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CS207

PROJECT REPORT



Railway Booking System

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A special acknowledgement goes to all of our group mates who helped in completing the project by exchanging interesting ideas and sharing their experience.

At the end, we want to thank our TA who displayed appreciation to our work and motivated us to continue our work.

Abstract

The railway reservation system facilitates the passengers to enquiry about the trains available on the basis of source, destination and the traveling date, booking and cancellation of tickets, enquiry about the status of the booked ticket, etc. It is the computerized system of reserving the seats of train seats in advance. It is mainly used for a long route. Online reservation has made the process for the reservation of seats very much easier than ever before.

Railway reservation systems, as described above, can lead to error free, secure, reliable and fast management systems. It can assist the user to concentrate on their other activities rather than concentrating on the record keeping. Thus, it will help organizations in better utilization of resources. Administrator of the project, with the help of a password, can enter new train records, display all train records, modify train records and delete train records.

Introduction

We have created a web application where a user can register and login with required information. After login the user can enter information such as source railway station, destination railway station, date, time etc. and check the availability of seats in the displayed list of trains available. Our web application also facilitates online verification of tickets during the journey just by using the seat number and a specific id generated for that journey. We have used HTML, CSS, JAVASCRIPT, PHP and MYSQL to develop our project.

OPERATING SYSTEM TESTED	Windows, Ubuntu, MAC
FRONTEND USED	HTML, CSS, JAVASCRIPT
BACKEND USED	PHP
DATABASE	MySQL
CODE EDITOR USED	VS Code

AIM AND OBJECTIVES :-

The project aims and objectives that will be achieved after completion of this project are discussed. The aims and objectives are as follows:

- ❖ Online Train Reservation.
- ❖ A personal dashboard for each passenger.
- ❖ Facility to show your previous bookings.
- ❖ Facility to download tickets.
- ❖ Facility for Online Verification of tickets.
- ❖ Facility to cancel your booked ticket.

METHODOLOGY

We have basically stored the user data in the form of a relational database system using MySQL and connected it via PHP. Whenever a user first sign-up, all his details are stored in a database which is then used for sign-in by the user. All the train details and the train booked by the user are also stored in a database. Following schema are used for different tables in a database:

```
Railway
Database changed
MariaDB [Railways]> desc signup;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+
| id    | mediumint(9) | NO   | PRI  | NULL    | auto_increment |
| fname | varchar(255) | YES  |      | NULL    |                |
| lname | varchar(255) | YES  |      | NULL    |                |
| phone | varchar(255) | YES  |      | NULL    |                |
| password | varchar(255) | YES  |      | NULL    |                |
+-----+-----+-----+-----+-----+
5 rows in set (0.002 sec)

MariaDB [Railways]> desc traininfo;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+
| travel_id | int(4)    | NO   | PRI  | NULL    | auto_increment |
| train_number | int(20)   | YES  |      | NULL    |                |
| train_name | varchar(255) | YES  |      | NULL    |                |
| day | varchar(255) | YES  |      | NULL    |                |
| dispatch | time      | YES  |      | NULL    |                |
| duration | varchar(255) | YES  |      | NULL    |                |
| _from | varchar(255) | YES  |      | NULL    |                |
| _to | varchar(255) | YES  |      | NULL    |                |
| total_seats | int(3)   | YES  |      | NULL    |                |
| seats_left | int(3)   | YES  |      | NULL    |                |
| price | int(6)    | YES  |      | NULL    |                |
+-----+-----+-----+-----+-----+
11 rows in set (0.001 sec)

MariaDB [Railways]> desc bookings;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+
| booking_id | int(4)    | NO   | PRI  | NULL    | auto_increment |
| id | int(3)    | YES  |      | NULL    |                |
| travel_id | int(4)    | YES  |      | NULL    |                |
| seat_no | int(3)    | YES  |      | NULL    |                |
| travel_date | varchar(12) | YES  |      | NULL    |                |
+-----+-----+-----+-----+-----+
5 rows in set (0.002 sec)

MariaDB [Railways]> |
```

