Railway Reservation System

POC

Low Level Design (LLD)

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Date: 09/09/2022

Current Document Version: [*1.0*]

DOCUMENT APPROVAL

Approvers of this document

Name	Department	Role	Signature	Date

DOCUMENT CHANGE HISTORY

Document Version #	Author	Date	Description
1.0			

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1.0 Document Purpose

The purpose of the project is to provide a detailed description of the requirements for Railway Reservation System and to describe it, which provides train time table and fare details, reservation of berths, online payment and cancellation. This project will allow the end user to develop the required software and will also be used for the development of future stages of project.

2.0 Intended Audience

The intended audience of this project would be the **admin** and the **user.**

Characteristics of Intended Audience:

Admin:

Administrator has the prerogative of monitoring and updating the information's such as source of the train, departure of the train and the ticket fare.

User:

As a user, he/she will be able to:

- View train details such as train arrival/departure time & train available between a pair of station.
- Book ticket (maximum 6).
- Cancel ticket.

3.0 Project Background, Objectives

3.1 Project Background

The traditional way of booking ticket is very time consuming and for cancellation it is also a long process. Existing system has Latency while searching for train details. The existing system also gets crashed many a times while booking a ticket. So, the objective is to design a system which will enable the booking in any class, and a maximum of six berths/seats at a time, for journey between any two stations served by a train.

3.2 Project Objective

The main objective of the project is to develop the railway reservation system which will provide the most important customer interface to the business. The objective is also to give structural design to railway system. The project provides functionality and flexibility to railway system such that one can operate that system easily and efficiently. Using this system, a user will be able to perform various operations like book a ticket, cancel a ticket, view ticket fare and view train details. User should first register themselves and then perform all the other operations.

4.0 SOLUTION:

Railway Reservation

This system is designed for the online reservation of railway ticket because the traditional way of booking ticket is very time consuming and for cancellation it is also a long process. So, this system will enable the booking in any class, and a maximum of six berths/seats at a time, for journey between any two stations served by a train. It will also provide details about:

- Train available between a pair of stations
- Train fares

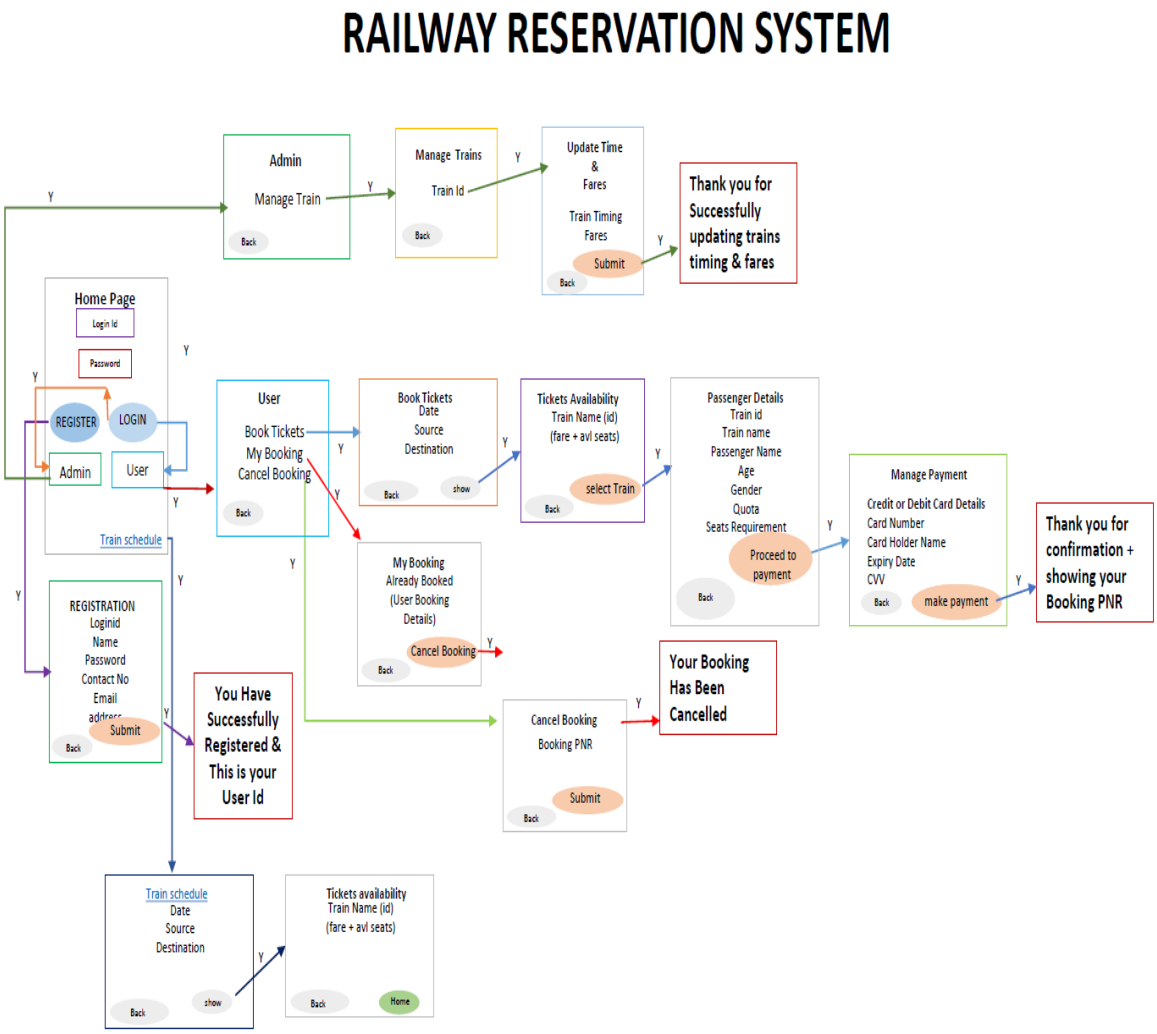
4.2 Solution Steps:

