**3. Functionalities**

**User Authentication**

* **Login:** Users can log in to the system using their username and password.
* **Logout:** Users can log out of the system to securely end their session.

**Ticket Booking**

* **Ticket Booking Form:** Users can fill out a ticket booking form to select their source and destination stations.
* **One-Way and Return Tickets:** Users can choose between one-way and return tickets.
* **Class Selection:** Users can select between first-class and second-class carriages for their journey.

**Ticket Management**

* **Ticket Receipt Generation:** Users can generate ticket receipts after booking.
* **Ticket Printing:** Users can print their ticket receipts for offline use.
* **Ticket Cancellation:** Users can cancel their tickets if required.

**Train Information**

* **Real-Time Train Schedule:** Users can access real-time information about train timings and delays.
* **Train Tracking:** The system tracks train departures and arrivals, updating users accordingly.
* **Station Information:** Users can view information about different stations and train routes.

**Admin Operations**

* **Train Schedule Management:** Admins can enter and manage details about train trips and schedules.
* **User Account Management:** Admins can recharge user account balances and monitor ticket processing.
* **Station Master Access:** Station masters can update train arrival and departure times at their respective stations.

**4. System Architecture**

The Local Train Ticketing Application follows a client-server architecture. The client-side application provides a user-friendly interface for users to interact with the system, while the server-side application handles data processing, storage, and communication with external systems.

**4. Functional requirements**

1. Allow users to login by his unique email and password.

2. Provide a user registration form that allows users to sign up and create an account to login to the system.

3. Provide dashboard for the user which enable him to see all available trains details.

4. Allow user to search for specific train or trip.

5. User profile management: Users must be able to view and update their profile information such as name, email address, contact number, etc

6. Ticket confirmation: The system will confirm user's ticket after booking the trip.

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8. Ticket printing: The system should allow user to view and print their ticket receipts after booking them online.

9. Ticket cancellation: - Users must be able to cancel their tickets if required

10. Feedback system: Allow users to provide feedback about their experience with the application and suggest improvements.

11. Allow users to search for the train-by-train number.

12. Station information: The system should provide users with information about the different stations.

13. Allow user to logout.

14. Allow admin to login to the system.

15. The system should provide a dashboard for the admin to manage train schedules

16. Admin's dashboard must include all trips ,station master and clients' reservations information.

17. Train schedule management: allow the admin to enter the details of train trips and their timings/schedule for different stations.

18. Provide a database of all available stations that can be modified for different cities.

19. The admin must be able to monitor journey tickets processed within the system.

20. The dashboard should include options to add, edit, or delete train schedules.

21. Allow station master to login to the system by his account provided by the admin.

22. The station master should be able to view and manage train delays.

23. Allow station master to manage and update his account information Allow the station master to update train arrival and departure timings.

24. The system should pass on the timing details to another station's system.

25.Allow the admin to manage and update his account information.

26. Allow admin to enter and manage station master's information

27. Allow the admin to view users feedback and complaints.

28. view clients booking history and track their journey details.

**4. Nonfunctional requirements**

**Performance**: -

. The system must be able to handle a large number of concurrent users and process ticket bookings and tracking requests quickly and efficiently.

**Security**: -

. The system must be secure and protect user data from unauthorized access and attacks.

**Reliability**: -

The system must be reliable and available 24/7 to handle reservations and provide real-time information to users.

**Usability**: -

. The system should be easy to use and provide clear instructions and error messages to guide users through thebooking and tracking process.