

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction to DBMS

A database management system (DBMS) refers to the technology for creating and managing databases. DBMS is a software tool to organize (create, retrieve, update, and manage) data in a database.

The main aim of a DBMS is to supply a way to store up and retrieve database information that is both convenient and efficient. By data, we mean known facts that can be recorded and that have embedded meaning. Usually, people use software such as DBASE IV or V, Microsoft ACCESS, or EXCEL to store data in the form of a database.

#### 1.2 Introduction to SQL

The database is becoming increasingly integrated, and it has created a clamor for standard language, which can be used to work in different types of computing environments. The SQL has proved to be the standard language as it allows programmers or developers to learn one set of commands and use them to create, retrieve, alter, and or transfer data regardless of whether they are working on the PC, a workstation, a mini or mainframe. In this chapter, you will learn about the introduction of the structured query language.

#### 1.3 Overview of the project

- “**Railway Reservation**” is the system where the users can reserve the railway seats. This is the web browser where they can reserve it online. Designed a Railway ticket booking, reservation, and cancellation system for users that wish to travel via the Railways. It is written in [PHP](#) and [MYSQL](#).
- Firstly, the users need to register if they are a new one on the site. They need to fill-up the form like first name, last name, age, mobile, gender, email id, password, etc. After that, they can register and get the username and password.
- If the user has already a username name and password they can log in to the system. They can even check their PNR status.
- They can book the ticket by choosing the destination and submit.

# Railway Management System

---

- For the database connection in the Railway Reservation first we need to create the database named railway.sql in the <localhost/phpmyadmin/> and then we can import the database which is found railway.sql file.

## 1.4 Aim of the project

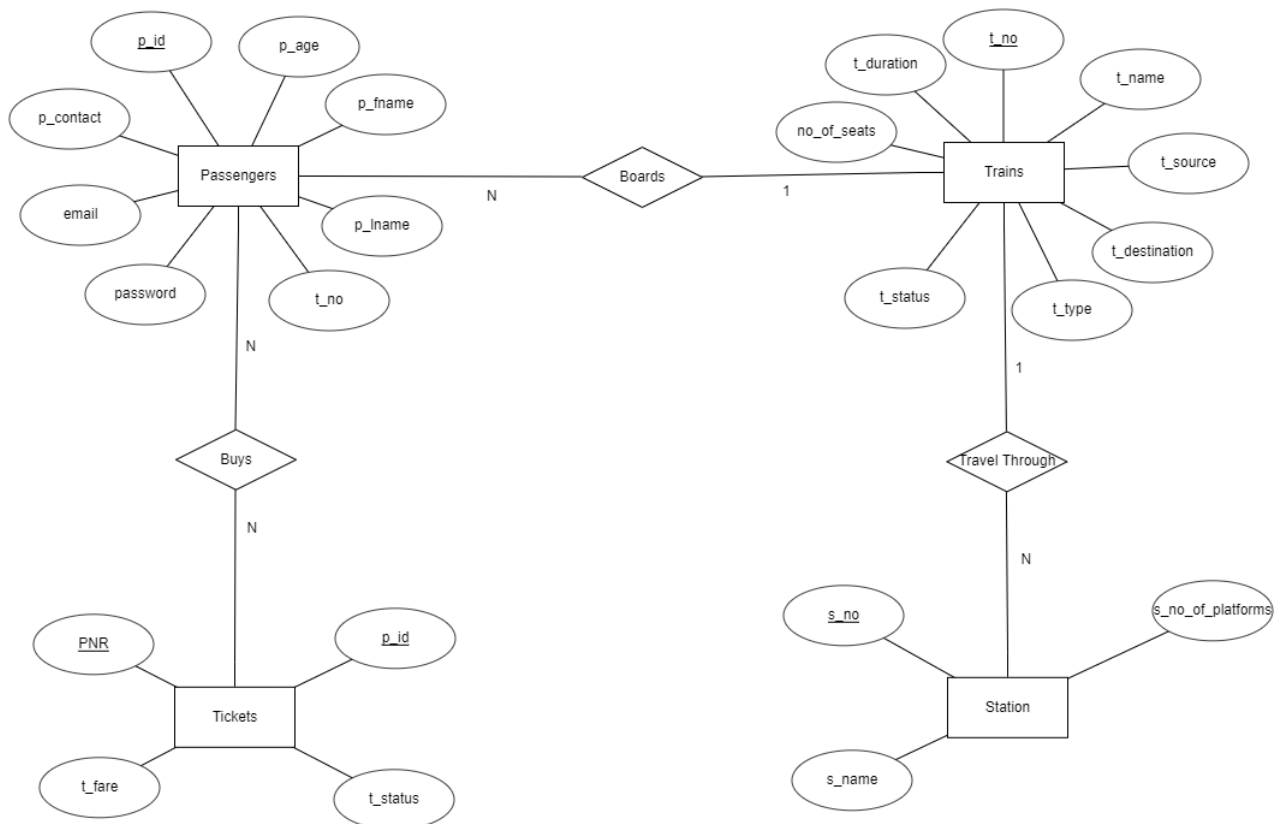
- The aim of case study is to design and develop a database maintaining the records of different trains, train status, and passengers.
- This project contains introduction to the Railway Management System.