We created a dummy data of trains in a database which is shown below,

travel_id	train_number	train_name	day	dispatch	duration	_from	_to	total_seats	seats_left	price
1	132342	travel_exp	tuesday	10:10:00	2 hours	Mandi	Delhi	200	195	2344
2	132342	travel_exp	thursday	10:20:00	2 hours	Mandi	Delhi	200	195	3243
3	123456	KanpurDelhisuperfast	monday	10:10:00	2 hours	Kanpur	Delhi	200	195	750
4	123456	KanpurDelhisuperfast	wednesday	18:50:00	2 hours	Delhi	Kanpur	200	195	750
5	123456	KanpurDelhisuperfast	friday	10:10:00	2 hours	Kanpur	Delhi	200	195	750
6	123456	KanpurDelhisuperfast	sunday	18:50:00	2 hours	Delhi	Kanpur	200	195	750
7	987623	howray express	tuesday	01:15:00	21 hours	Mandi	Calcutta	200	195	750
8	987623	howray express	wednesday	01:15:00	21 hours	Mandi	Calcutta	200	195	750
9	456781	Golden Temple	friday	09:05:00	13 hours	Delhi	Mumbai	200	195	649
10	456781	Golden Temple	saturday	02:05:00	13 hours	Mumbai	Mumbai	200	195	649
11	456711	hyper loop express	monday	00:00:00	4 hour 30 minutes	Delhi	Calcutta	200	195	999
12	456711	hyper loop express	monday	12:00:00	4 hour 30 minutes	Calcutta	Delhi	200	195	999
13	456711	hyper loop express	thursday	00:00:00	4 hour 30 minutes	Delhi	Calcutta	200	195	999
14	456711	hyper loop express	thursday	12:00:00	4 hour 30 minutes	Calcutta	Calcutta	200	195	999
15	333312	kamand dilli express	sunday	15:10:00	3 hours	Mandi	Delhi	200	195	320
16	333312	kamand dilli express	saturday	15:10:00	3 hours	Mandi	Delhi	200	195	320
17	122212	east express	tuesday	18:40:00	18 hours	Madras	Calcutta	200	195	340
18	122212	east express	wednesday	20:40:00	18 hours	Madras	Calcutta	200	195	340
19	122212	east express	thursday	22:40:00	18 hours	Madras	Calcutta	200	195	340
20	232312	up-hp superfast	monday	20:20:00	5 hours	Mandi	kanpur	200	195	420
21	232312	up-hp superfast	tuesday	18:20:00	5 hours	Mandi	kanpur	200	195	420
22	456712	ultra fast express	monday	10:00:00	6 hours 30 minutes	Mumbai	Mandi	200	195	299
23	456712	ultra fast express	monday	22:00:00	6 hours 30 minutes	Mandi	Mumbai	200	195	299
24	456712	ultra fast express	thursday	10:00:00	6 hours 30 minutes	Mumbai	Mandi	200	195	299
25	456712	ultra fast express	thursday	22:00:00	6 hours 30 minutes	Mandi	Mumbai	200	195	299
26	456711	ultra fast hyper loop express	monday	00:00:00	3 hours 51 minutes	Mumbai	Calcutta	200	195	799
27	456711	ultra fast hyper loop express	monday	12:00:00	3 hours 51 minutes	Calcutta	Mumbai	200	195	799
28	456711	ultra fast hyper loop express	saturday	00:00:00	3 hours 51 minutes	Mumbai	Calcutta	200	195	799
29	456711	ultra fast hyper loop express	saturday	12:00:00	3 hours 51 minutes	Calcutta	Mumbai	200	195	799
30	456711	ultra fast hyper loop express	Wednesday	00:00:00	3 hours 51 minutes	Mumbai	Calcutta	200	195	799
31	456711	ultra fast hyper loop express	Wednesday	12:00:00	3 hours 51 minutes	Calcutta	Mumbai	200	195	799

31 rows in set (0.001 sec)

These train details are used which are available for a user in our web application.

Then we performed various joins to get the data of trains booked by the user and details of the user. The layout is as shown below:

id	fname	lname	phone	train_number	train_name	travel_id	travel_date	day	_from	_to	dispatch	duration	seat_no	price	
3	Amit	Kumar	6869726182	132342	travel_exp	2	2021-11-14	thursday	Mandi	Delhi	10:20:00	2 hours	1	3243	
3	Amit	Kumar	6869726182	122212	east express	ninfa	where id = 3) B;	tuesday	Madras	Calcutta	18:40:00	18 hours	3	340	
3	Amit	Kumar	6869726182	123456	KanpurDelhisuperfast	3	2021-11-13	monday	Kanpur	Delhi	10:10:00	2 hours	3	750	
3	Amit	Kumar	6869726182	122212	east express	booked	19	2021-11-14	thursday	Madras	Calcutta	22:40:00	18 hours	5	340
3	Amit	Kumar	6869726182	456781	Golden Temple	9	2021-11-19	friday	Delhi	Mumbai	09:05:00	13 hours	6	649	

