



## CSE370 : Database Systems

### Project Report

### Project Title : Railway Management System

**Group No : 12, CSE370 Lab Section : 04, Summer 2023**

ID	Name	Contribution
21201327	MD. Kawsar Habib	User registration, user login, search train, fare calculation
21201428	Md. Mubashirul Islam	Train selection, ticket booking, travel history, user information,

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## **Introduction**

The Railway Database Management System is a comprehensive software solution designed to enhance the efficiency and convenience of railway services. This project aims to streamline various aspects of railway operations, offering features like user registration, user login, train search, fare calculation, train selection, ticket booking, travel history tracking, and user information management.

## **Project Features**

### **User Registration and Login:**

The Railway DBMS provides a user-friendly platform for passengers to create their accounts by registering their personal information. This feature allows users to securely log in to the system, ensuring a personalized experience for each passenger.

### **Search Train:**

Passengers can conveniently search for available trains between their desired origin and destination stations. The system displays relevant train information, such as train ID, train name, departure and arrival time etc.

### **Fare Calculation:**

The DBMS automates fare calculation based on factors like distance and total booked seats. Passengers can quickly determine the cost of their journey.

### **Train Selection and Ticket Booking:**

Once passengers have chosen their preferred train, they can proceed to book their tickets seamlessly through the system. The Railway DBMS allows passengers to select their number of seats required.