- **Guest**
  i. A guest can search for the train details such as train available between a pair of stations and its fare.
  ii. A guest can also register themselves as a user.
- **User Registration**
  i. A guest has to first click on the registration button available on the home page of the designed railway reservation system.
  ii. In the registration page opened the guest has to fill the required details such as name, email, phone number, age, sex.
  iii. After completing the details, the guest has to click on the register button which will add their details in the database.
  iv. Now the guest can successfully login as a user by providing the correct details.

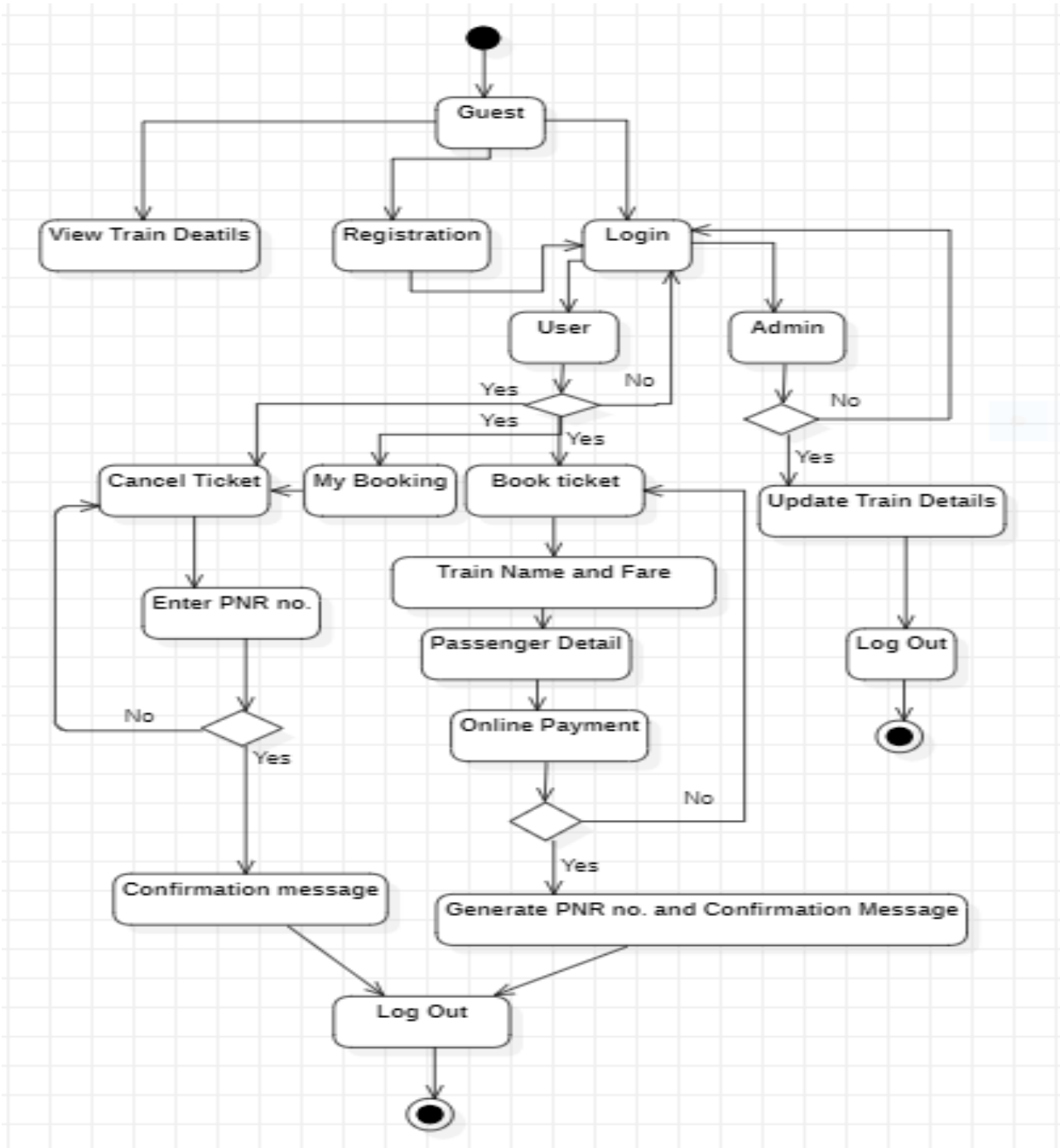
- **Book Ticket**
    i. For a user to book ticket, user has to first choose the date he/she wants to book the ticket and then select the source and destination of train.
    ii. After this the details such as Train Name, Fare, quota and no of seats available will be shown and the user has to select the train accordingly.
    iii. After opting the train, the user has to fill the passenger details such as train id, passenger name, age, berth preference and no of seats.
    iv. After completing the details user can proceed to the payment portal then pay the fare.

- **Cancel Booking**
    i. A user can cancel their ticket by providing the PNR number.
    ii. The PNR number will be checked in the database and if it matches the data the ticket will be cancelled.
    iii. A pop-up message will appear on the screen showing your booking has been cancelled and the mail will be send to the user.
- **Admin**
    i. Administrator has the prerogative of updating the train details. After choosing the manage train option, the admin can update train fares and timings. Admin can also change the source and destination of a train.

