NEW HORIZON
COLLEGE OF ENGINEERING
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC
Accredited by NAAC with 'A' Grade, Accredited by NBA

ABILITY ENHANCEMENT COURSE PROJECT REPORT

for

WEB DESIGN TECHNOLOGIES (21CSE422A)

on

BUS RESERVATION WEBSITE

Submitted by

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CERTIFICATE

This is to certify that the Ability Enhancement course project work titled

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For

COURSE: WEB DESIGN TECHNOLOGIES (21CSE422A)

Signature of Reviewer

Signature of HOD

ABSTRACT

The Bus Reservation System is an advanced and efficient online platform designed to simplify and streamline the process of reserving bus seats and managing bookings for passengers. Developed using a combination of HTML, SQL, PHP, JavaScript, and CSS, this system offers a comprehensive solution that enhances user experience, ensures data integrity, and provides robust functionality Users can register and create accounts by providing essential details such as name, email, contact information. Administrators have exclusive access to a management console, allowing them to oversee and control bus routes, schedules, seat availability, and user bookings.The website employs responsive design principles, ensuring optimal user experience across devices and screen sizes.JavaScript enhances interactivity, including real-time updates on seat availability and dynamic form validation. An SQL database stores crucial data.SQL queries and transactions ensure efficient data retrieval and manipulation.Users choose available seats and initiate the booking process. Users can view and manage their bookings in their personalized dashboard.

ACKNOWLEDGEMENT

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CHAPTER 1

INTRODUCTION

1.1 PROBLEM DEFINITION:

Website allows users to make reservations and manage their bookings. The system should streamline the bus booking process for users and provide efficient management tools for administrators. We Designed an intuitive and user-friendly website using HTML and CSS with a responsive design to ensure compatibility across various devices and screen sizes.

1.2 Objectives:

User-Friendly Booking Process: Ensure that the booking process is intuitive and easy to navigate, allowing users to search for buses, select routes, choose seats, and make reservations without any confusion**.**

Efficient Search and Filtering: Develop advanced search and filtering options that allow users to find buses based on factors such as departure time, arrival time, bus type, amenities, and price.

Secure Payment System: Implement a robust and secure payment gateway to enable users to make online payments for their reservations, while safeguarding their sensitive information.

Real-Time Availability: Provide real-time information on bus availability, routes, and seat availability to help users make informed decisions while booking.

Mobile Responsiveness: Ensure the website is responsive and optimized for mobile devices, offering a seamless booking experience for users on smartphones and tablets.

User Accounts and Profiles: Allow users to create accounts and profiles, enabling them to save their booking preferences, view booking history, and receive personalized offers and notifications.

Transparent Pricing: Clearly display the fare breakdown, including any additional charges, taxes, and fees, so that users understand the total cost of their reservation upfront.

Cancellation and Refund Policies: Clearly communicate the cancellation and refund policies, and provide a hassle-free process for users to cancel or modify their bookings if needed.

Customer Support: Offer multiple channels for customer support, such as live chat, email, and a dedicated helpline, to assist users with their queries and concerns.

Integration with Bus Operators: Establish partnerships and integrations with bus operators to ensure accurate and up-to-date information on schedules, routes, and available buses.

User Reviews and Ratings: Allow users to leave reviews and ratings for their travel experiences, helping other users make informed decisions and improving the overall quality of service.

Accessibility and Inclusivity: Design the website with accessibility features in mind, ensuring that users with disabilities can easily navigate and use the platform.

Analytics and Insights: Implement analytics tools to track user behavior, booking patterns, and other relevant metrics to make data-driven decisions for improving the website's performance.

Promotions and Loyalty Programs: Offer promotional discounts and loyalty programs to incentivize repeat bookings and attract new customers.

Localization and Multiple Languages: Provide language options and localized content to cater to a diverse user base, especially if your service extends to different regions or countries.