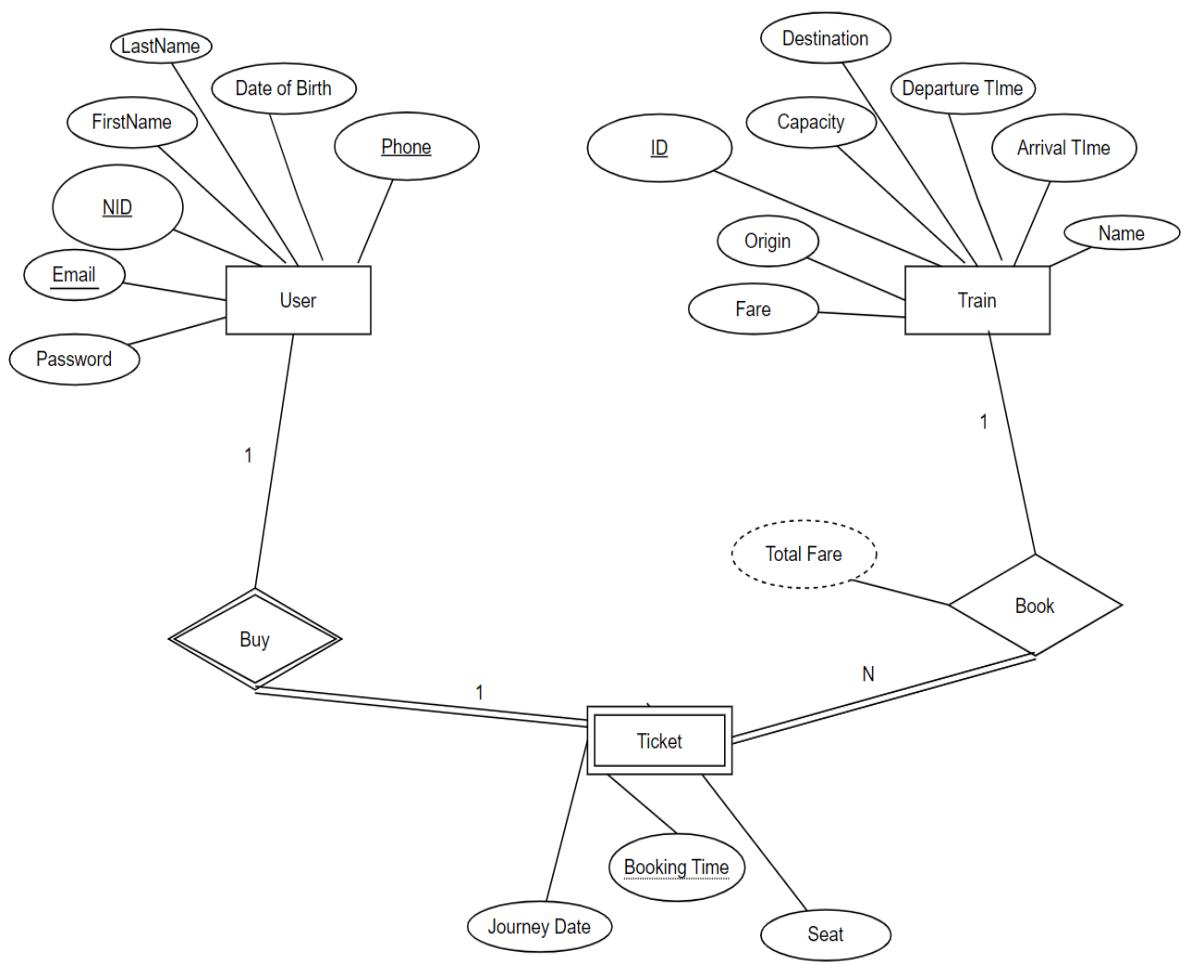
### **Travel History:**

Passengers can access their travel history, displaying details of their past journeys, including train names, travel dates, booked seats, and fare paid. This feature provides passengers with a comprehensive overview of their travel experiences.

### **User Information:**

The Railway DBMS provides a centralized database to manage user information securely. Users can view their profile information like NID, Name, Phone, Email, Date of Birth.

## ER Diagram



## Schema Diagram

### User

<u>NID</u>	<u>Phone</u>	<u>Email</u>	FirstName	LastName	Password	Date of Birth
------------	--------------	--------------	-----------	----------	----------	---------------

### Ticket

<u>NID</u>	<u>Booking Time</u>	Phone	Email	TrainID	Train Name	Journey Date	Seat
------------	---------------------	-------	-------	---------	------------	--------------	------

