Welcome

Railway Booking System

Prepared by.:-

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Admin Login

❑ Admins have access to manage and update train schedules, fare prices, and other crucial data. Our system features advanced security measures to protect sensitive information.

➢ Admin Authentication	➢ Admin Dashboard	➢ Admin Management
Secure login system using multi-factor authentication.	Centralized hub for managing data and overseeing system operations.	Tools for updating train schedules, fares and other essential information.

User Login & Signup

❑ User can create accounts to manage their bookings, access travel history, and receive personalized recommendations.

- **Easy Signup**
  Quick and simple registration process for new users.

- **Secure Login**
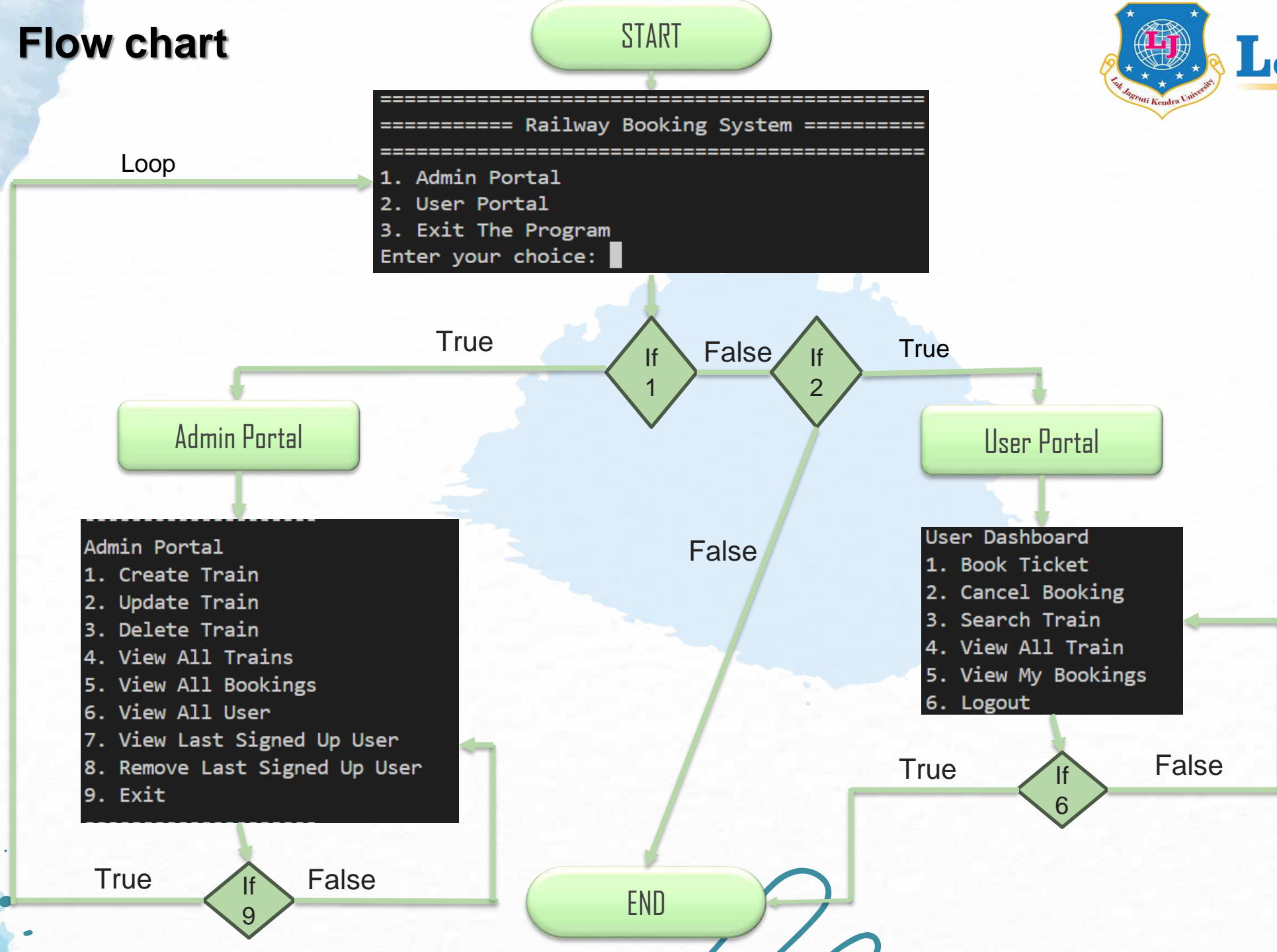 Protected user accounts with strong password requirements.