Integration with Travel Services: Consider integrating with other travel services like hotels or tour packages to provide users with a comprehensive travel planning experience.

Scalability and Reliability: Build the website infrastructure to handle varying levels of user traffic and ensure high reliability, especially during peak booking periods.

1.3 Methodology

1. Project Planning:
   - Define the project scope, objectives, and requirements based on the problem definition.
   - Identify the target audience and their needs.
   - Create a project timeline with milestones and deliverables.

2. Database Design:
   - Design the MySQL database schema to store information about users, bus routes, schedules, seat bookings, and payments.
   - Define relationships between tables and ensure data integrity.

3. Front-End Development:
   - Design the user interface using HTML and CSS:
   - Create visually appealing pages for user registration, login, bus route listing, seat selection, booking, and user dashboard.
   - Implement responsive design to ensure compatibility across devices.

4. JavaScript Enhancements:
   - Use JavaScript to enhance user experience:
   - Implement dynamic seat selection with real-time updates on seat availability.
   - Validate user inputs on forms and provide meaningful error messages.

5. Back-End Development (PHP):
   - Set up the PHP environment and configure server settings.
   - Implement PHP scripts to handle user registration, login, booking processing, and payment integration.

6. User Authentication and Registration:
   - Develop user registration and login functionality using PHP and MySQL:

- Hash passwords before storing them in the database.
- Implement user authentication and session management.

7. Seat Selection and Reservation:
- Develop a seat selection module using JavaScript and PHP:
- Implement seat reservation and integrate it with the booking process.

8. Launch and Maintenance:
- Launch the website to the public after thorough testing.
- Implement updates, enhancements, and bug fixes as needed.

1.4 Expected Outcomes

provide users with a seamless online platform for booking bus tickets. This type of website can serve as an efficient solution for both traveller's and bus operators. It provides a platform with a clean and userfriendly design to reserve bus tickets within minutes by entering the required details. The website provides a platform that is designed to revolutionize the way you book bus tickets, making your journey hassle-free, efficient.It will display a website to enter details by clicking the the panels and typing or selecting the correct information.

1.5 REQUIREMENT SPECIFICATIONS:

1. **Development Environment**:

- A computer with a text editor or integrated development environment for coding (e.g., Visual Studio Code, Sublime Text, Php Storm).

2. **Web Technologies**:

- HTML, CSS, JavaScript for front-end development.
- PHP for server-side scripting.
- MySQL or another relational database management system for data storage.

3. **Web Hosting**:

- A web hosting provider that supports PHP and MySQL databases.
- Access to Control Panel or a similar control panel for managing server settings, databases, and files.

4. **Responsive Design**:

- Design your website to be responsive, ensuring it works well on various devices and screen sizes.

5. **Version Control**:

- Version control system (e.g., Git) to track changes, collaborate, and manage codebase.

6. **Security Measures**:

- Implement security measures to protect user data, such as hashing passwords, preventing SQL injection, and using parameterized queries.

7. **Testing Tools**:

- Browser developer tools for debugging and testing.
- Automated testing tools for code quality and functionality testing.

2.FUNDAMENTALS OF WDT

It seems like you're asking about the fundamentals of Web Development Technologies (WDT). Web development technologies encompass various tools, languages, and frameworks used to create and maintain websites and web applications. Here are some fundamental aspects of web development technologies:

1. Front-End Development:

HTML (Hypertext Markup Language): The standard markup language for creating the structure and content of web pages.

(Cascading Style Sheets): Used to control the presentation and layout of web pages, including fonts, colors, spacing, and responsive design.

JavaScript: A versatile programming language that enables dynamic and interactive elements on web pages.

2. Back-End Development:

Server-Side Scripting Languages: Such as PHP, Python, Ruby, Node.js, used to handle server-side logic, data processing, and interaction with databases.

Databases: MySQL, PostgreSQL, MongoDB, etc., used to store and manage data for web applications.