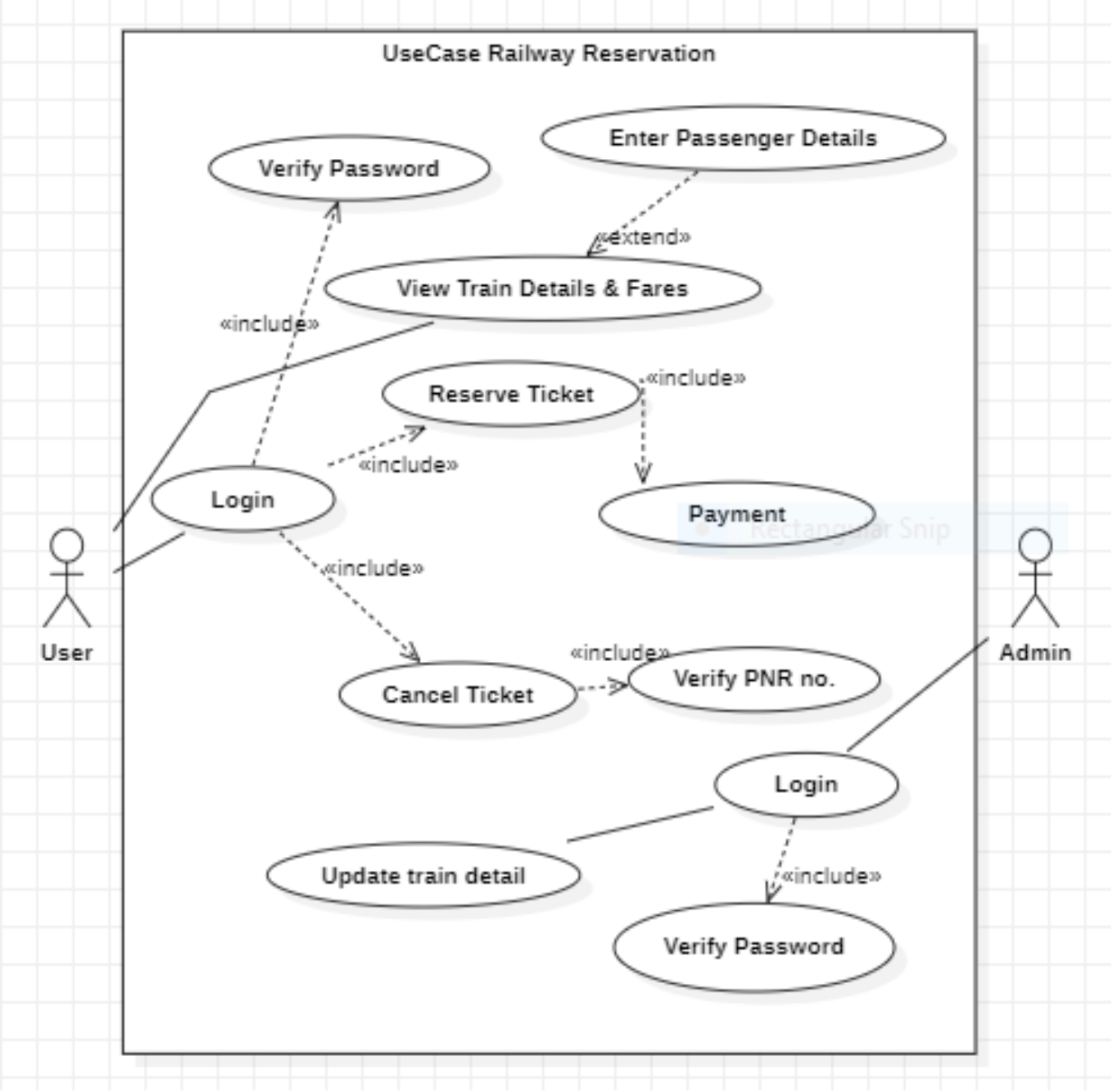
Workflow Diagram:



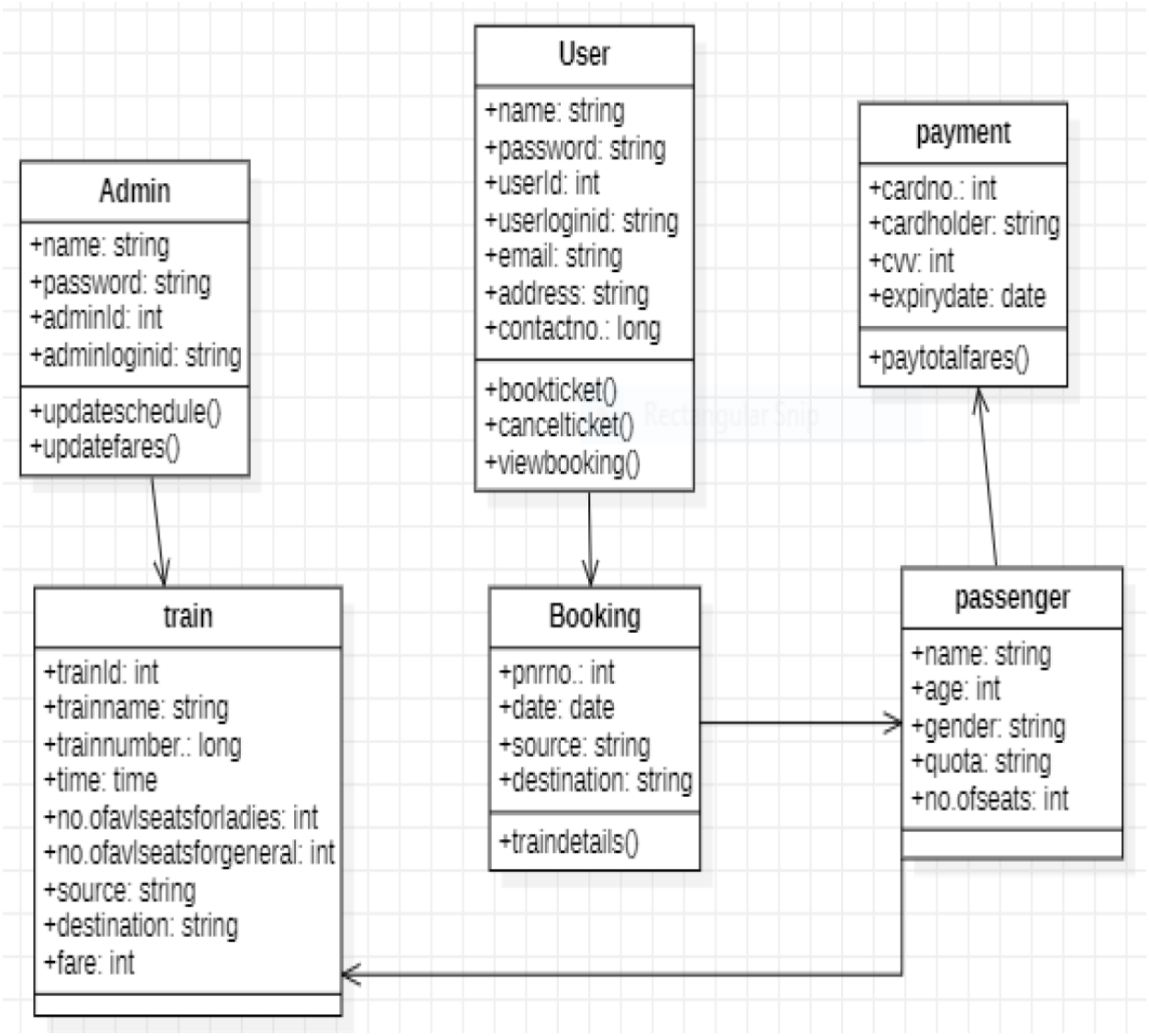
Activity Diagram:



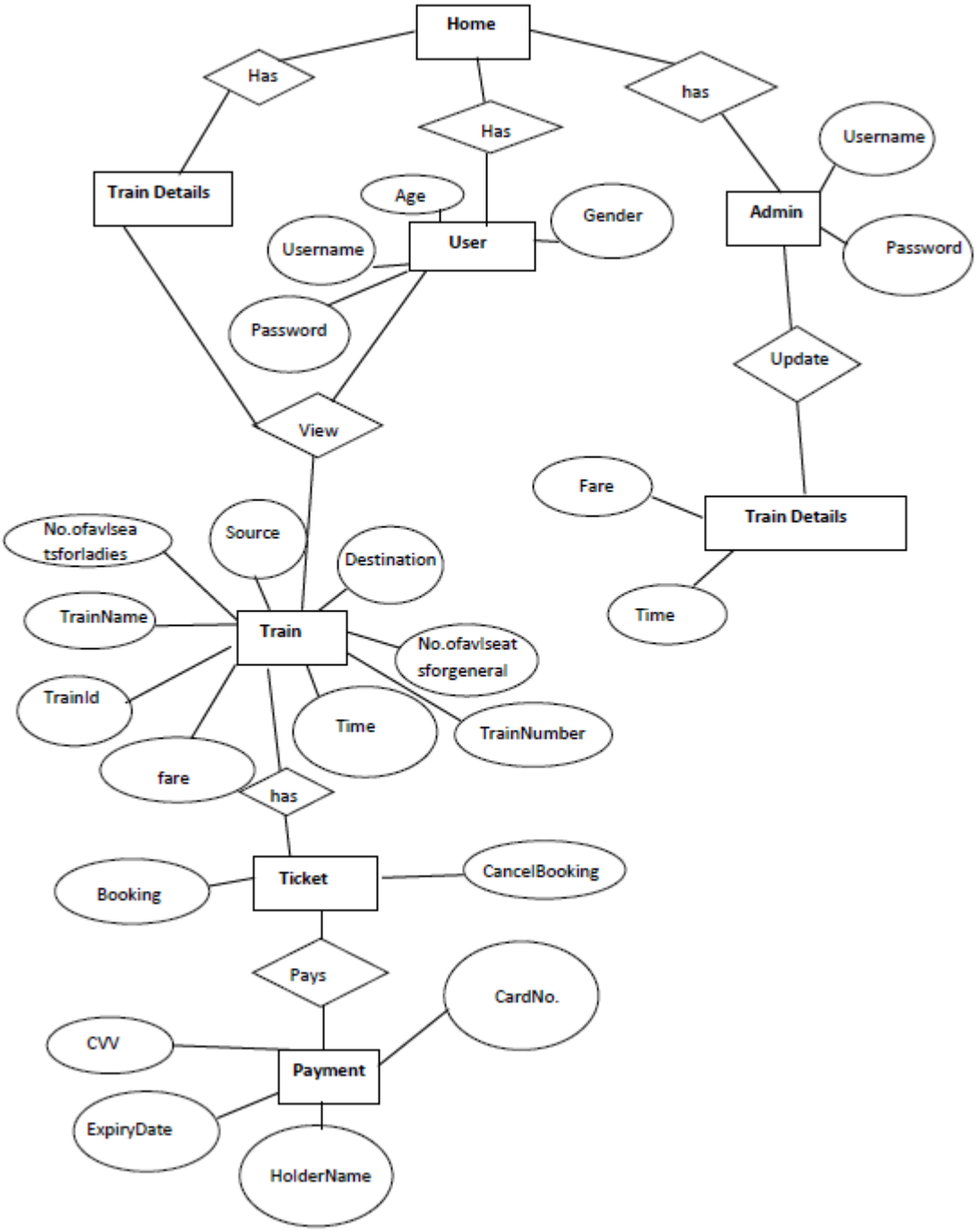
Use Case Diagram:



Class Diagram:



ER Diagram:



Data Model

T_Admin
Admin id[auto], Loginid, Name, Password

PK	Admin_id	INT, IDENTITY
	Admin_loginid	VARCHAR(25)
	Admin_name	VARCHAR(25)
	Admin_password	VARCHAR(10)

T_User
User id[auto], Loginid, Name, Password, Contact, Email, Address

PK	User_id	INT, IDENTITY
	User_loginid	VARCHAR(25)
	User_name	VARCHAR(25)
	User_password	VARCHAR(10)
	User_contact	BIGINT
	User_email	VARCHAR(30)
	User_address	VARCHAR(35)

T_Booking
PNR[auto], booking date, source, destination

PK	Booking_id	INT, IDENTITY
	Booking_date	DATE
	Booking_source	VARCHAR(20)
	Booking_destination	VARCHAR(20)

T_Trains
Train id[auto], Train Number, Name, Time, Source, Destination, Fare, Available seats(general), Available seats(Ladies),

PK	Train_id	INT, IDENTITY
	Train_number	BIGINT
	Train_name	VARCHAR(20)
	Train_time	TIME
	Train_source	VARCHAR(20)
	Train_destination	VARCHAR(20)
	Train_fare	INT
	Train_availseatforgeneral	INT
	Train_availseatforladies	INT