## 1.5 Software Requirements

- Operating System
  - Windows 7 or Higher
  - MAC
  - Linux
- Programming Language
  - HTML: Page layout and design
  - CSS: Design
  - JS: Frontend
  - PHP: Backend
  - Bootstrap
  - Java Script
- Tools / software
  - XAMPP
  - Sublime
  - Atom

## CHAPTER 2

### ENTITY RELATIONSHIP DIAGRAM



#### Railway Management System entities and their attributes:

- **Trains Entity :** Attributes of Train are t\_no, t\_name, t\_source, t\_destination, t\_type, t\_status , no\_of\_seats, t\_duration.
- **Tickets Entity:** Attributes of Ticket are PNR, t\_status,t\_fare, p\_id.
- **Passengers Entity :** Attributes of Passengers are p\_id, p\_fname, p\_lname, p\_age, p\_contact, p\_gender, email, password, t\_no.
- **Station Entity :**Attributes of Station are s\_no,s\_name, s\_no\_of\_platforms.

## Railway Management System

---

### Description of Railway Management System Database:

- The details of Train is store into the Train tables respective with all tables.
- Each entity (Passengers, Trains, Station, Tickets) contains primary key and unique keys.
- The entity Passenger has binded with Ticket entity with foreign key(p\_id).
- There is many-to-many available Relationship between Passengers and Tickets.
- There is many-to-one and one-to-many Relationships available between Passengers to Trains and Train to Station Respectively.

## CHAPTER 3

### IMPLEMENTATION

#### 4.1 Table Creation

```
`passengers` ( `p_id` int(30) NOT NULL AUTO_INCREMENT,  
               `p_fname` varchar(30) DEFAULT NULL,  
               `p_lname` varchar(30) DEFAULT NULL,  
               `p_age` varchar(30) DEFAULT NULL,  
               `p_contact` varchar(20) DEFAULT NULL,  
               `p_gender` varchar(30) DEFAULT NULL,  
               `email` varchar(30) NOT NULL,  
               `password` varchar(30) NOT NULL,  
               `t_no` int(11) DEFAULT NULL,  
               PRIMARY KEY (`p_id`),  
               UNIQUE KEY `p_id` (`p_id`)  
             );  
  
`staff` (`s_id` int(11) NOT NULL AUTO_INCREMENT,  
         `s_fname` varchar(10) DEFAULT NULL,  
         `s_lname` varchar(10) DEFAULT NULL,  
         `s_department` varchar(20) NOT NULL,  
         `s_salary` int(11) DEFAULT NULL,  
         PRIMARY KEY (`s_id`)  
       );
```

```
`station` (`s_no` int(11) NOT NULL AUTO_INCREMENT,  
          `s_name` varchar(20) DEFAULT NULL,  
          `s_no_of_platforms` varchar(20) DEFAULT NULL,  
          PRIMARY KEY (`s_no`)  
);  
  
`tickets` (`PNR` decimal(10,0) NOT NULL,  
          `t_status` varchar(20) NOT NULL DEFAULT 'Waiting',  
          `t_fare` int(11) DEFAULT NULL,  
          `p_id` int(20) NOT NULL,  
          PRIMARY KEY (`p_id`),  
          UNIQUE KEY `PNR` (`PNR`)  
);  
  
`trains` (`t_no` decimal(5,0) NOT NULL,  
          `t_name` varchar(30) DEFAULT NULL,  
          `t_source` varchar(30) DEFAULT NULL,  
          `t_destination` varchar(30) DEFAULT NULL,  
          `t_type` varchar(30) DEFAULT NULL,  
          `t_status` varchar(20) DEFAULT 'On time',  
          `no_of_seats` int(11) DEFAULT NULL,  
          `t_duration` int(11) DEFAULT NULL,  
          PRIMARY KEY (`t_no`)  
);
```

# Railway Management System

## 4.2 Table values

### Passengers Table:

The screenshot shows the phpMyAdmin interface for the 'railway' database. The 'passengers' table is selected, and the data is displayed in a table format. The table has 10 columns: p\_id, p\_fname, p\_lname, p\_age, p\_contact, p\_gender, email, password, t\_no, and t\_no. The data is as follows:

p_id	p_fname	p_lname	p_age	p_contact	p_gender	email	password	t_no	t_no
1	Rahul	Dravid	42	9090909090	Male	rahul@dravid.com	123123123	16205	
2	Rahul	Dravid	29	1010101010	Male	qwe@w.cc	123123123	NULL	
4	qwe	qwe	19	1010101010	Male	123@123.cc	123123123	NULL	
5	abc	abc	19	9090909090	Male	abc@g.cc	123123123	12951	
6	sumit	sharma	20	9999999999	Male	sharma@gmail.com	123123123	12951	
7	dhruv	mehta	20	9191919191	Male	dhruv@gmail.com	123123123	16205	
8	manik	vernekar	20	1234567891	Male	manik@gmail.com	123456789	12951	

### Station Table:

The screenshot shows the phpMyAdmin interface for the 'railway' database. The 'station' table is selected, and the data is displayed in a table format. The table has 3 columns: s\_no, s\_name, and s\_no\_of\_platforms. The data is as follows:

s_no	s_name	s_no_of_platforms
1	borivali	8
2	Baroda	6
3	Surat	4

# Railway Management System

## Tickets Table:

The screenshot shows the phpMyAdmin interface for the 'railway' database. The 'tickets' table is selected, and its structure is displayed. The table has four columns: PNR (UNIQUE, decimal), p\_id (PRIMARY, integer), t\_fare (integer), and t\_status (varchar). The data table shows three rows of ticket information.