- **Account Management**
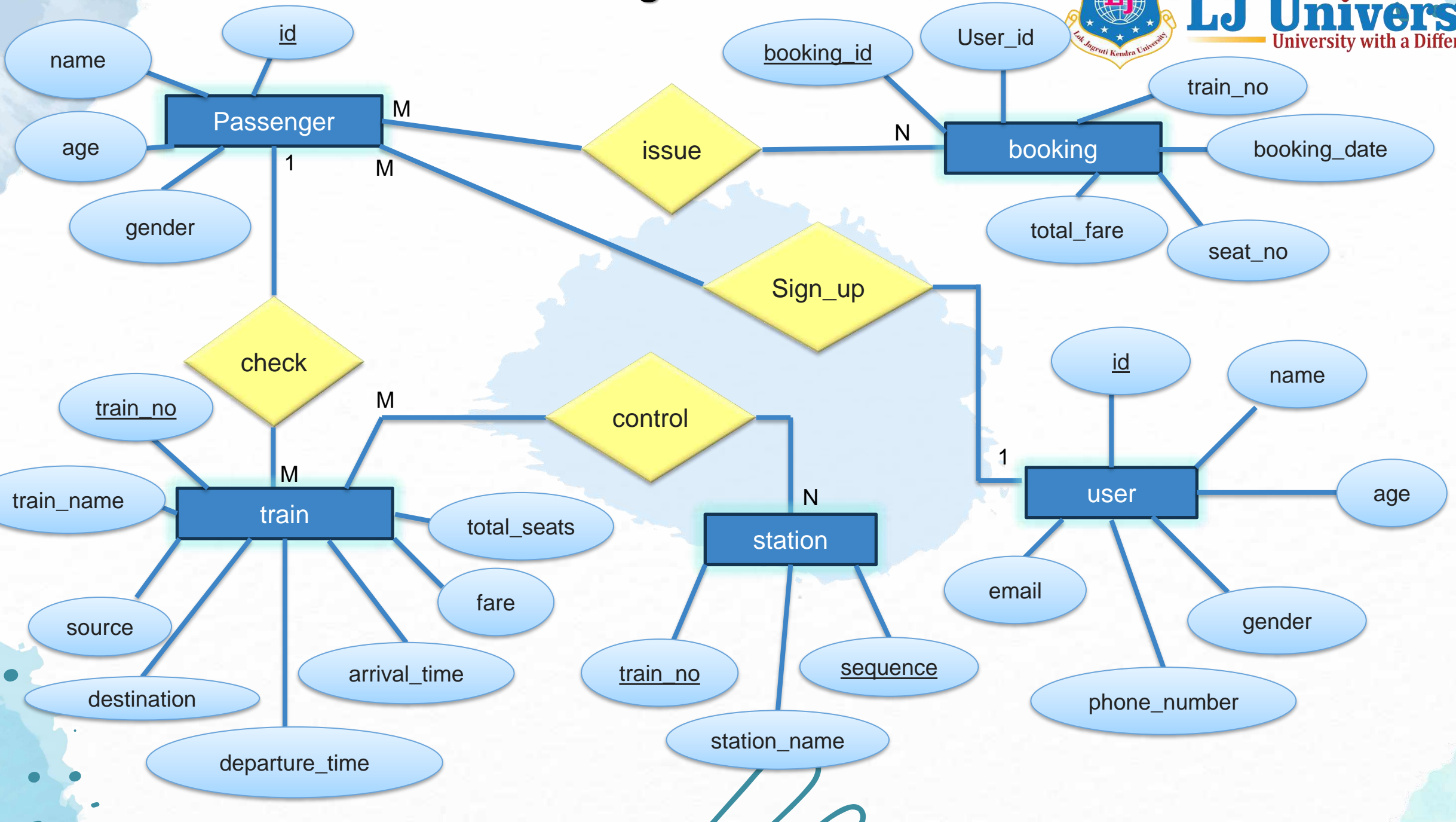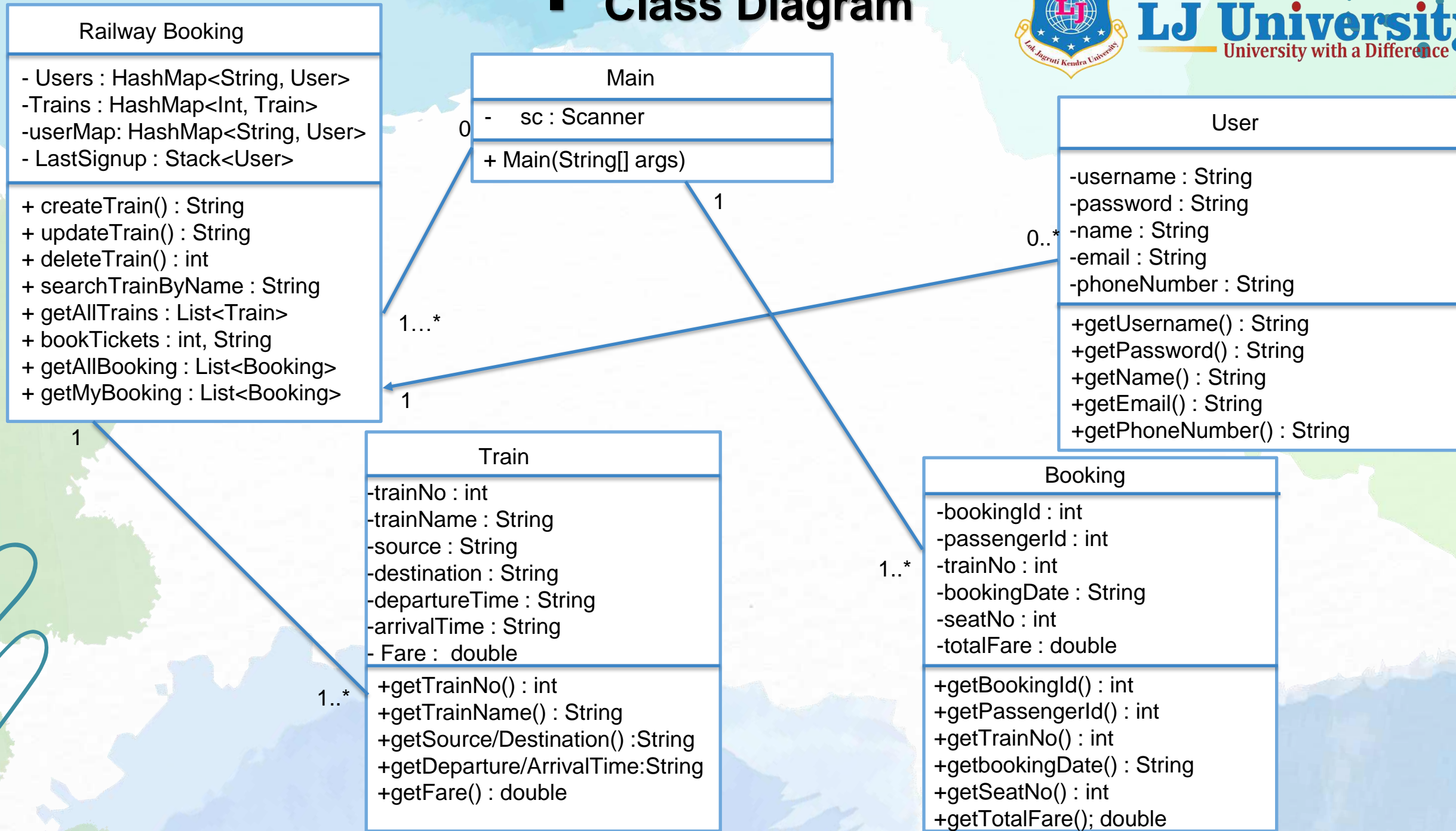 User can update their profiles, manage payment details, and view past booking.