5 rows in set (0.001 sec)

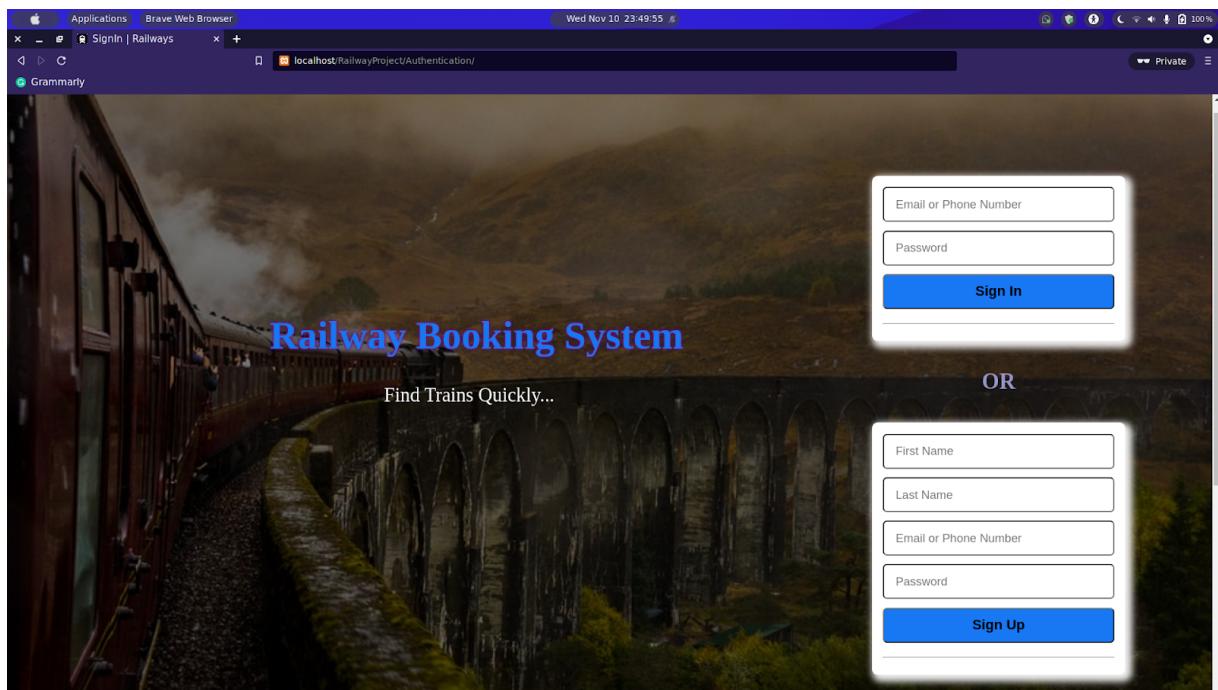
Hence, we get the desired output.

RESULTS

Our web application was supposed to work in such a way that a user can register and login with required information. After login the user can enter information such as source railway station, destination railway station, date, time etc. and check the availability of seats

Here are the results of the application tested by our team members showing different aspects of the railway booking system.

1.) Overview of login/signup page for user.



2.) Login using credentials to view information about the user.



3.) On the booking page user is redirected to fill certain information such as source railway station, destination railway station, date and day which will give you the list of all available trains for that particular date and

destination which can be booked by clicking the book now button (if seats are available which is shown in the information table). Users can also cancel the ticket by clicking the cancel now button.