PNR	t_status	t_fare	p_id
8851599875	Waiting	540	1
1234567890	Confirmed	600	3
8056124359	Confirmed	650	5

## Trains Table:

The screenshot shows the phpMyAdmin interface for the 'railway' database. The 'trains' table is selected, and its structure is displayed. The table has eight columns: t\_no (integer), t\_name (varchar), t\_source (varchar), t\_destination (varchar), t\_type (varchar), t\_status (varchar), no\_of\_seats (integer), and t\_duration (integer). The data table shows five rows of train information.

t_no	t_name	t_source	t_destination	t_type	t_status	no_of_seats	t_duration
4971	garibrath	Udaipur	Jammu Tawi	Express	On time	550	20
12284	duronto	Mumbai central	Ernakulum	AC superfast	On time	800	24
12859	goentanjali	CST	Kolkata	express	On time	500	25
12951	rajdhani	Mumbai Central	Delhi	Superfast	On time	700	15
16205	mysoreexp	Taluppa	Mysore JN	Express	On time	475	21



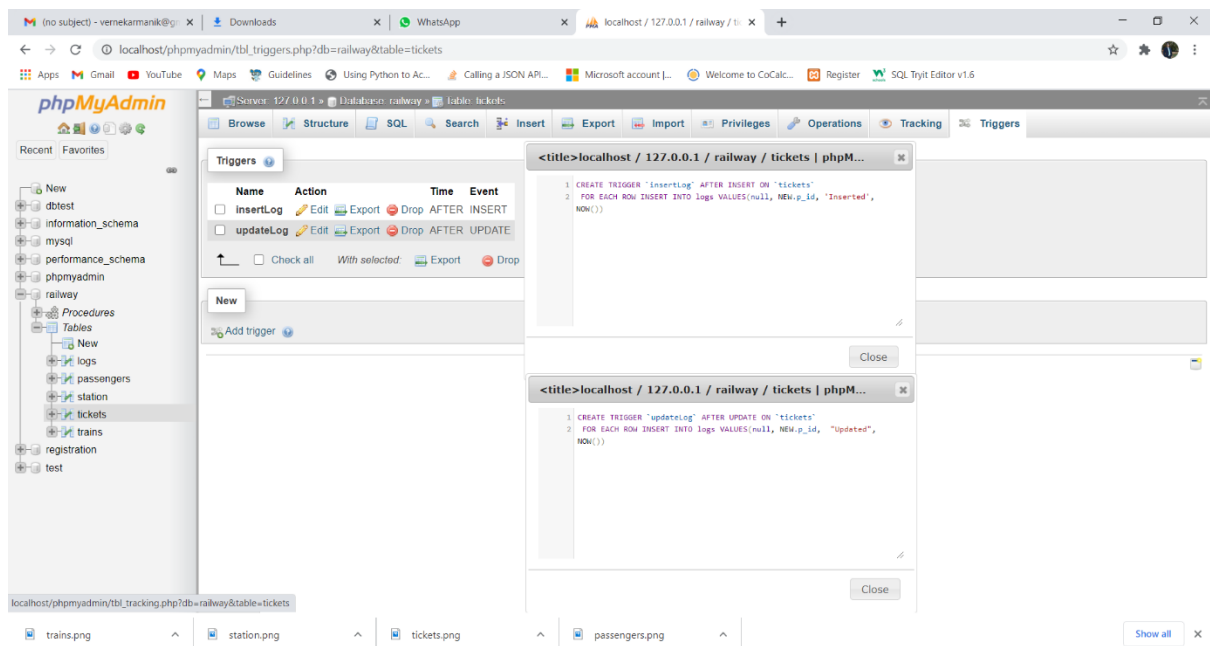
## 4.3 Triggers

### INSERT LOG:

```
CREATE TRIGGER `insertLog` AFTER INSERT ON `tickets`  
FOR EACH ROW INSERT INTO logs VALUES(null, NEW.p_id,  
'Inserted', NOW());
```

### UPDATE LOG:

```
CREATE TRIGGER `updateLog` AFTER UPDATE ON `tickets`  
FOR EACH ROW INSERT INTO logs VALUES(null, NEW.p_id,  
"Updated", NOW());
```



