Railway Reservation System

Mini- Project

Submitted in fulfillment of the requirement of University of Mumbai

For the Degree of

Engineering

in

(Computer Engineering)

by

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Terna Engineering College

NERUL, NAVI MUMBAI

CERTIFICATE

This is to certify that

1) **Sujoy Banerjee**
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Have satisfactorily completed the requirements of the ***Database System Laboratory Mini Project***

entitled

" Railway Reservation System"

As prescribed by the ***University of Mumbai*** *Under the guidance of*

Prof. Ravi Mathur

Guide

Index

Chapter 1

Abstract

- Our mini project depicts the designing and implementation of a Railway Reservation System.
- Our goal was to improve the user interface so that the people who are going to indulge in reserving their railway tickets should get a smooth and seamless experience, with timely updates and easy cancellation.
- Nowadays though there are lots of apps if you choose to book a railway ticket but we mainly focus on making the booking easier and more efficient as on one click you can check your booking status and on other hand you can cancel it.
- This Railway Reservation System would be mainly used to manage the booking related activities such as booking a ticket for yourself if you want to travel from place A to B and also check your booking status if your ticket is confirmed or it is still in Waiting list.
- In this project we tried to develop a computerised and web based Railway Reservation system. It would be helpful for the users since it gives easier access if you wish to book a railway ticket or cancel the existing booking. The database here is sorted and not clustered, separate databases have been made so that every detail is included i.e the train no:, train info:,name of the source and the destination.
- Using this system, it would help the passengers to not stand in the long queues and just book the ticket on the go.

Aim

The aim of case study is to design and develop a database maintaining the records of different trains, train status, and passengers. The record of the train includes its number, name, source, destination, and days on which it is available, whereas record of train status includes dates for which tickets can be booked, total number of seats available, and number of seats already booked. The database has been developed and tested on MySQL.

Problem Statement

Passengers can book their tickets for the train in which seats are available. For this, passengers have to provide the desired train number and the date for which ticket is to be booked. Before booking a ticket for a passenger, the validity of train number and booking date is checked. Once the train number and booking date are validated, it is checked whether the seat is available. If yes, the ticket is booked with confirm status and corresponding ticket ID is generated which is stored along with other details of the passenger. After all the available tickets are booked, certain numbers of tickets are booked with waiting status. If the waiting lot is also finished, then tickets are not booked and a message of non-availability of seats is displayed. The ticket once booked can be cancelled at any time. For this, the passenger has to provide the ticket ID (the unique key). The ticket ID is searched, and the corresponding record is deleted. With this, the first ticket with waiting status also gets confirmed.

Chapter 2

Introduction

The railway reservation system is to facilitate the passengers who want to enquire about the availability of trains on the date suitable for them, our system is mainly providing easy access for this, the passenger just needs to write the source and the destination to which he wants to travel and the date, the search results would appear and then he can choose his specific requirement for the berth or the time and can go ahead and book his ticket.

The passenger who searches for a particular train or via particular train no:, then needs to check if the train has the seat availability, if not then he cannot book his ticket in the particular train. But in case there is a waiting list then he can try his luck and book his ticket, once he books his ticket and his PNR no: gets generated he can check the status of his booking anytime via providing the correct PNR no:, before boarding the train he should have a confirmed ticket.

In case his waiting status ticket doesn't get confirmed then in that case, a message is sent that your ticket is not confirmed and is automatically cancelled.

If a passengers checks the train no: and enters the correct source and end destination, after validation he chooses to book a ticket as confirm ticket is available, once the payment is done, the passenger is given the confirmation ID and a PNR no: which consists of all the necessary information of the passenger travelling, a single person can book maximum of 10 passengers at a time, the ticket consists of passenger names, their age, contact details and aadhar card no:.

In case you already have a confirmed ticket and now wish to cancel it due to any personal reason, we have provided easier access, just enter the PNR no: and the ticket id and you have an option to cancel your ticket or if you want to cancel for just one passenger. After a confirmed ticket is cancelled automatically the first waiting list passenger gets a confirmed ticket message and subsequently the waiting list queue is cleared.

This is the basic functioning of the railway management system which is easier to handle as well as well efficient for the administration department which reduces the load they had, passengers would also have ease to access and we have tried to keep it as simple as possible.