3.Web Frameworks:

Front-End Frameworks: Libraries like React, Angular, and Vue.js that facilitate the creation of dynamic and interactive user interfaces.

Back-End Frameworks: Express.js for Node.js, Django for Python, Ruby on Rails, etc., that provide pre-built structures and tools for back-end development.

4.Web Servers and Hosting:

Apache, Nginx: Popular web servers that handle HTTP requests and serve web content.

Web Hosting: Services like AWS, Heroku, or shared hosting providers that host your web application.

5.APIs (Application Programming Interfaces):

RESTful APIs: Architectural style for designing networked applications using HTTP methods to perform CRUD (Create, Read, Update, Delete) operations on resources.

6.Responsive Design:

- Creating web pages that adapt and display well on various devices and screen sizes, using media queries and flexible layouts.

7.Browser Developer Tools:

- Built-in tools in web browsers for inspecting and debugging web pages, analyzing network requests, and testing code changes.

8.Security:

-Implementing secure coding practices to prevent common vulnerabilities like SQL injection, Cross-Site Scripting (XSS), and Cross-Site Request Forgery (CSRF).

9.Testing and Deployment:

Testing: Techniques like unit testing, integration testing, and user acceptance testing to ensure the functionality and reliability of your application.

Deployment: Deploying your web application to a production server, ensuring proper configuration and scaling as needed.

CHAPTER 3

DESIGN

3.1 DESIGN GOALS

1.Simplicity: Focus on the core features of user registration, seat selection, reservation, and booking management to keep the system simple and manageable.

2.Limited Scope:Exclude complexities like multiple bus routes and payment processing to simplify development and avoid overwhelming the project.

3.Learning Objectives: Use this project as a learning opportunity to practice front-end and back-end development, user authentication, database management, and user experience design.

4.Modularity:Design the system with modularity in mind, making it easier to add more features in the future, such as multiple routes and payment integration.

3.2 ALGORITHM/FLOWCHART:

ALGORITHM:

User Registration and Login:

- Users can register with their email and password.

- Upon registration, store user information (name, email, password) In the MySQL database.

- Users can log in using their registered email and password.

User Dashboard:

- Upon successful login, users are directed to their dashboard.

- The dashboard displays active and past bookings.

View Available Seats:

- Users can click on "Reserve a Seat" on the dashboard.

- Display a page showing the available seats for a selected bus journey.

- Retrieve seat availability data from the MySQL database.

Seat Selection:

- Display a graphical seat layout using HTML, CSS, and JavaScript.

- Highlight available seats and allow users to select seats.

- Update the seat layout in real-time as users make selections.

Confirm Reservation:

- After selecting seats, users can confirm their reservation.
- Validate the selected seats and display a confirmation message.
- Store the reservation details (user ID, seat numbers, date) in the database.

View Active and Past Bookings:

- Users can view their active and past bookings on the dashboard.
- Retrieve booking information from the database and display it on the dashboard.

Logout:

- Users can log out from the dashboard.