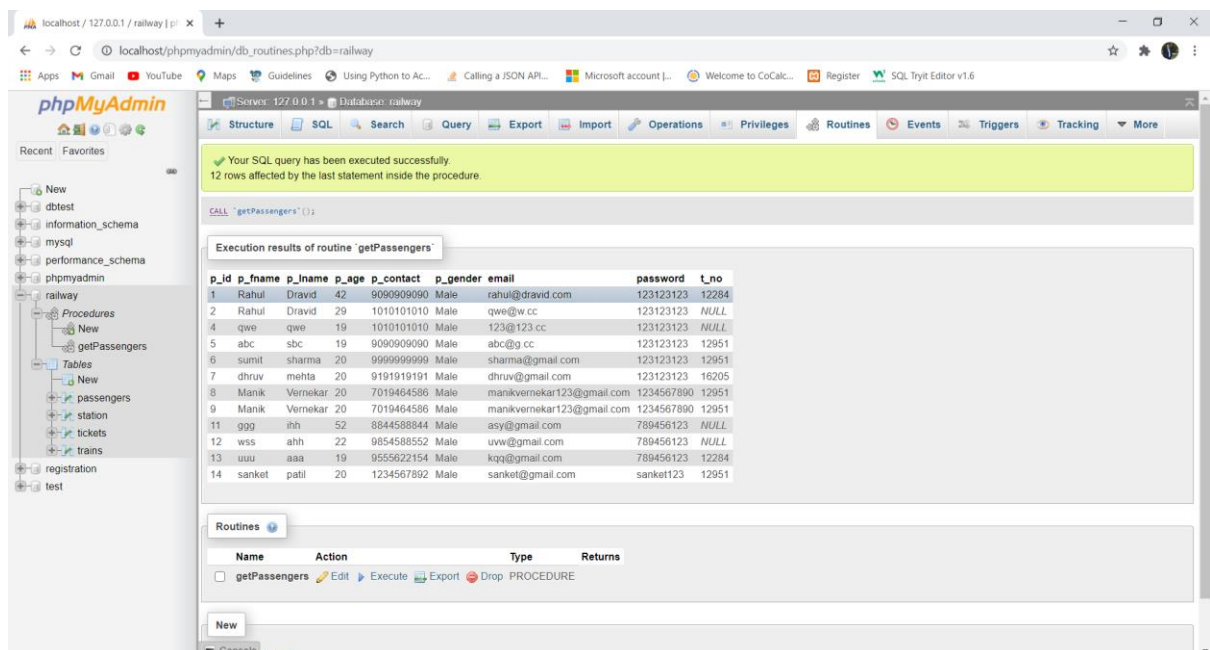
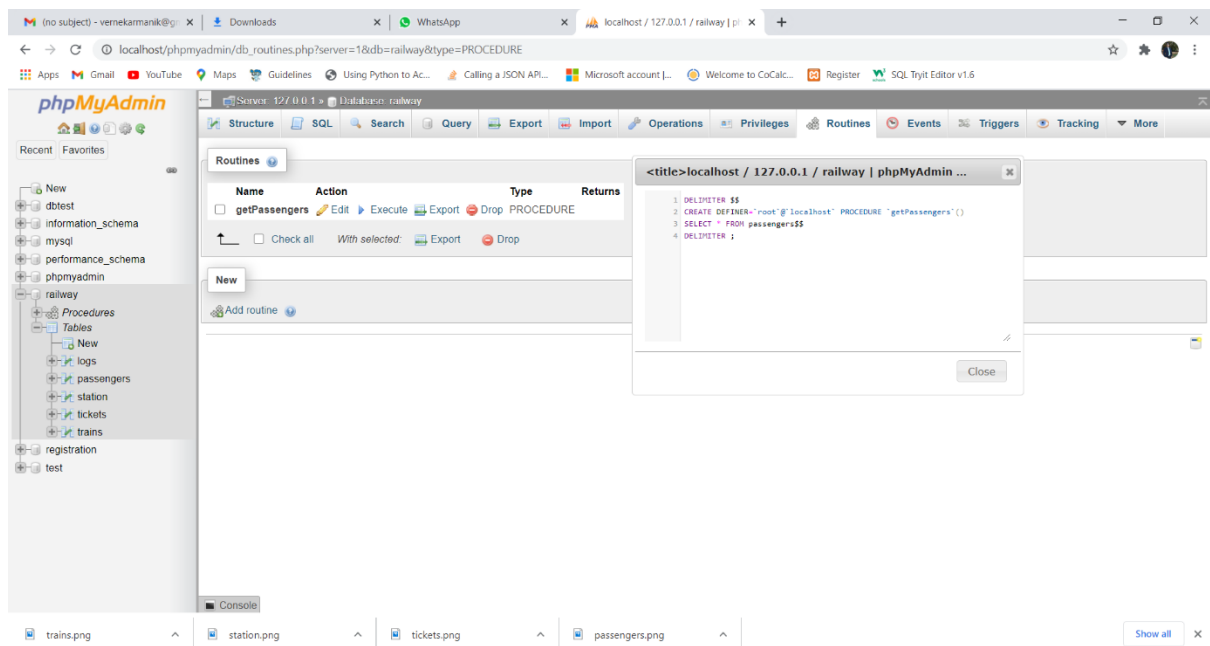
## 4.4 Stored Procedures

DELIMITER \$\$

```
CREATE DEFINER='root'@'localhost' PROCEDURE  
`getPassengers`()
```

```
SELECT * FROM passengers$$
```