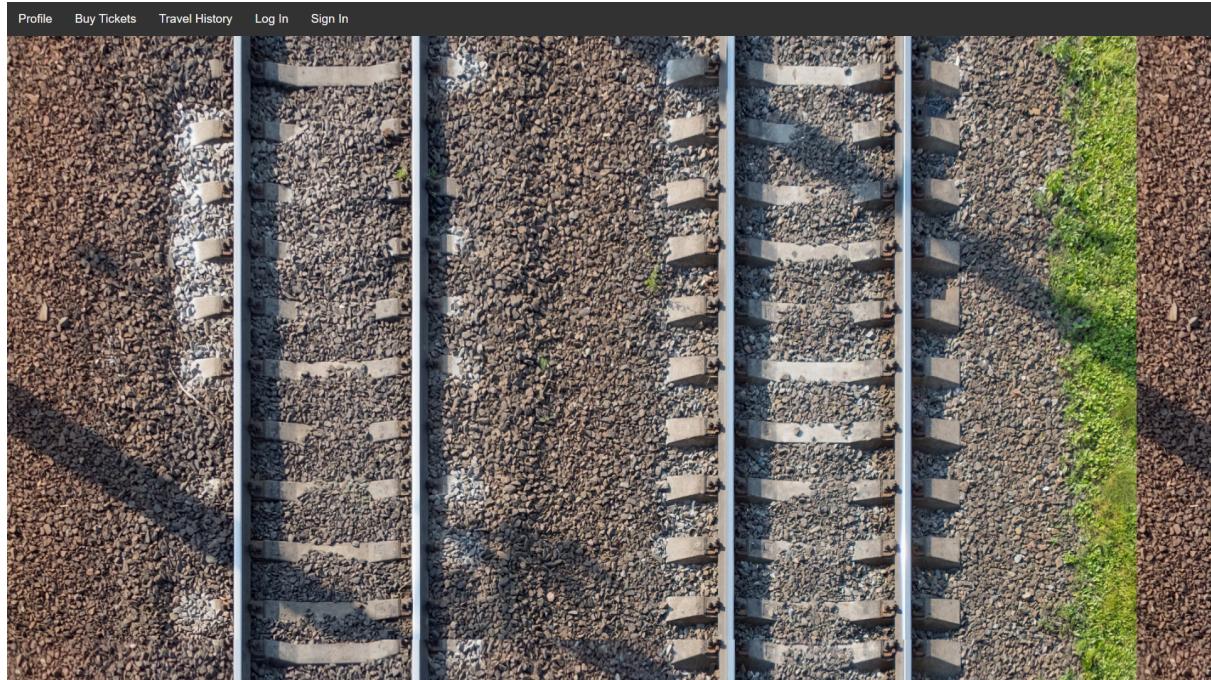
### Train

<u>TrainID</u>	Train Name	Capacity	Destination	Origin	Fare	Departure Time	Arrival Time
----------------	------------	----------	-------------	--------	------	----------------	--------------

## Frontend Development

**Contribution of ID :21201428, Name : Md. Mubashirul Islam**

The frontend was developed using HTML and CSS. Profile, Buy Tickets, Travel History, Log in and Sign In buttons are located at the navbar in the home page. In the Sign In page users have to give their personal information in the form and click the Sign Up button to submit the form. In the log in page, registered users have to fill up the log in form and click log in to continue. From the Buy Tickets page users can search trains for their desired destination and after that they can book a ticket by giving the necessary information in the form and clicking the book ticket button. Then the website will redirect the users to the payment page where users can proceed for payment by giving their credit card information. The booked ticket can be found on the Travel History page.



**Train Schedule**

From:  Enter Station

To:  Enter Station

Search **8**

Train ID:

Journey Date:  mm/dd/yyyy

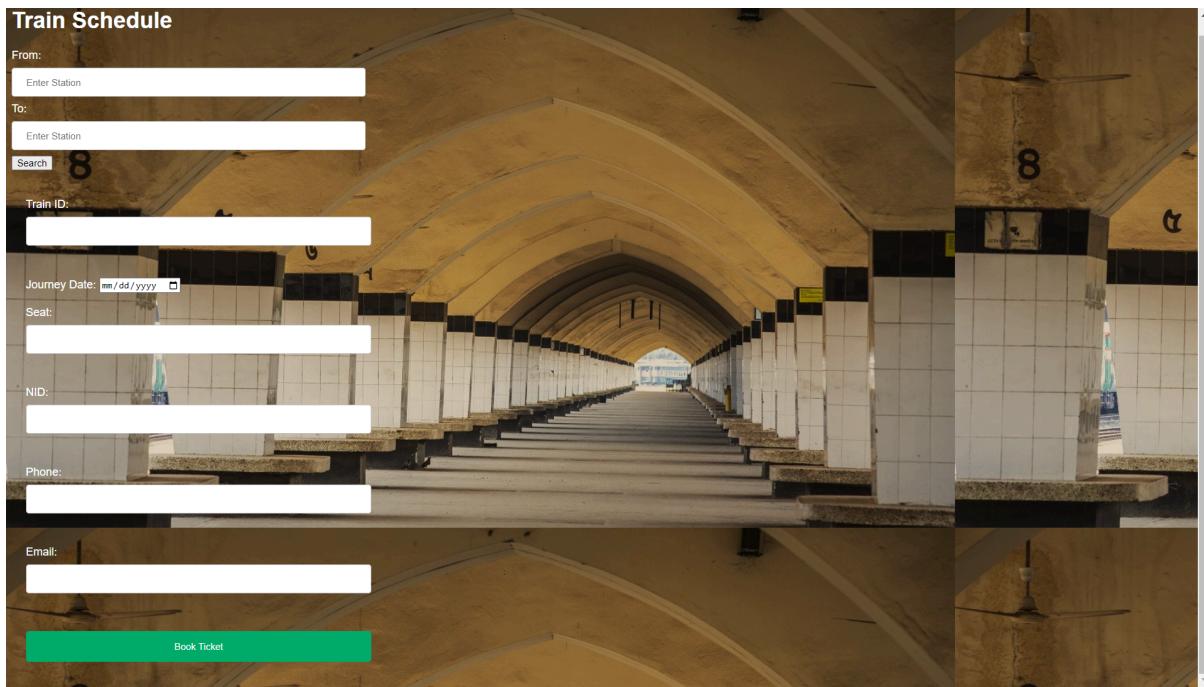
Seat:

NID:

Phone:

Email:

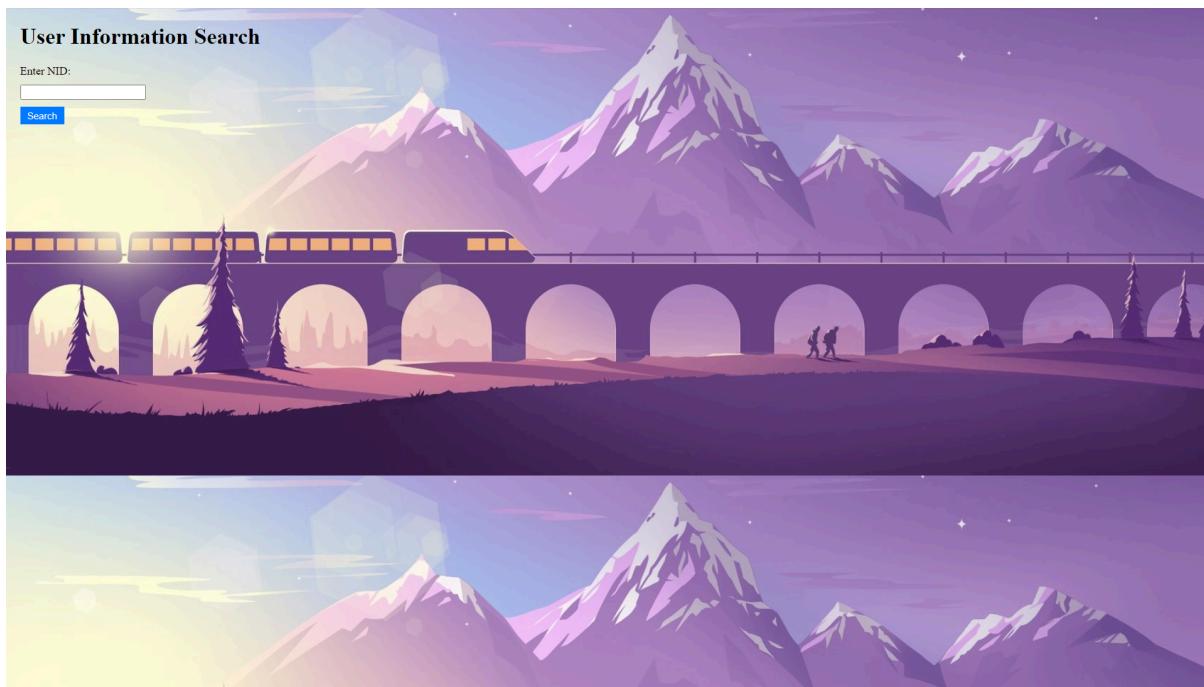
**Book Ticket**



**User Information Search**

Enter NID:

Search





**Payment**

Accepted Cards



Name on Card

Credit card number

Exp Month

Exp Year

CVV

Continue to checkout

### User Information Search

Enter NID:

Search

NID	First Name	Last Name	Email	Phone	Date of Birth
3322	anindya	majumdar	abodd@gmail.com	12121212121	2021-08-25



### Train Schedule

From:

To:

Search

Train ID	Train Name	Departure Time	Arrival Time	Seat Left
1	Padma Express	07:00:00	13:00:00	300
22	Padma Paribahan	09:30:00	17:00:00	250



**User Information Search**

Enter NID:

**Search**

NID	TrainID	TrainName	Phone	Email	Booking Time	JourneyDate	Seat
3322	5	Paharika Commuter	1723158330	kawsarhabib1013@gmail.com	2023-08-25 21:38:51	2023-08-03	3



Ticket booked successfully.

[GO FOR PAYMENT](#)

## Fare Calculator

## Payment Confirmation

Your fare: 1200

[Pay Now](#)

## Backend Development

**Contribution of ID : 21201327, Name : MD. Kawsar Habib**

Users can sign up using their personal information and log in using their given data. After that, users can view their personal information. They can book tickets for their desired destination and can see their total fare and can make payments. After booking the ticket users can view their ticket in trip history. The backend development is done by MySql and PHP language.