Chapter 3

Design: ER Diagram

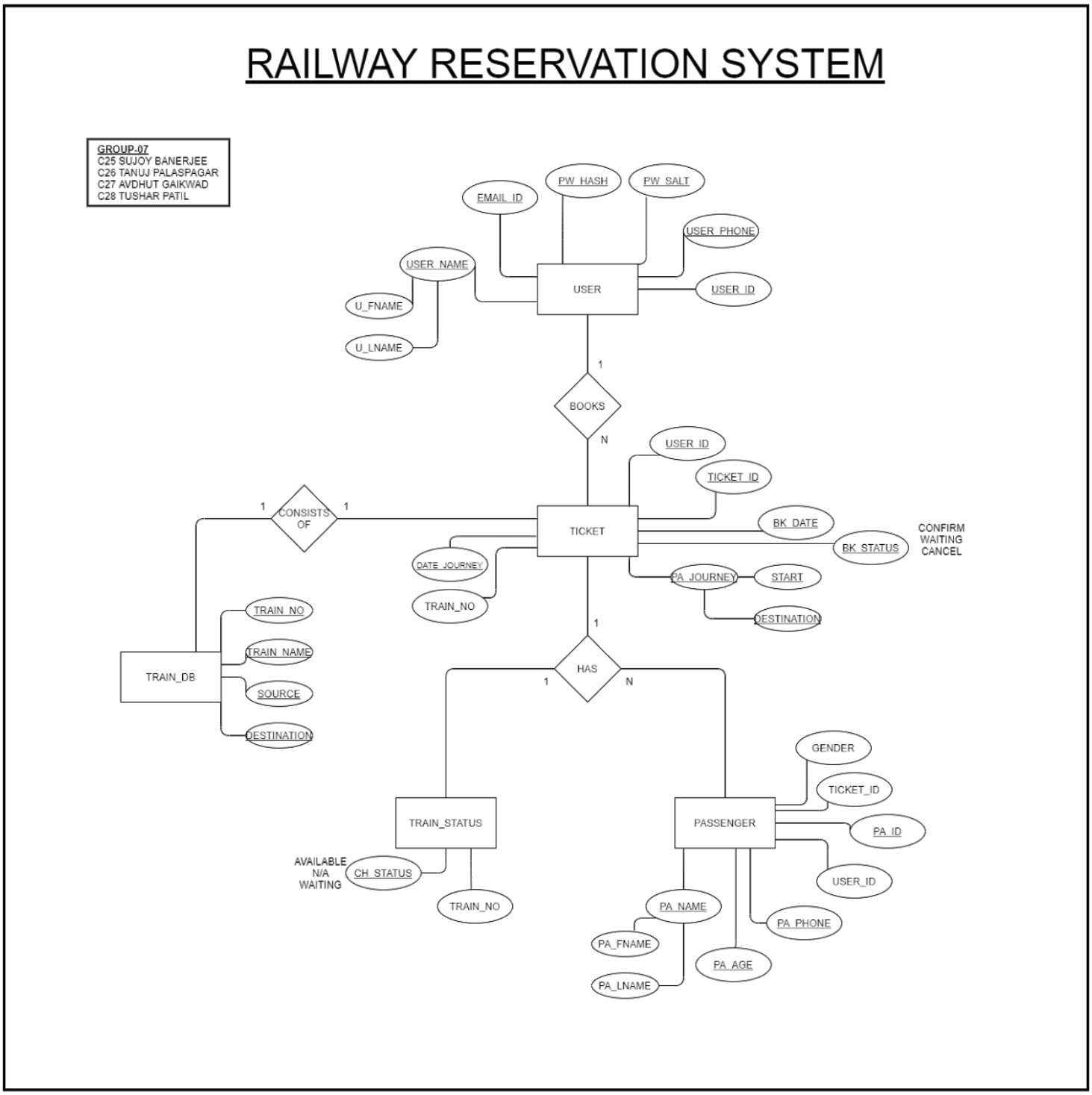


Table Creation with Constraints

```
CREATE TABLE `booking` (
  `uname` varchar(15) NOT NULL,
  `Tnumber` int(11) NOT NULL,
  `class` varchar(2) NOT NULL,
  `doj` date NOT NULL,
  `DOB` date NOT NULL,
  `fromstn` varchar(15) NOT NULL,
  `tostn` varchar(15) NOT NULL,
  `Name` varchar(15) NOT NULL,
  `Age` int(11) NOT NULL,
  `sex` varchar(10) NOT NULL,
  `Status` varchar(20) NOT NULL
)
```

```
CREATE TABLE `interlist` (
  `Number` int(6) DEFAULT NULL,
  `st1` varchar(10) DEFAULT NULL,
  `st1arri` varchar(10) DEFAULT NULL,
  `st2` varchar(10) DEFAULT NULL,
  `st2arri` varchar(10) DEFAULT NULL,
  `st3` varchar(10) DEFAULT NULL,
  `st3arri` varchar(10) DEFAULT NULL,
  `st4` varchar(10) DEFAULT NULL,
  `st4arri` varchar(10) DEFAULT NULL,
  `st5` varchar(10) DEFAULT NULL,
  `st5arri` varchar(10) DEFAULT NULL,
  `Ori` varchar(20) NOT NULL,
  `Oriarri` varchar(10) NOT NULL,
  `Dest` varchar(20) NOT NULL,
  `Desarri` varchar(10) NOT NULL,
  `Name` varchar(20) NOT NULL,
  `Mon` varchar(2) NOT NULL,
  `Tue` varchar(2) NOT NULL,
  `Wed` varchar(2) NOT NULL,
  `Thu` varchar(2) NOT NULL,
  `Fri` varchar(2) NOT NULL,
  `Sat` varchar(2) NOT NULL,
  `Sun` varchar(2) NOT NULL
)
```

```sql
CREATE TABLE `seats_availability` (
  `Train_No` int(11) NOT NULL,
  `Train_Name` varchar(20) NOT NULL,
  `doj` date NOT NULL,
  `1A` int(11) NOT NULL,
  `2A` int(11) NOT NULL,
  `3A` int(11) NOT NULL,
  `AC` int(11) NOT NULL,
  `CC` int(11) NOT NULL,
  `SL` int(11) NOT NULL
)
```

```sql
CREATE TABLE `train_list` (
  `Number` int(6) NOT NULL,
  `Name` varchar(20) NOT NULL,
  `Origin` varchar(20) NOT NULL,
  `Destination` varchar(20) NOT NULL,
  `Arrival` varchar(10) NOT NULL,
  `Departure` varchar(10) NOT NULL,
  `Mon` varchar(2) NOT NULL,
  `Tue` varchar(2) NOT NULL,
  `Wed` varchar(2) NOT NULL,
  `Thu` varchar(2) NOT NULL,
  `Fri` varchar(2) NOT NULL,
  `Sat` varchar(2) NOT NULL,
  `Sun` varchar(2) NOT NULL,
  `1A` int(11) NOT NULL,
  `2A` int(11) NOT NULL,
  `3A` int(11) NOT NULL,
  `SL` int(11) NOT NULL,
  `General` int(11) NOT NULL,
  `Ladies` int(11) NOT NULL,