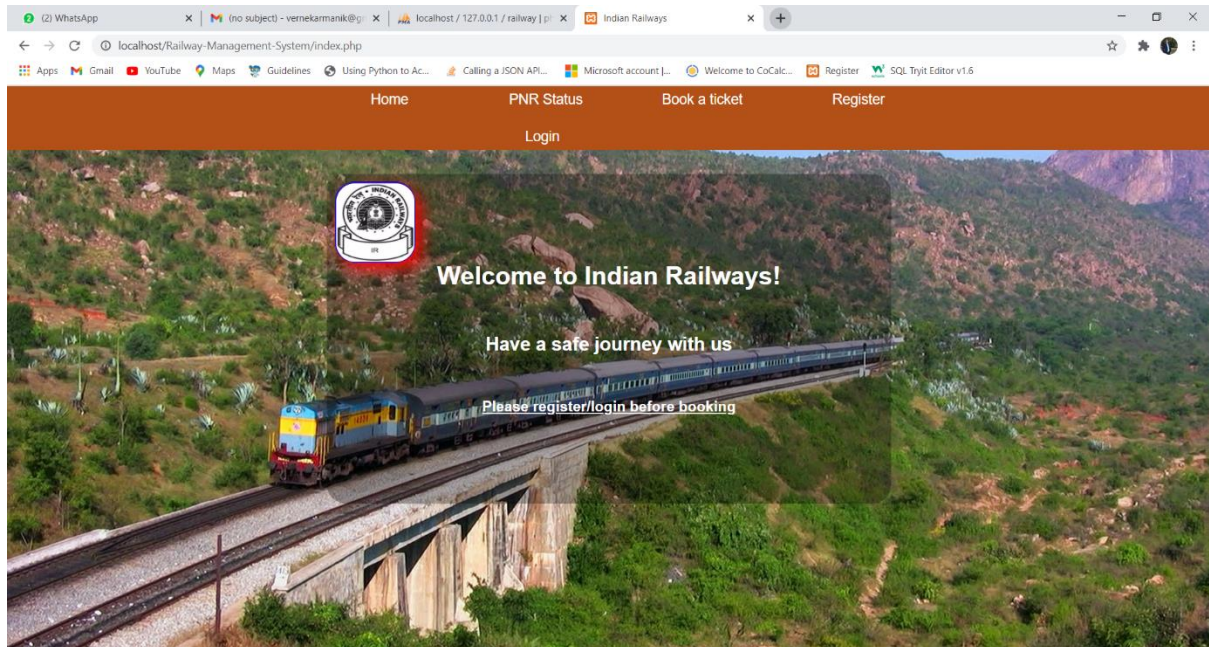
DELIMITER ;



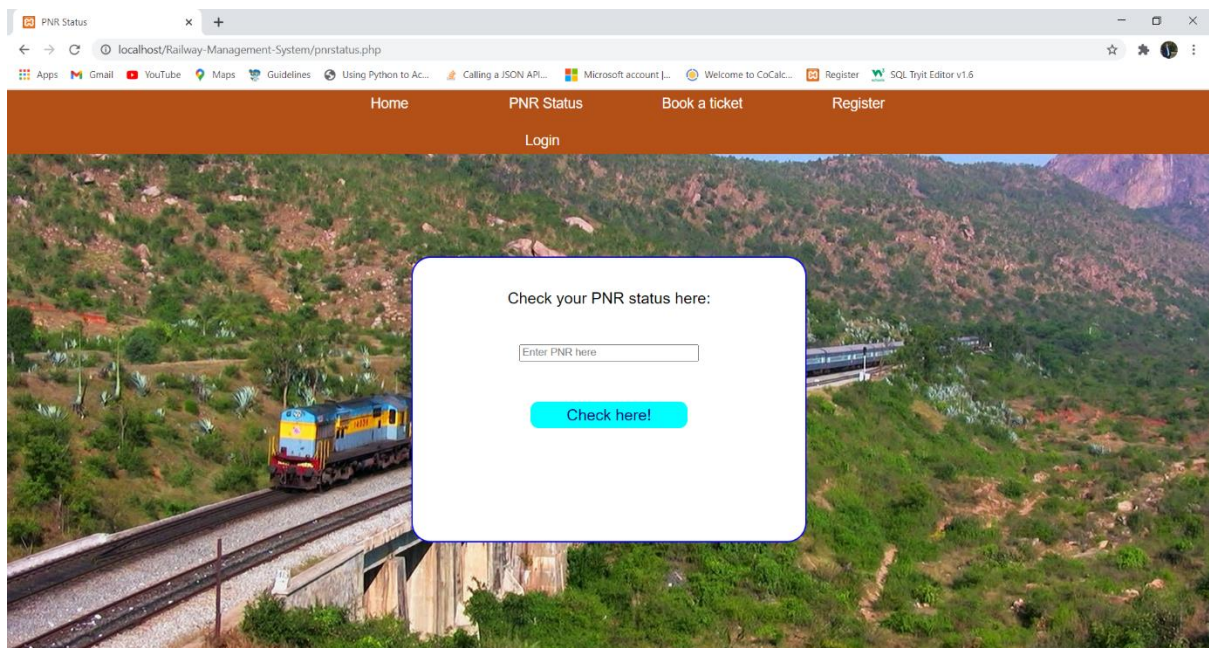
## CHAPTER 4

## RESULTS

### •Webpage for Login or Register.



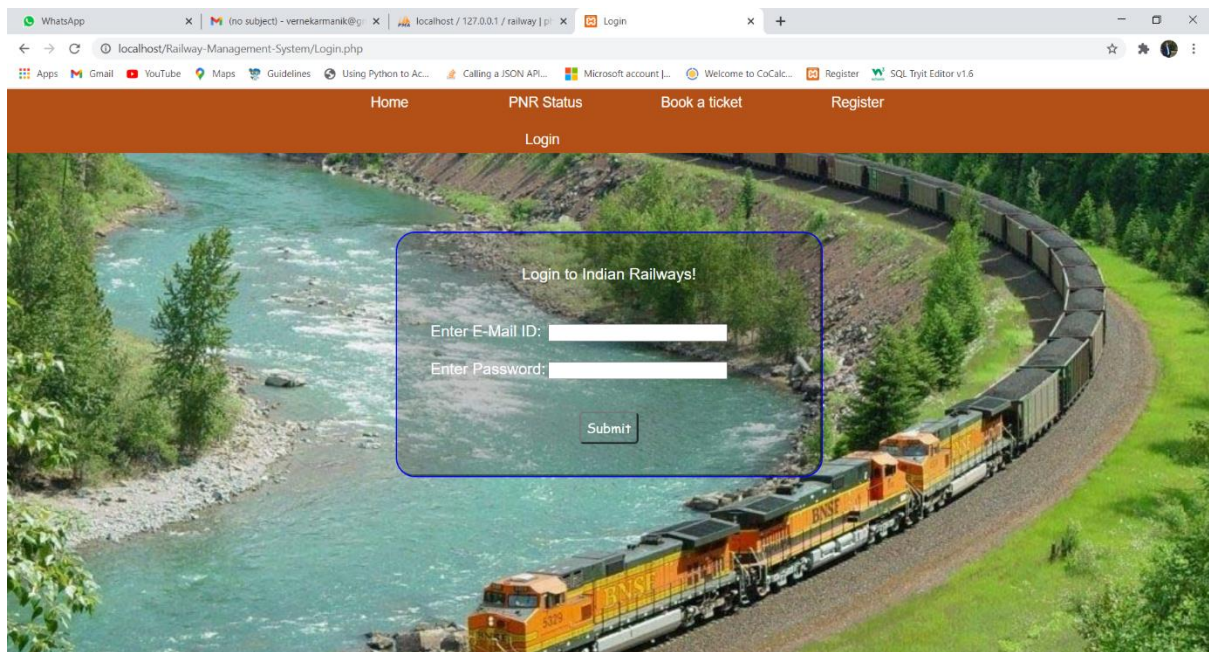
### •Webpage for PNR status before login.