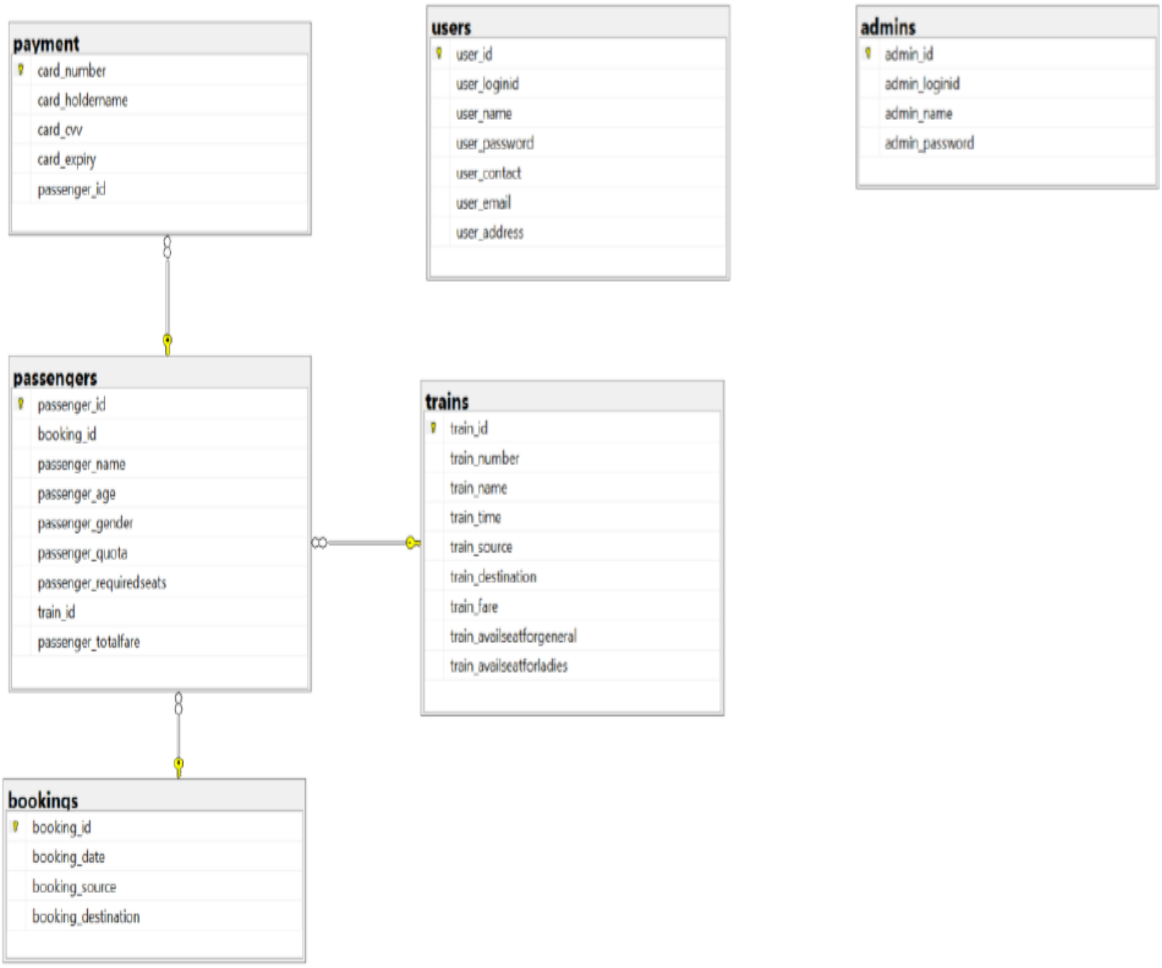
T_passenger
Passenger Id[auto], PNR, Name, Age, Gender, Required seats, Berth Preference, Train Id, TotalFare

PK	Passenger_id	INT, IDENTITY
FK	Booking_id	INT
	Passenger_Name	VARCHAR(25)
	Passenger_age	INT
	Passenger_gender	VARCHAR(8)
	Passenger_quota	VARCHAR(8)
	Passenger_requiredseats	INT
FK	Train_id	INT
	Passenger_totalfare	INT

T_payment
Card number, Card Holder Name, CVV, Expiry Date

PK	CARD_Number	BIGINT
	CARD_Holdername	VARCHAR(25)
	CARD_CVV	INT
	CARD_Expirydate	DATE
FK	Passenger_id	INT

Database Diagram



API CANVAS

Management services	Path	verb	API Description	Role	Auth
Railway-reservation-system	/login/user	POST	User Registration	User	True
Railway-reservation-system	/login	POST	User Login	Admin	True
Railway-reservation-system	/login	POST	User Login	User	True
Railway-reservation-system	/train	GET	View Train	Admin	True
Railway-reservation-system	/train	PUT	Update Train details	Admin	True
Railway-reservation-system	/book	POST	Book ticket	User	True
Railway-reservation-system	/book/train	GET	Availability of train	User	True
Railway-reservation-system	/book/train /passenger	POST	Add Passenger	User	True
Railway-reservation-system	/payment	POST	Add Payment	User	True
Railway-reservation-system	/payment/card	POST	Add Card	User	True
Railway-reservation-system	/payment	GET	Generate Total fare	User	True
Railway-reservation-system	/book	GET	View booking	User	True
Railway-reservation-system	/book	DELETE	Cancel Booking	User	True

Railway-reservation-system	/train	POST	Train Schedule	Guest	True
Railway-reservation-system	/train	GET	Availability of train	Guest	True