  `Tatkal` int(11) NOT NULL
)
```

```sql
CREATE TABLE `users` (
  `f_name` varchar(50) NOT NULL,
  `l_name` varchar(50) NOT NULL,
  `email` varchar(50) NOT NULL,
  `password` varchar(20) NOT NULL,
  `gender` varchar(10) NOT NULL,
  `marital` varchar(10) NOT NULL,
  `dob` varchar(20) NOT NULL,
  `mobile` bigint(10) NOT NULL,
  `ques` varchar(100) NOT NULL,
  `ans` varchar(100) NOT NULL
)
```

Table Description

Table:- **Users**

This table contains the login information and account details of the registered end used of the Reservation System.

Table: **Booking**

This table shows the complete list of bookings done under every user account. The passenger details are present in this table, and this table is connected with the account that the tickets were booked under. This table is used for viewing the journey details as well as generating the final ticket that can be printed.

Table: **Interlist**

The Interlist table contains the schedule of the journey of the train. This includes what stations the train will halt at and the expected time of arrival at the specific station. It is used to provide the train list available to users based on the station that they search for, according to their travel.

Table: **Seats_Availability**

This table keeps track of the seats that are available to the user for booking. Since there are a limited number of seats in a train, this table will tell what seats are available to the user while booking, so that the user will be able to select the appropriate seat. This contains data for all the classes and after all the seats are full, this table will also keep track of the number of passengers registered as waiting for a certain number of reservations, after which it will stop reservations for that class and show that ticket as unavailable to the user.

Table: **Train_List**

This is the train database that contains all the information regarding the trains available in the system for booking. It contains the train number, name, origin and destination of the train. This table also contains the train schedule in time of the day and on what days the train is operational.