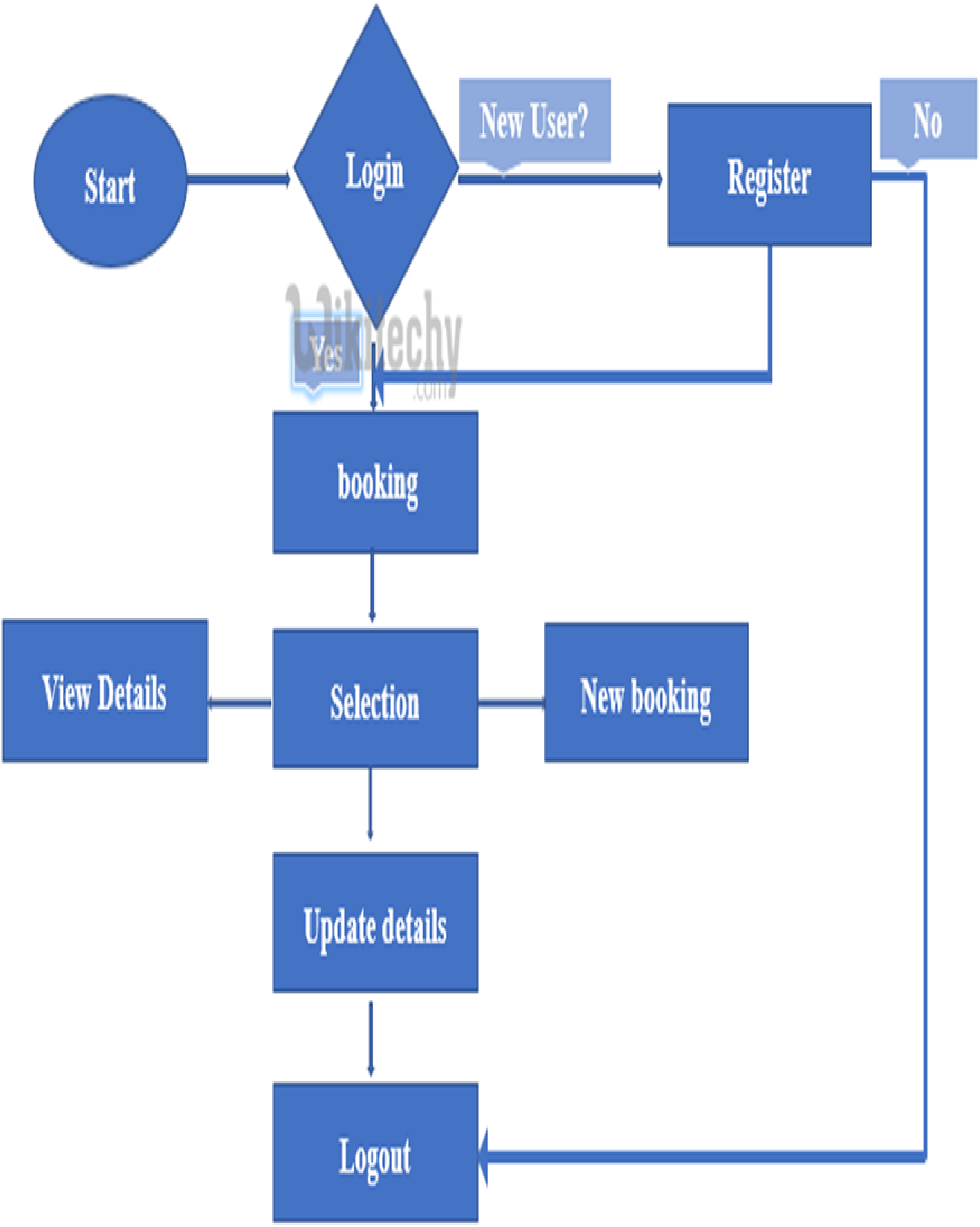
Users Table:

- user_id (Primary Key)
- name
- email

Bookings Table:

- booking_id (Primary Key)
- user_id (Foreign Key referencing Users Table)
- booking_date.

FLOWCHART:


Start
Login
New User?
Register
No
Yes
booking
View Details
Selection
New booking
Update details
Logout