The screenshot shows the iRailway booking interface. At the top, there's a search form titled "Find Your Train" with fields for "From" (Delhi), "To" (Delhi), and "Date" (dd/mm/yyyy). Below the search form is a large image of a yellow locomotive. The main area is titled "Your Bookings" and displays three separate booking cards:

- Happy Journey** (Date: 2021-11-14)

Name: Amit Kumar	Contact: +91 6869726182
Train Name: travel_exp	Train Number: 12342
Travel ID: 2	Day: Thursday
From: Mandi	To: Delhi
Dispatch Time: 10:20:00	Duration: 2 hours
Seat Number: 1	Price: 3243₹

 Digitally Verified
- Happy Journey** (Date: 2021-11-15)

Name: Amit Kumar	Contact: +91 6869726182
Train Name: east express	Train Number: 12212
Travel ID: 17	Day: Tuesday
From: Madras	To: Calcutta
Dispatch Time: 10:40:00	Duration: 18 hours
Seat Number: 3	Price: 340₹

 Digitally Verified
- Happy Journey** (Date: 2021-11-13)

Name: Amit Kumar	Contact: +91 6869726182
Train Name: KanpurDelhisuperfast	Train Number: 123456
Travel ID: 3	Day: Monday
From: Kanpur	To: Delhi
Dispatch Time: 10:10:00	Duration: 2 hours
Seat Number: 3	Price: 750₹

 Digitally Verified

Each booking card includes "Download Ticket" and "Cancel Ticket" buttons.

The screenshot shows the "List of Trains" page. At the top, there's a search bar with the query "from=Delhi&to=Mumbai&date=2021-11-19&day=Friday&refresh=1&user_id=3". Below the search bar is a search icon and a "Private" button. The main area is titled "List of Trains" and displays a single train entry:

Friday	Date: 2021-11-19
Train Name: Golden Temple	Train Number: 456781
From: Delhi	To: Mumbai
Dispatch Time: 09:05:00	Duration: 13 hours
Price: 649	Seats Left: 195

A "BOOK NOW" button is located at the bottom right of the card. The background features a large image of a yellow locomotive.

4.) After booking a railway ticket you will be redirected to your railway ticket which will have your unique travel id and seat number.

The screenshot shows the iRailway website interface. At the top, there's a search bar with the URL `localhost/RailwayProject/Home/index.php?user_id=3&travelId=9&refresh=2&date=2021-11-19&seats_left=195&seats_total=200#`. Below the search bar, there's a "Find Your Train" section with dropdown menus for "From" (Delhi), "To" (Delhi), "Date" (dd/mm/yyyy), and a "Find Now" button. To the right, a box displays the user's information: Name: Amit Kumar and Phone: 6869726182. Below this, there's a "Your Bookings" section with three cards:

- Happy Journey** (Date: 2021-11-14)

Name: Amit Kumar	Contact: +91 6869726182
Train Name: travel_exp	Train Number: 122242
Travel ID: 3	Date: Thursday
From: Mandi	To: Delhi
Dispatch Time: 10:20:00	Duration: 2 hours
Seat Number: 1	Price: 324₹

 Digitally Verified
- Happy Journey** (Date: 2021-11-15)

Name: Amit Kumar	Contact: +91 6869726182
Train Name: east express	Train Number: 122212
Travel ID: 17	Date: Tuesday
From: Madras	To: Calcutta
Dispatch Time: 18:40:00	Duration: 18 hours
Seat Number: 3	Price: 340₹

 Digitally Verified
- Happy Journey** (Date: 2021-11-13)

Name: Amit Kumar	Contact: +91 6869726182
Train Name: KanpurDelhisuperfast	Train Number: 123456
Travel ID: 3	Date: Monday
From: Kumar	To: Delhi
Dispatch Time: 10:10:00	Duration: 2 hours
Seat Number: 3	Price: 750₹

 Digitally Verified

5.) You can also download the ticket by clicking the download button which gives you a brief preview of the ticket.

Two examples of digital train tickets for Happy Journey, dated 2021-11-15. Both tickets include the following details:

Happy Journey (Date: 2021-11-15)

Contact: +91 6869726182
Train Number: 122212
Day: Tuesday
To: Calcutta
Duration: 18 hours
Price: 340₹