Chapter 4

Implementation

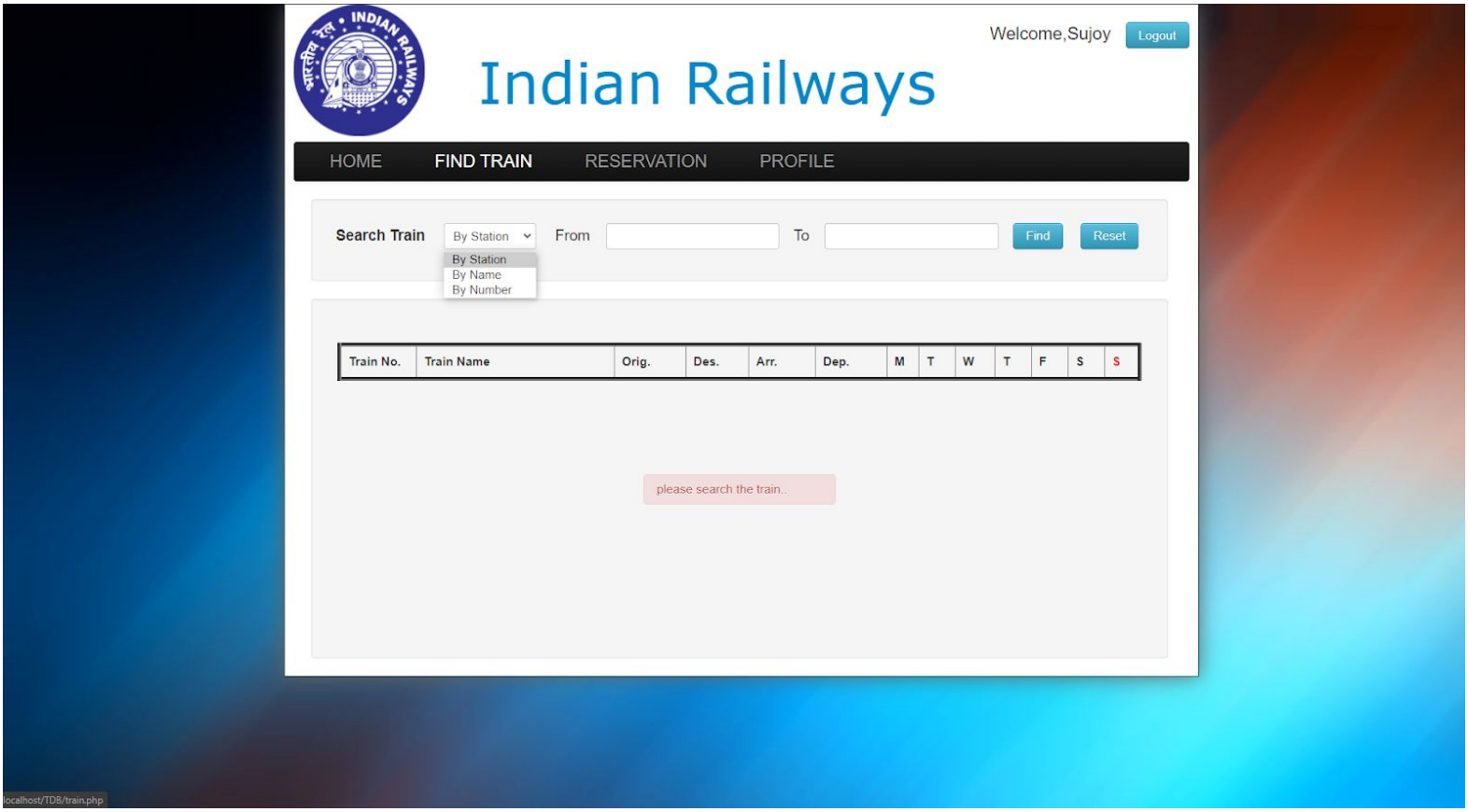
Home:

- At the front of the system, the user is greeted with a welcome screen
- Here, the user can login to the respective account possessed by the user
- If the user does not have an active account, the user can sign up using the sign-up button on the top right corner.
- This screen is mainly composed of the slideshow of images that showcase the features of the railway service
- The right hand section of the body displays the latest news regarding the services

Signup Page:

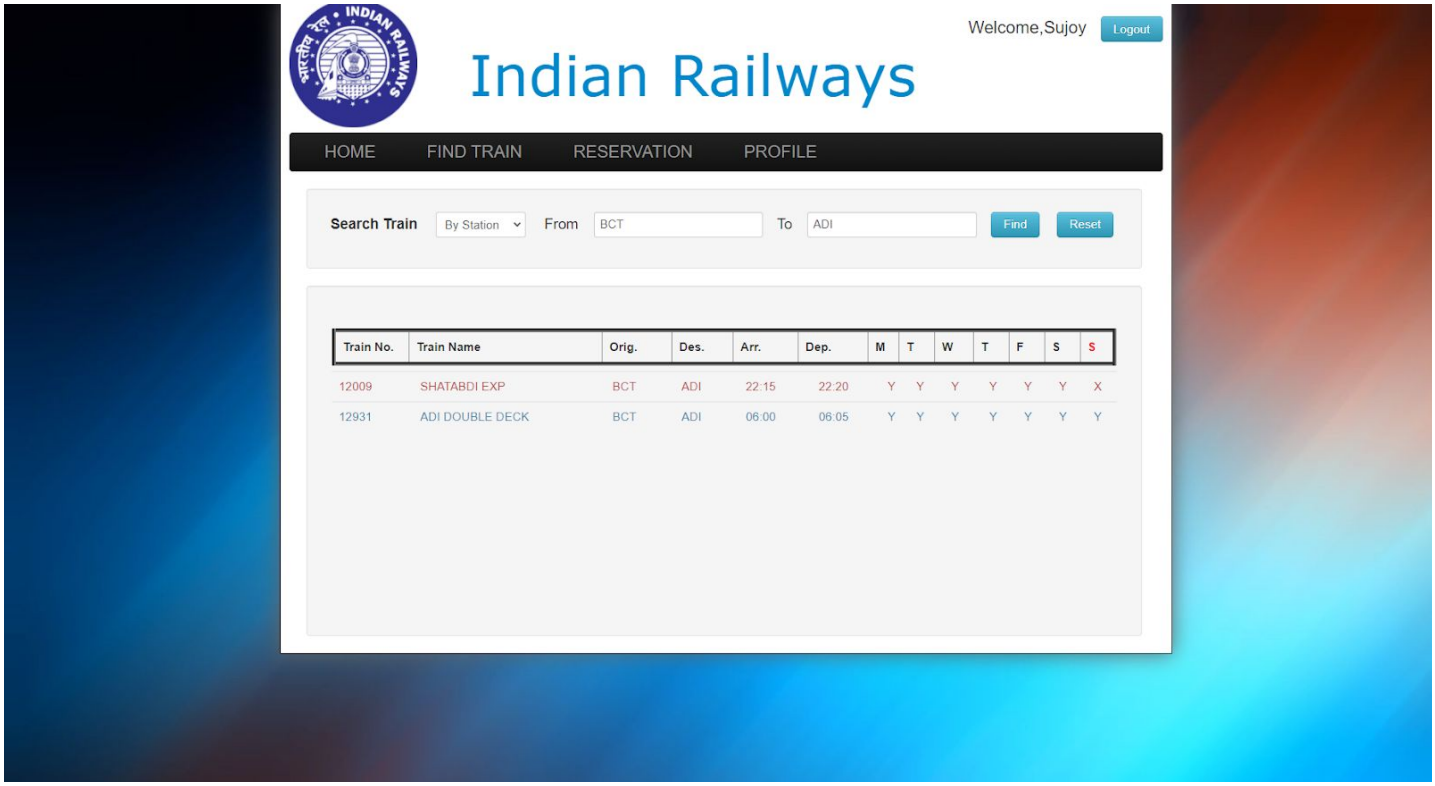
Login Page:

Search Train Module:



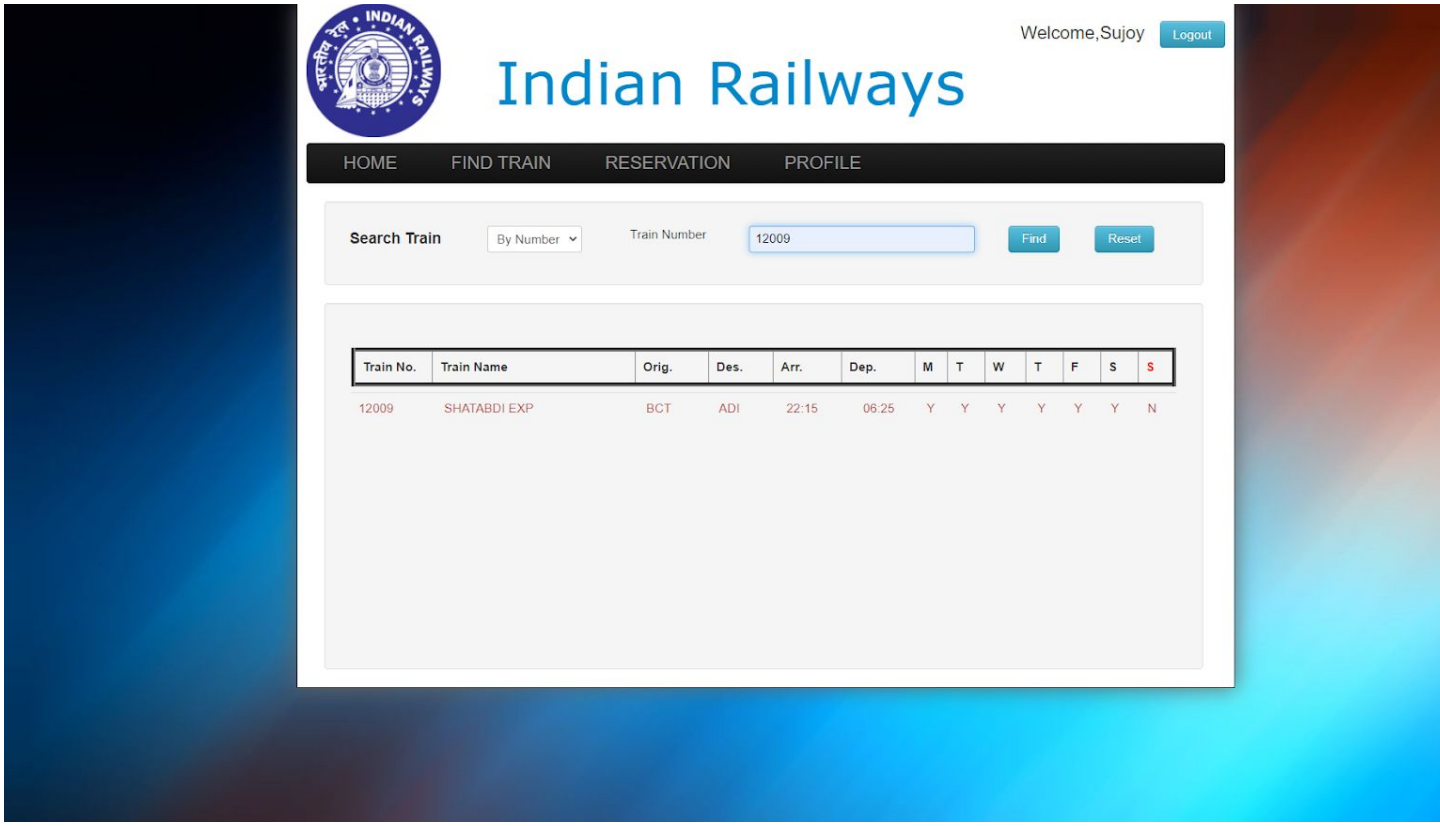
- Here, the user can search for the availability of trains
- The user is given to search according to station, train number or train name.
- Here, the user is able to search for the train availability, schedule and route

Find by Station:



Find By Station:

Find by train Number:



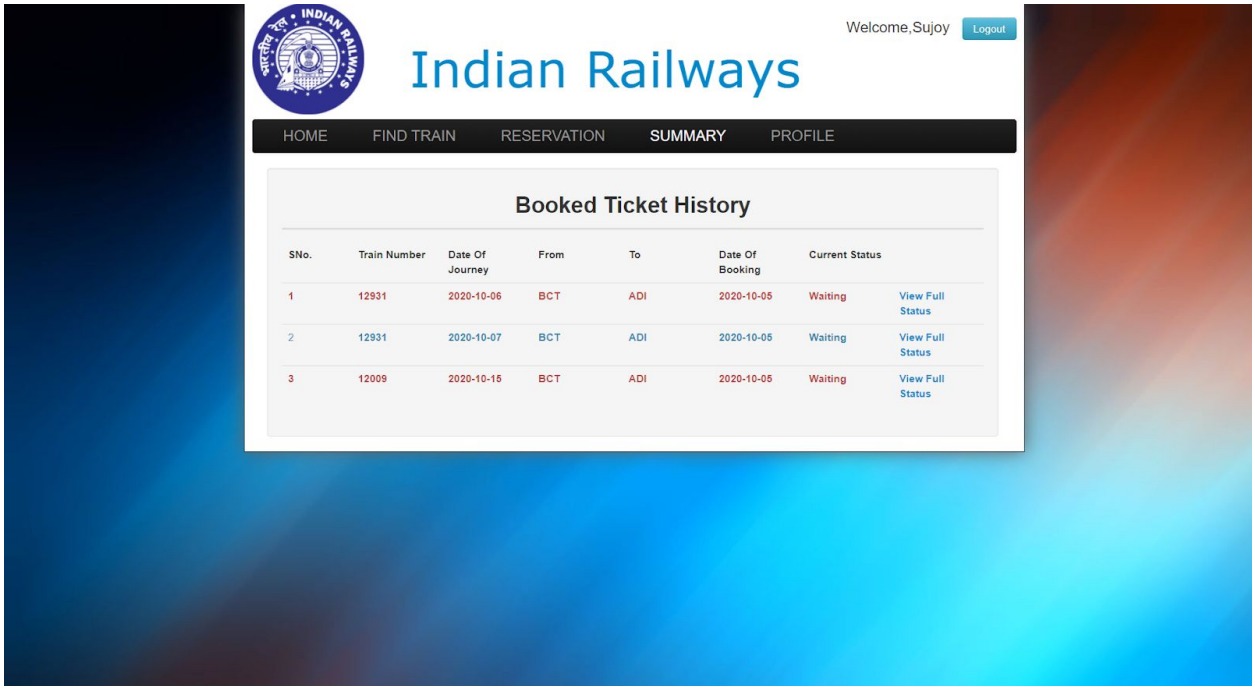
Reservation Module:

Reservation:

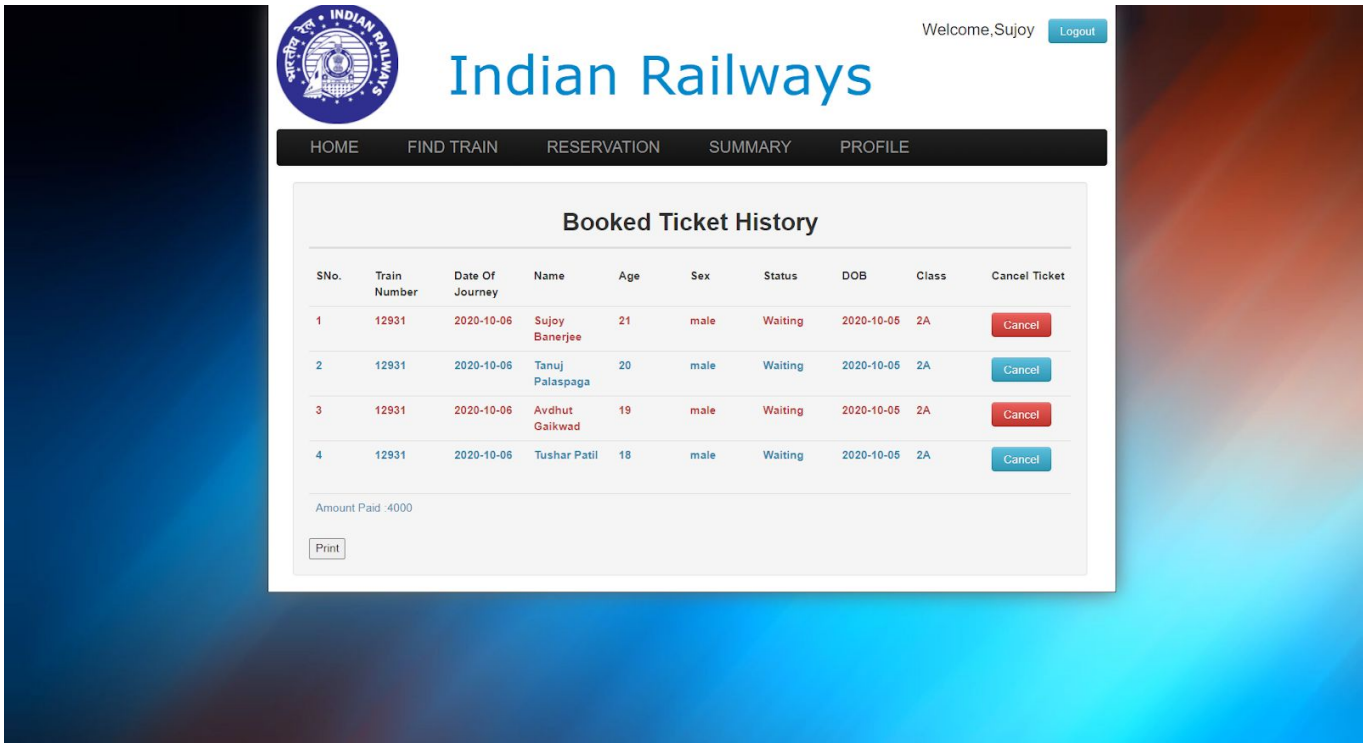
- Trains available for reservation as per user's travel preferences
- The user is asked to enter the source and destination of the journey
- The user can book in three quota options: General, Tatkal and Ladies quota, where availability and pricing differs between each of these options
- Lastly, user

All Passengers details:

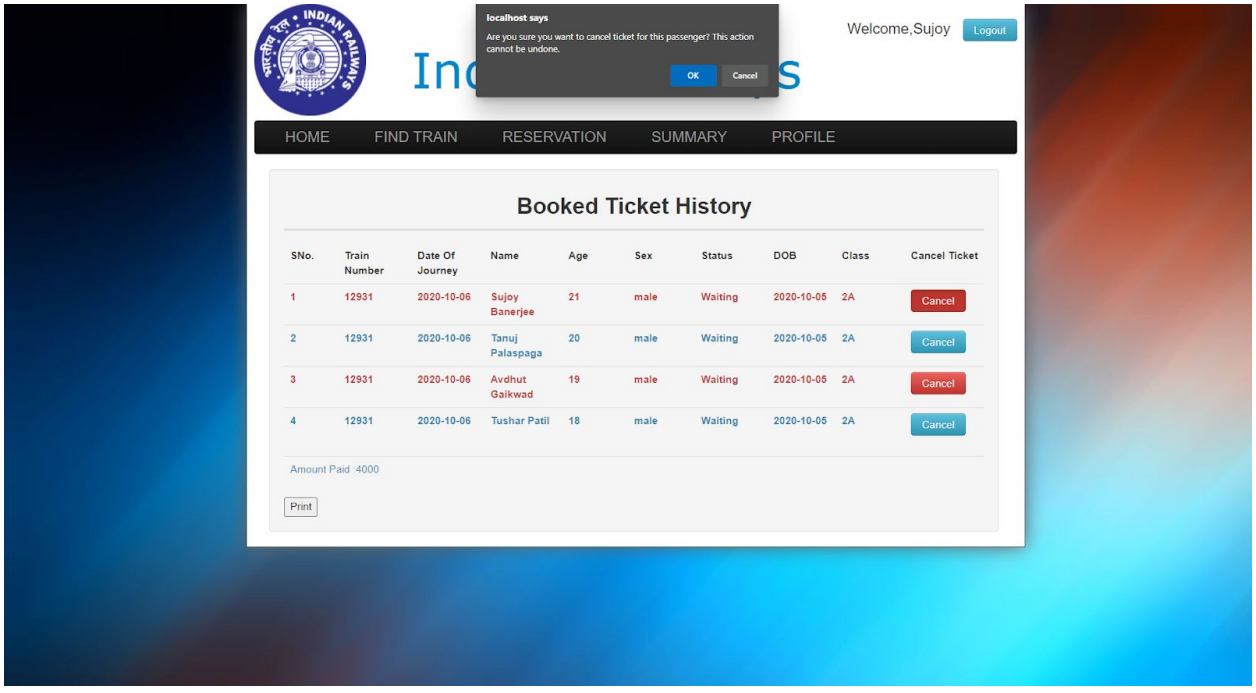
Summary of all tickets booked by current user:



Tickets:



If user wants to cancel a ticket of a particular passenger:



Profile page of Active user:

Option to edit user profile:

Database Connection

The whole database connection is established using PHP (Hypertext Pre-processor). PHP is a general-purpose scripting language especially suited to web development.

$db= mysqli_connect('localhost','root','','mpdbms') or die("Could not connect to database");

Connection is done with PHP through Xampp server.

The front-end is a web page written in HTML
Styling is done using CSS and Bootstrap

The web page is displayed using any web browser and the system can be made active after connecting to the local server,

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Chapter 5

Applications

The overall purpose of DBMS is to allow the users to define, store, retrieve and update the information contained in the database on demand. Information can be anything that is of significance to an individual or organization.

To make ticketing more convenient for travelers, Indian Railways has started an online reservation system, which helps us in booking tickets from the comfort of our homes or offices. ... You will then use this account to book a railway ticket and also cancel a railway reservation that you have made. q

We can check our ticket status,get information about trains,know our leave status without even contacting the owner of the database, and enjoy many other benefits.

In the railway reservation system, the database is required to store the record or data of ticket bookings, status about train's arrival, and departure. Also if trains get late, people get to know it through database updates.

Chapter 6

Conclusion

With all the references and pictures provided we have a broader idea that this railways management system would work efficiently providing every detail and concern appropriately.

It automates many tasks which earlier were mostly done at site and required a big setup and technicians and employees, now with this system it reduces the workload and the no: of employees required at site. Developing this system caters a huge crowd in our country which is mainly dependent on the Railway for its main transportation.

With this project we learned the concepts of SQL and also much more about web servers and got hands on experience with PHP,CSS.

Chapter 7

References

Sites:

- https://www.geeksforgeeks.org/
- www.youtube.com
- https://github.com
- https://www.w3schools.com
- Wikipedia.org

Books:

- Fundamentals of DBMS