CHAPTER 4

IMPLEMENTATION

4.1 CODING

- **HTML,PHP,MYSQL AND JAVASCRIPT**:

```
        <!DOCTYPE html>
<html>

<head>
   <title>Ticketing System</title>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-
scale=1">
   <link rel="stylesheet" type="text/css" href="css/style.css" />
   <script src="js/cancel.js"></script>

</head>

<body>

   <form action="" class="register">
      <h1>Reservation Details</h1>
      <?php if (isset($_POST) == true && empty($_POST) == false) :
         $chkbox = $_POST['chk'];
         $bus = $_POST['bus'];
         $day = $_POST['day'];
         $month = $_POST['month'];
         $mob = $_POST['mob'];
         $type = $_POST['type'];
         $from = $_POST['from'];
         $to = $_POST['to'];
         $root = $_POST['root'];
         $BX_NAME = $_POST['BX_NAME'];
         $BX_age = $_POST['BX_age'];
```

```
          $BX_gender = $_POST['BX_gender'];
          $BX_birth = $_POST['BX_birth'];
       ?>
          <fieldset class="row1">
             <legend>Travel Information</legend>
             <p>
                <label>BUS Name :
                </label>
                <input disabled name="bus" type="text" readonly="readonly"
value="<?php echo $bus ?>" />
                <label> Date :
                </label>
                <input disabled type="text" readonly="readonly" class="small"
value="<?php echo $day ?>" />
                <input disabled type="text" readonly="readonly" class="small"
value="<?php echo $month ?>" />
                <input disabled type="text" readonly="readonly" class="small"
value="2020" />
                <label>Bus Type :
                </label>
                <input disabled type="text" readonly="readonly"
value="<?php echo $type ?>" />

             </p>
             <p>
                <label>From :
                </label>
                <input disabled name="from" type="text"
readonly="readonly" value="<?php echo $from ?>" />
                <label>To :
                </label>
                <input disabled name="to" type="text" readonly="readonly"
value="<?php echo $to ?>" />
                <label>Via (Root) :
                </label>
                <input disabled type="text" readonly="readonly"
value="<?php echo $root ?>" />
```

```
            </p>
            <p>
               <label>Mobile :
               </label>
               <input disabled name="mob" type="text"
readonly="readonly" value="<?php echo $mob ?>" />
            </p>

            <div class="clear"></div>
          </fieldset>
          <fieldset class="row2">
          <legend>Passenger Details
          </legend>
           <table id="dataTable" class="form" border="1">
           <tbody>
                  <tr>
                     <th></th>
                     <th>Name</th>
                     <th>Age</th>
                     <th>Gender</th>
                     <th>Bearth Pre</th>
                  </tr>
                  <?php foreach ($BX_NAME as $row => $b) { ?>
                        <tr>
                        <td>
                           <?php echo $row + 1; ?>
                        </td>
                        <td>
                           <?php echo $BX_NAME[$row]; ?>
                        </td>
                        <td>

                           <?php echo $BX_age[$row]; ?>
                        </td>
                        <td>
                           <?php echo $BX_gender[$row]; ?>
                        </td>
                        <td>
```

```
                              <?php echo $BX_birth[$row]; ?>
     </td>
     </tr>
     <?php } ?>
     </tbody>
     </table>
     <div class="clear"></div>
     </fieldset>
     <fieldset class="row5">
     <legend>Terms and Conditions</legend>
     <p>
                  <input class="submit" onclick="cancel()" type="button"
value="Cancel Ticket &raquo;" />
                  <a class="submit" href="index.html" type="button"> Home <a
/>
 </p>
 <div class="clear"></div>
 </fieldset>
 <?php else : ?>
 <fieldset class="row1">
 <legend>Sorry</legend>
 <p>OOps! something went wrong please try again.</p>
 </fieldset>
 <?php endif; ?>
  <div class="clear"></div>
  </form>
  <div class="footer">
  <p>© 2020 Passenger Tim, all rights reserved</p>
  </div>
  </body>

  </html>
```

- **CSS**:

```
html {
   color: #373C40;
   font-family: "Lucida Console", Courier, monospace;
   height: 100%;
   background-color: #dfeef5;
   margin: 9px;
}

body {
   font-size: 90%;
}

p {
   padding: 7px 0 7px 0;
   font-weight: 500;
   font-size: 10pt;
}

a {
   color: #656565;
   text-decoration: none;
}

a:hover {
   color: #4C99CC;
   text-decoration: none;
}

h1 {
   font-weight: 200;
   color: #888888;
   font-size: 16pt;
   padding-left: 33px;
   margin: 8px;
}

.clear {
   width: 100%;
   float: none;
   clear: both;
}
```