# Railway Management System

- Webpage asking for login credentials.



WhatsApp (no subject) - vernekarmanik@g... localhost / 127.0.0.1 / railway | p... Login

localhost/Railway-Management-System/Login.php

Apps Gmail YouTube Maps Guidelines Using Python to Ac... Calling a JSON API... Microsoft account j... Welcome to CoCalc... Register SQL TryIt Editor v1.6

Home PNR Status Book a ticket Register

Login

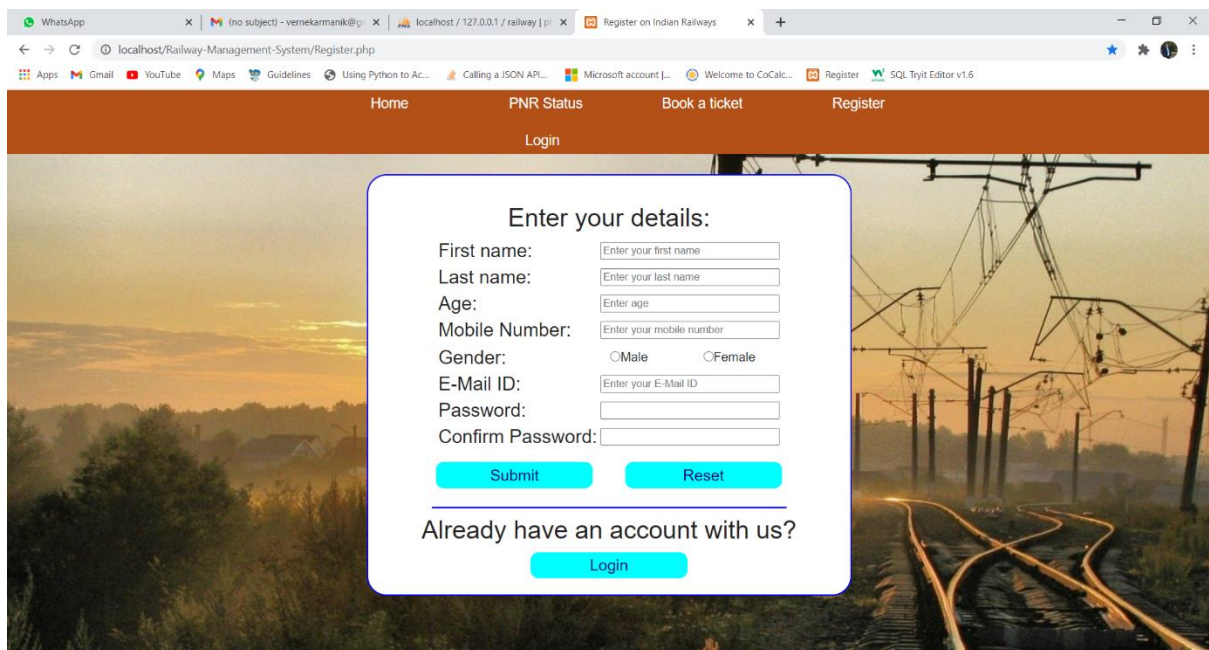
Login to Indian Railways!

Enter E-Mail ID:

Enter Password:

Submit

- Webpage for sign up or Register.



WhatsApp (no subject) - vernekarmanik@g... localhost / 127.0.0.1 / railway | p... Register on Indian Railways

localhost/Railway-Management-System/Register.php

Apps Gmail YouTube Maps Guidelines Using Python to Ac... Calling a JSON API... Microsoft account j... Welcome to CoCalc... Register SQL TryIt Editor v1.6

Home PNR Status Book a ticket Register

Login

Enter your details:

First name:

Last name:

Age:

Mobile Number:

Gender: ☐ Male ☐ Female

E-Mail ID:

Password:

Confirm Password:

Submit Reset

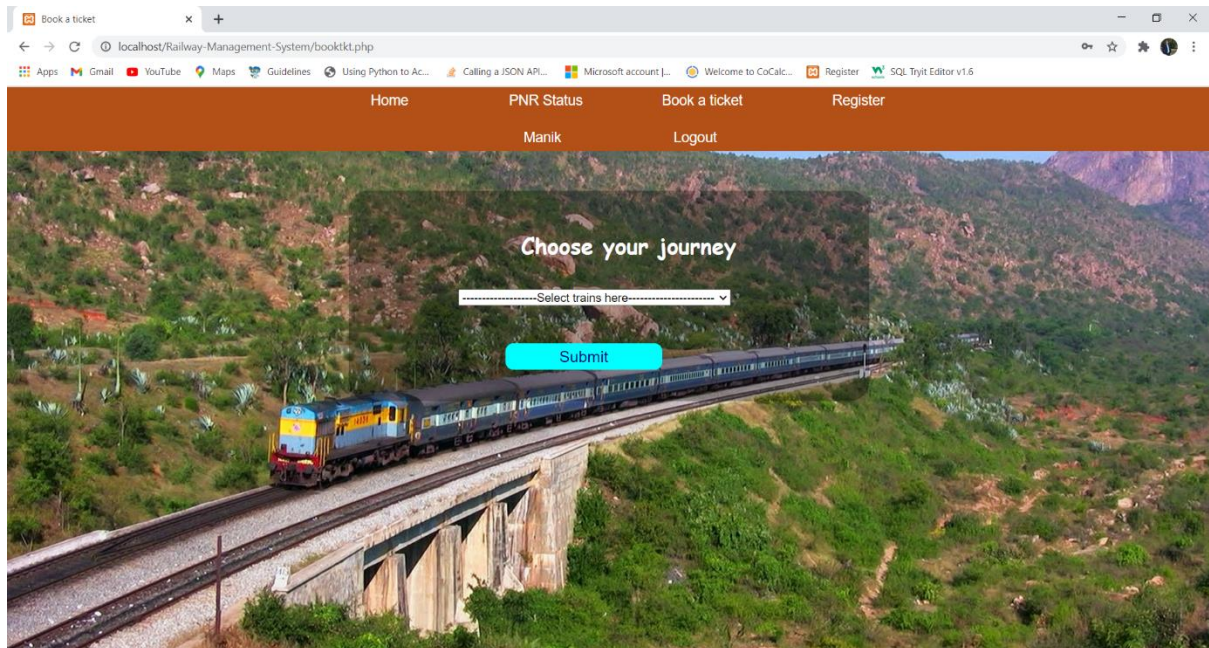
Already have an account with us?

Login

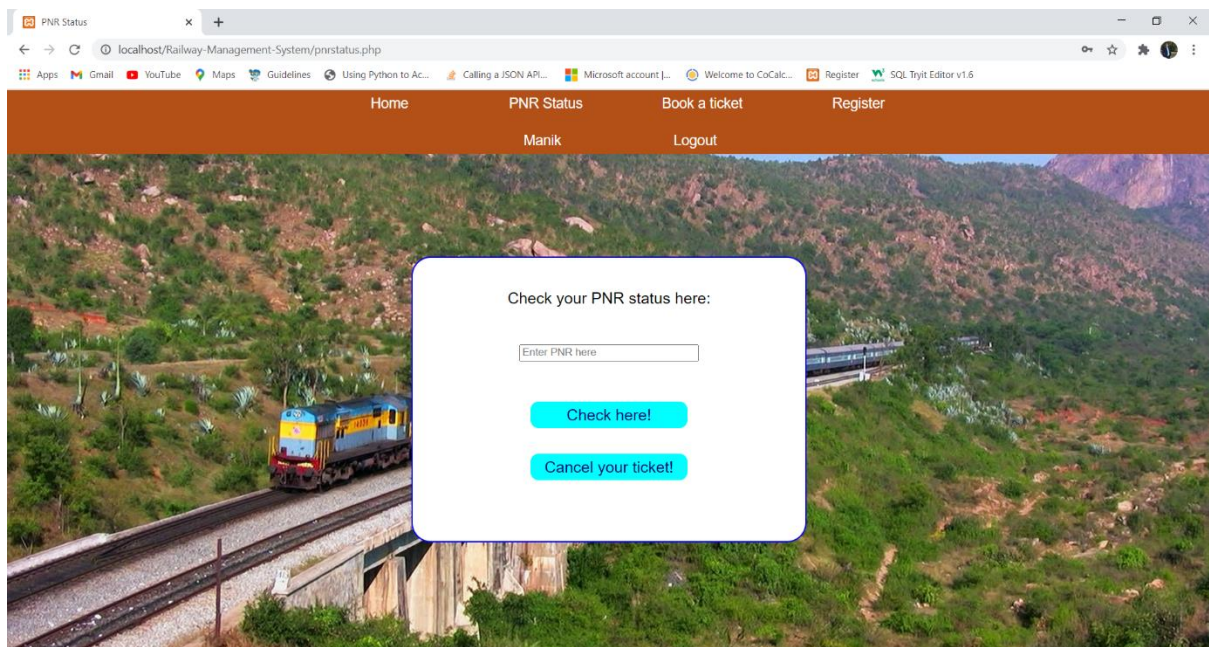


# Railway Management System

- Booking train after logging in.