### Connection.php

```
1 <?php
2 $host = 'localhost';
3 $username = 'root';
4 $password = '';
5 $database = 'railwaymanagementsystem';
6
7 $conn = new mysqli($host, $username, $password, $database);
8
9 if ($conn->connect_error) {
10     die("Connection failed: " . $conn->connect_error);
11 }
12 ?>
13
```

## Profile.php

```
// Initialize variables
$NID = "";
$infos = array();

// Check if the form has been submitted
if ($_SERVER["REQUEST_METHOD"] == "POST") {
    // Get user-provided NID and
    $NID = $_POST['searchNID'];

    // Write the SQL query to fetch info details based on NID and
    $query = "SELECT * FROM user WHERE NID = '$NID'";

    // Execute the query
    $result = $conn->query($query);

    // Fetch info details and store in the $info array
    while ($row = $result->fetch_assoc()) {
        $infos[] = $row;
    }

    // Close the database connection
    $conn->close();
}

// Display the info details
if ($_SERVER["REQUEST_METHOD"] == "POST") {
    if (!empty($infos)) {
        echo "<table width ='70%' border ='3' align ='left'>";
        echo "<tr align ='left'><th>NID</th><th>First Name</th><th>Last Name</th><th>Email</th><th>Phone</th><th>Date of Birth</th></tr>";
        foreach ($infos as $info) {
            echo "<tr>";
            echo "<td>" . $info['NID'] . "</td>";
            echo "<td>" . $info['FirstName'] . "</td>";
            echo "<td>" . $info['LastName'] . "</td>";
            echo "<td>" . $info['Email'] . "</td>";
            echo "<td>" . $info['Phone'] . "</td>";
            echo "<td>" . $info['DateOfBirth'] . "</td>";
            echo "</tr>";
        }
        echo "</table>";
    } else {
        echo "No info found for the specified NID.";
    }
}
```

## Train.php

```
61 // Initialize variables
62 $origin = $destination = "";
63 $strains = array();
64
65 // Check if the form has been submitted
66 if ($_SERVER["REQUEST_METHOD"] == "POST") {
67     // Get user-provided origin and destination
68     $origin = $_POST['From'];
69     $destination = $_POST['To'];
70
71     // SQL query to fetch train details based on origin and destination
72     $query = "SELECT * FROM Train WHERE Origin = '$origin' AND Destination = '$destination'";
73
74     // Execute the query
75     $result = $conn->query($query);
76
77     // Fetch train details and store in the $strains array
78     while ($row = $result->fetch_assoc()) {
79         $strains[] = $row;
80     }
81
82     // Close the database connection
83     $conn->close();
84 }
85
86 // Display the train details
87 if ($_SERVER["REQUEST_METHOD"] == "POST") {
88     if (!empty($strains)) {
89         echo "<table width ='70%' border ='3' align ='center'>";
90         echo "<tr align ='left'><th>Train ID</th><th>Train Name</th><th>Departure Time</th><th>Arrival Time</th><th>Capacity</th></tr>";
91         foreach ($strains as $strain) {
92             echo "<tr>";
93             echo "<td>" . $strain['TrainID'] . "</td>";
94             echo "<td>" . $strain['TrainName'] . "</td>";
95             echo "<td>" . $strain['DepartureTime'] . "</td>";
96             echo "<td>" . $strain['ArrivalTime'] . "</td>";
97             echo "<td>" . $strain['Capacity'] . "</td>";
98             echo "</tr>";
99         }
100        echo "</table>";
101    } else {
102        echo "No trains found for the specified origin and destination.";
103    }
104}
```