Flow chart

Class Diagram

Railway Booking

- Users : HashMap<String, User>
-Trains : HashMap<Int, Train>
-userMap: HashMap<String, User>
- LastSignup : Stack<User>

+ createTrain() : String
+ updateTrain() : String
+ deleteTrain() : int
+ searchTrainByName : String
+ getAllTrains : List<Train>
+ bookTickets : int, String
+ getAllBooking : List<Booking>
+ getMyBooking : List<Booking>

Main

- sc : Scanner

+ Main(String[] args)

User

-username : String
-password : String
-name : String
-email : String
-phoneNumber : String

+getUsername() : String
+getPassword() : String
+getName() : String
+getEmail() : String
+getPhoneNumber() : String

Train

-trainNo : int
-trainName : String
-source : String
-destination : String
-departureTime : String
-arrivalTime : String
- Fare : double

+getTrainNo() : int
+getTrainName() : String
+getSource/Destination() :String
+getDeparture/ArrivalTime:String
+getFare() : double

Booking

-bookingId : int
-passengerId : int
-trainNo : int
-bookingDate : String
-seatNo : int
-totalFare : double

+getBookingId() : int
+getPassengerId() : int
+getTrainNo() : int
+getbookingDate() : String
+getSeatNo() : int
+getTotalFare(); double

0

1

1…*

1

0..*

1

1..*

1..*

Search and Book Tickets

❑ Search for available trains based on departure and arrival cities, date, time preferences. Easily book tickets with just a few clicks.

1

Search Filters
→ Specify your travel details, including dates, cities, and seating preferences.

2

Available Trains
→ View a list of available trains matching your search criteria.

3

Select Seats
→ Choose your preferred seats from the available options.

4

Payment
→ Secure process payment using a variety of payment methods(Cash/Card/Online-UPI).

5

Confirmation
→ Receive an instant confirmation email with your ticket details.

View Tickets Details

❑ Easily access and manage your tickets, including viewing details like departure time and arrival times, seat number and passenger information.

User Id	Departure Time	Seat Number
Ticket Id	Arrival Time	Total Fare
Train Id	Departure City	Booking Date
Train Name	Arrival City	Number

Manage Bookings

❑ User can modify or cancel existing bookings, view past journeys, and see all routes for future trips.

1. *View Booking*

Access comprehensive record of all your past and current train journeys.

2. *Cancellation*

Easily cancel bookings and receive refunds according to our cancellation policy.

3. *Booking History*

Access a detailed record of all your past train journeys for easy reference.

4. *Saved Routs*

Save your frequently Traveled routes for quick and easy booking.

Reference :- MS Edge

Payment Options

❑ Offer a variety of secure and convenient payment methods, catering to diverse user preferences.

Credit/Debit Cards

→Accept major credit and debit cards for seamless payment.

Cash

→Pay with cash upon delivery or at our physical locations.

Online Payment

→Support UPI payments for secure and instant transactions within India.

Net Banking

→Allow users to pay directly from their bank accounts using online banking services

Reference :- generated image (AI)

Functionalities

Data Structures Using Java	Java-II	Database Management
1. Class Stack is used in CreatingUser(Push) & lastSignupUser(Peek).	1. Exception handling in sql queries.(And All Other)	1. CreateTrain, UpdateTrain, Delete Train, View Train(In train table) using queries.
2. Class Queue is used in Signup user(Thread's run() method).	2. Thread Use in SignupTask Class(For User's Signup).	2. BookTicket Of User using query in booking table.
3. Class Linkedlist is used in Transection Of Train Booking(Payment Section).	3. HashMap,List,Stack this classes used in railwaybooking class.	3. Delete Train, View All Passenger & Insertion Of Train Using SQL Procedures.
4. lastSignupUser and removeLastSignupUser Using Stack method.	4. Password validation and login signup.	4. Create Table name user using SQL queries.

Merit & Demerit

❑ Merit

- **Efficiency**
➔ The system streamlines the booking process, saving time and effort for users.

- **Convenience**
➔ Users can book tickets from the comfort of their homes or on the go.

❑ Demerit

- **Limited Availability**
➔ Not all trains or routes may be available on the system, potentially limiting options.

- **Technical Glitches**
➔ Occasional technical issues may occur, potentially disrupting the booking process.

Future Scope

➢ Developing a robust and scalable Railway Booking System that integrates with other railway systems, offers personalized travel recommendations, and expands to other modes of transportation.

➢ Creating a seamless and secure railway booking experience that provides real-time updates, minimizes technical glitches, and offers exclusive deals and loyalty programs.

➢ Designing a futuristic Railway Booking System that leverages cloud-based services, artificial intelligence, and data analytics to optimize route planning, predict demand, and enhance the overall user experience.

Thank You