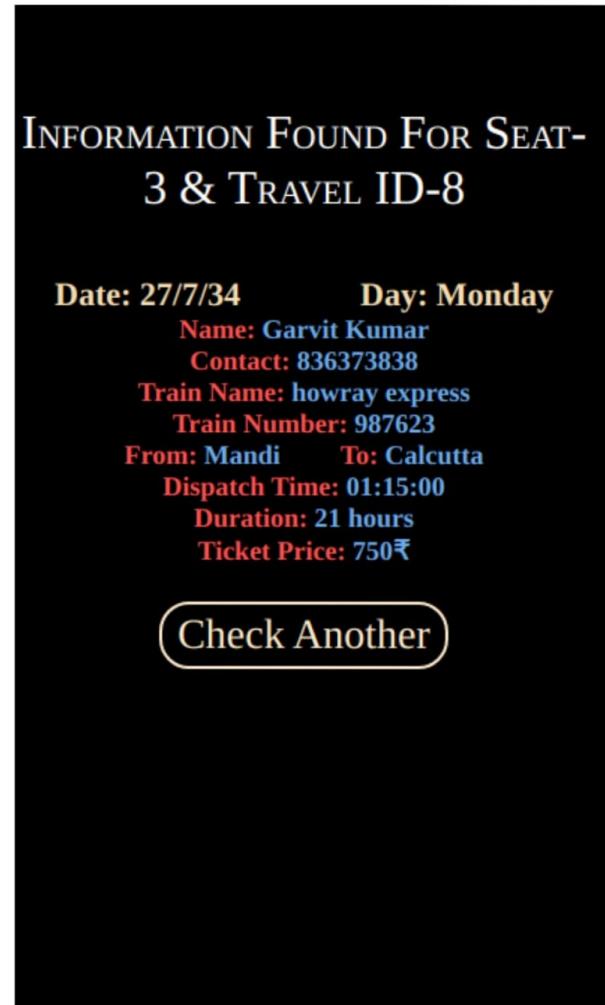
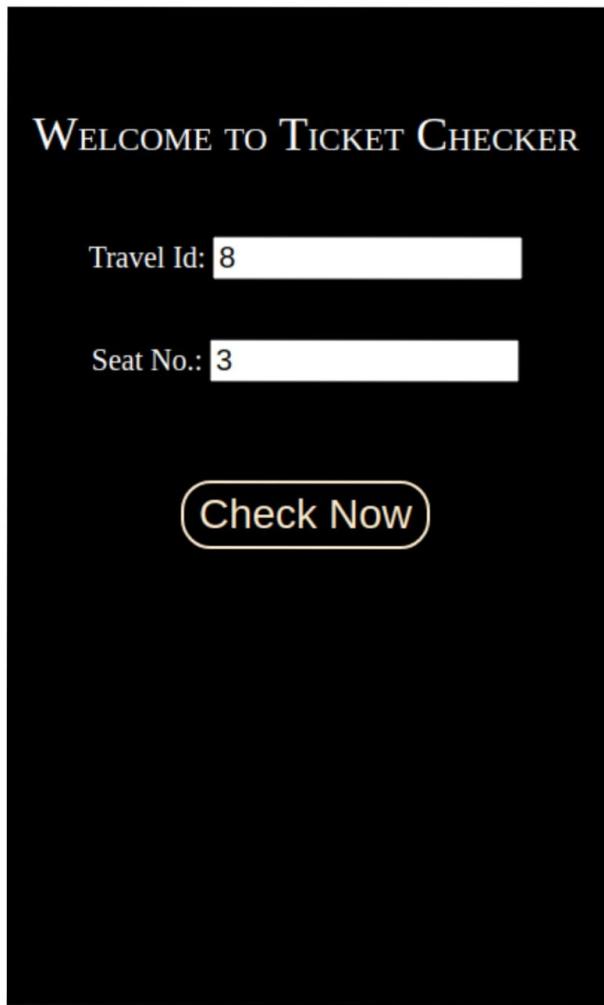
Digitally Verified

QR Code

Instructions

- Ticket is **not** transferable. Issued subject to travel restrictions in force and rules notified in Time Table & Tariffs. The Season Ticket is **invalid** without identity card. Season Ticket is **invalid** without the Holders name, age and signature. Senior Citizen availing concession should carry **proof of age**.
- Free allowance on Season Ticket:** 10 Kgs on Second Class & 15 Kgs on First Class.
- Free allowances on journey Ticket:** 35 Kgs on Second Class & 50 Kgs on First Class

6.) The ticket has a QR code which can be used to confirm your ticket using your unique seat number and travel id which is given on your E-ticket.



CONCLUSION

We have successfully applied the theoretical knowledge of HTML, CSS, JavaScript, PHP and MySQL to develop a platform which facilitates the traveller to find the trains from a source to a given destination on any given date and also to book or cancel their railway tickets. The website was tested over multiple operating systems and the result was satisfying. This online ticket booking service keeps track of passengers with a unique user id assigned when any specific user registers to the site. A passenger can download the ticket which is digitally verified and has a QR Code and can query for availability of seats. It helps the ticket checker in verification of a certain ticket.