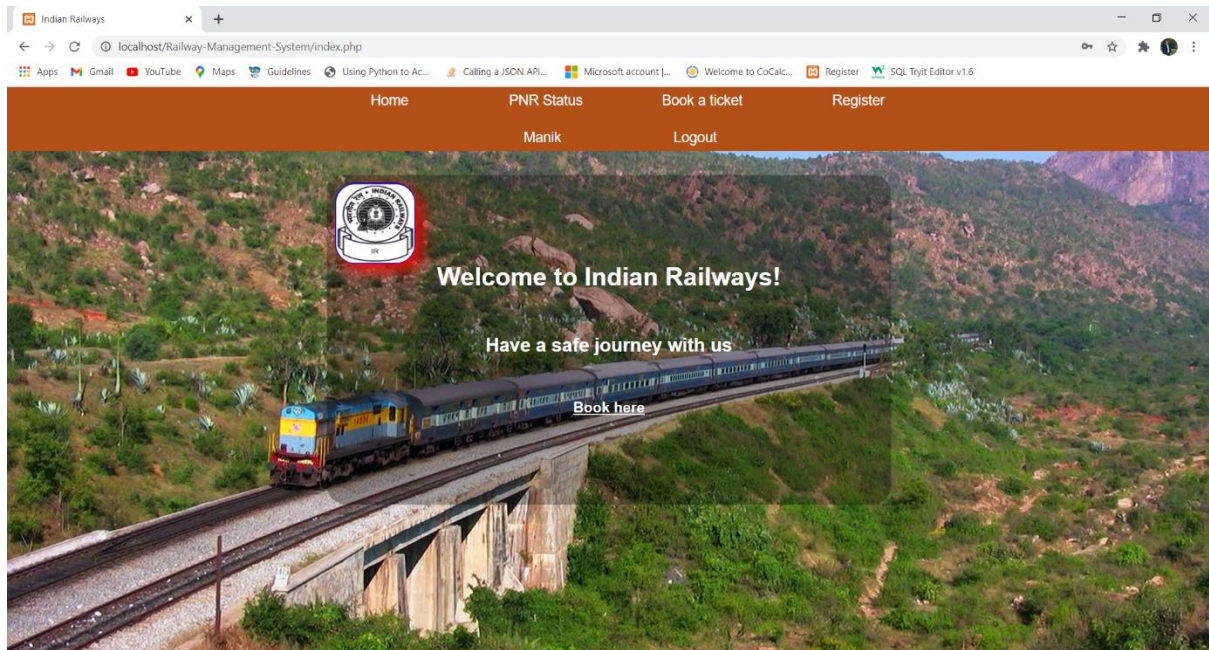
- Webpage used for checking for PNR status and cancellation of Booked tickets.



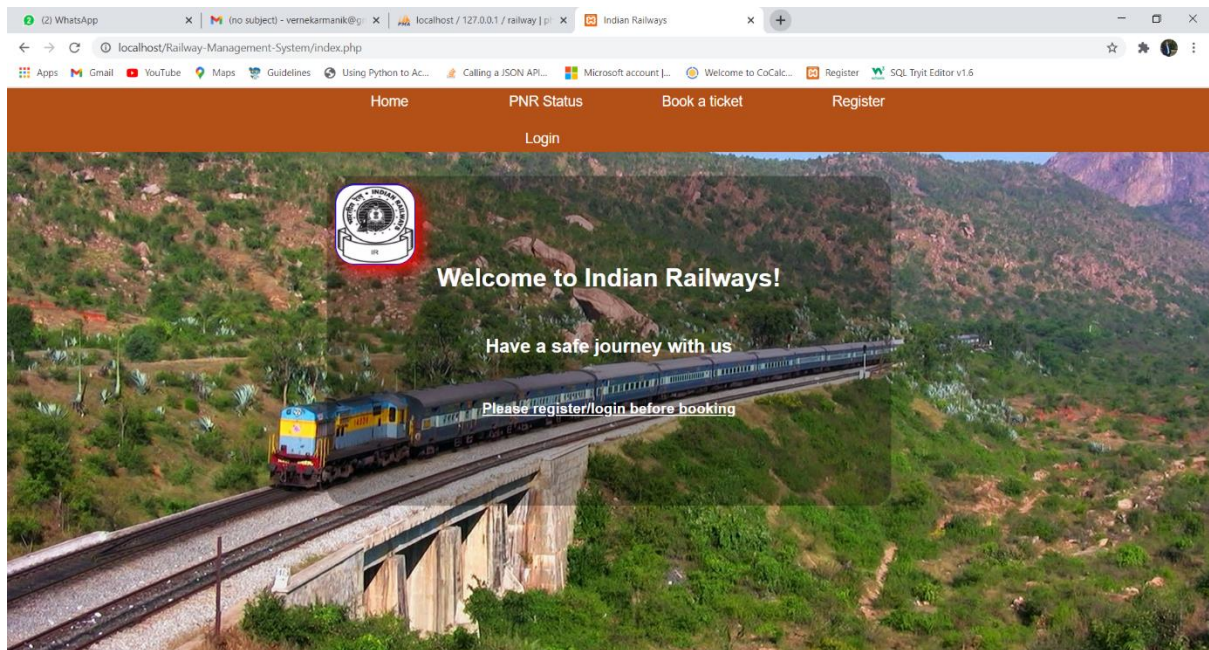


# Railway Management System

## •Home page after Booking a Ticket.



## •Home page after Log out.



## CHAPTER 5

### REFERENCES

- Database systems Models, Languages, Design and Application Programming, Ramez Elmasri and Shamkant B. Navathe, 7<sup>th</sup> Edition, 2017, Pearson.
- Database management systems, Ramakrishnan, and Gehrke, 3<sup>rd</sup> Edition, 2014, McGraw Hill.
- W3 Schools,
- Stack Overflow.