## Process.php

```
1 <?php
2 | include('connection.php');
3 | if ($_SERVER['REQUEST_METHOD'] == "POST") {
4 |     // Get data from the form
5 |     $trainID = $_POST['trainID'];
6 |     $journeyDate = $_POST['journeyDate'];
7 |     $seat = $_POST['seat'];
8 |     $NID = $_POST['NID'];
9 |     $phone = $_POST['phone'];
10 |    $email = $_POST['email'];
11 |    // Search for trainName in the train table
12 |    $sql = "SELECT TrainName FROM train WHERE trainID = $trainID";
13 |    $result = $conn->query($sql);
14 |
15 |    if ($result->num_rows > 0) {
16 |        // Train found, fetch the trainName
17 |        $row = $result->fetch_assoc();
18 |        $trainName = $row["TrainName"];
19 |
20 |        $sql = "INSERT INTO ticket (TrainID, TrainName, JourneyDate, Seat, NID, Phone, Email)
21 |               VALUES ('$trainID', '$trainName', '$journeyDate', '$seat', '$NID', '$phone', '$email')";
22 |
23 |
24 |        if ($conn->query($sql) === TRUE) {
25 |            echo "<p><h3>Ticket booked successfully.</h3></p>";
26 |            echo "<br><br><a href='payment_page.php' style='text-align: center; display: block;'>GO FOR PAYMENT</a>";
27 |        } else {
28 |            echo "Error: " . $sql . "<br>" . $conn->error;
29 |        }
30 |
31 |    } // Close the database connection
32 |    $conn->close();
33 | } else {
34 |     // Handle other HTTP request methods (GET, etc.) if needed
35 |     echo "Invalid request method.";
36 | }
37 | ?>
```

## Payment\_page.php

```
10 <?php
11 | include('connection.php');
12 | // Retrieve the latest booking details from history table
13 | $query = "SELECT TrainID, Seat FROM ticket ORDER BY BOOKINGTIME DESC LIMIT 1";
14 | $result = $conn->query($query);
15 |
16 | if ($result->num_rows > 0) {
17 |     $row = $result->fetch_assoc();
18 |     $trainID = $row['TrainID'];
19 |     $seat = $row['Seat'];
20 |
21 |     // Retrieve fare from Train table
22 |     $strainQuery = "SELECT Fare FROM Train WHERE TrainID = '$trainID'";
23 |     $strainResult = $conn->query($strainQuery);
24 |
25 |     if ($strainResult->num_rows > 0) {
26 |         $strainRow = $strainResult->fetch_assoc();
27 |         $farePerSeat = $strainRow['Fare'];
28 |
29 |         // Calculate total fare
30 |         $totalFare = $farePerSeat * $seat;
31 |
32 |         echo "<p><h2>Your fare: $totalFare</h2></p>";
33 |
34 |         // Display payment form here
35 |         echo '<form action="payment.html" method="post">';
36 |         echo '<input type="hidden" name="totalFare" value="' . $totalFare . '">';
37 |         // Add other payment form fields
38 |         echo '<button type="submit">Pay Now</button>';
39 |         echo '</form>';
40 |     } else {
41 |         echo "Train fare not found.";
42 |     }
43 | } else {
44 |     echo "Booking details not found.";
45 | }
46 |
47 | // Close the database connection
48 | $conn->close();
49 | ?>
```

## Payment\_confirmation.php

```
117 <?php
118     include('connection.php');
119
120     $query = "SELECT TrainID, Seat FROM history ORDER BY BOOKINGTIME DESC LIMIT 1";
121     $result = $conn->query($query);
122
123     if ($result->num_rows > 0) {
124         $row = $result->fetch_assoc();
125         $trainID = $row['TrainID'];
126         $seat = $row['Seat'];
127
128         // Retrieve fare from Train table
129         $trainQuery = "SELECT Fare FROM Train WHERE TrainID = '$trainID'";
130         $trainResult = $conn->query($trainQuery);
131
132         if ($trainResult->num_rows > 0) {
133             $trainRow = $trainResult->fetch_assoc();
134             $farePerSeat = $trainRow['Fare'];
135
136             // Calculate total fare
137             $totalFare = $farePerSeat * $seat;
138
139             echo "<p>Your fare: $totalFare</p>";
140
141             // Display payment form here
142             echo '<form action="payment.html" method="post">';
143             echo '<input type="hidden" name="totalFare" value="' . $totalFare . '">';
144             // Add other payment form fields
145             echo '<button type="submit">Pay Now</button>';
146             echo '</form>';
147         } else {
148             echo "Train fare not found.";
149         }
150     } else {
151         echo "Booking details not found.";
152     }
153
154     // Close the database connection
155     $conn->close();
156 ?>
```

## History.php

```
19 // Initialize variables
20 $NID = "";
21 $infos = array();
22
23 // Check if the form has been submitted
24 if ($_SERVER["REQUEST_METHOD"] == "POST") {
25     // Get user-provided NID and
26     $NID = $_POST['searchNID'];
27
28     // SQL query to fetch info details based on NID and
29     $query = "SELECT * FROM ticket WHERE NID = '$NID'";
30
31     // Execute the query
32     $result = $conn->query($query);
33
34     // Fetch info details and store in the $info array
35     while ($row = $result->fetch_assoc()) {
36         $infos[] = $row;
37     }
38
39     // Close the database connection
40     $conn->close();
41 }
42
43
44 // Display the info details
45 if ($_SERVER["REQUEST_METHOD"] == "POST") {
46     if (!empty($infos)) {
47         echo "<table width='70%' border='3' align='left'>";
48         echo "<tr align='left'><th>NID</th><th>TrainID</th><th>TrainName</th><th>Phone</th><th>Email</th><th>BookingTime</th><th>JourneyDate</th><th>Seat</th></tr>";
49         foreach ($info as $info) {
50             echo "<tr>";
51             echo "<td>" . $info['NID'] . "</td>";
52             echo "<td>" . $info['TrainID'] . "</td>";
53             echo "<td>" . $info['TrainName'] . "</td>";
54             echo "<td>" . $info['Phone'] . "</td>";
55             echo "<td>" . $info['Email'] . "</td>";
56             echo "<td>" . $info['BookingTime'] . "</td>";
57             echo "<td>" . $info['JourneyDate'] . "</td>";
58             echo "<td>" . $info['Seat'] . "</td>";
59             echo "</tr>";
60         }
61         echo "</table>";
62     }
63 }
```

## Login\_process.php

```
1 <?php
2 // Include the database connection script
3 include('connection.php');
4
5 // Get the user's entered credentials from the form
6 $email = $_POST['email'];
7 $password = $_POST['psw'];
8
9 // Find the user in the database based on the provided email
10 $query = "SELECT * FROM User WHERE Email = '$email'";
11 $result = $conn->query($query);
12
13 if ($result->num_rows > 0) {
14     $user = $result->fetch_assoc();
15
16     // Verify the password
17     if ($user['Password'] === $password) {
18         echo "Sign-in successful!";
19         header("Location: home.html");
20     } else {
21         echo "Incorrect password.";
22     }
23 } else {
24     echo "User not found.";
25 }
26
27 // Close the database connection
28 $conn->close();
29 ?>
30
```

## Registration\_process.php

```
1 <?php
2 // Include the database connection script
3 include('connection.php');
4
5 // Get form field values
6 $NID = $_POST['NID'];
7 $firstName = $_POST['first_name'];
8 $lastName = $_POST['last_name'];
9 $email = $_POST['email'];
10 $password = $_POST['password'];
11 $phone = $_POST['phone'];
12 $dob = $_POST['dob'];
13
14 // Write the SQL query
15 $query = "INSERT INTO User (NID, FirstName, LastName, Password, Email, Phone, DateOfBirth) VALUES ('$NID', '$firstName', '$lastName', '$password', '$email', '$phone', '$dob')";
16
17 // Execute the query
18 if ($conn->query($query) === TRUE) {
19     echo "Registration successful!";
20     header("Location: home.html");
21 } else {
22     echo "Error: " . $query . "<br>" . $conn->error;
23 }
24
25 // Close the database connection
26 $conn->close();
27 ?>
```

## **Conclusion**

In conclusion, the Railway Database Management System project seeks to modernize railway operations by offering a range of user-centric features. By enabling easy user registration, seamless ticket booking, and efficient travel history tracking, this project aims to enhance the overall railway experience for passengers.

## **References**

1. <https://www.w3schools.com/>