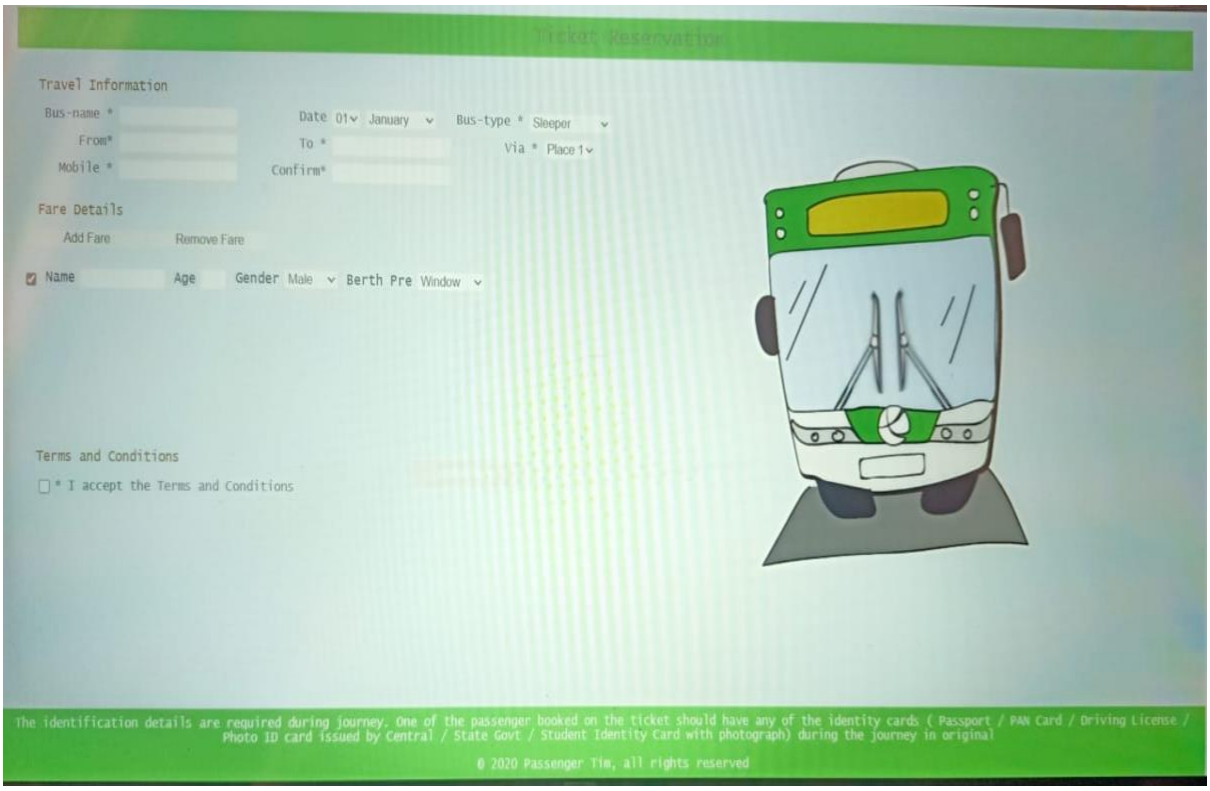
```
form.register {
   width: 100%;
   margin: 20px auto 0px auto;
   /* background-color: #fff; */
   padding: 5px;
}

form p {
   font-size: 10pt;
   clear: both;
   margin: 0;
   color: gray;
   padding: 4px;
}

fieldset.row1 {
   width: 100%;
   padding: 5px;
   float: left;
   border-top: 1px solid #F5F5F5;
   margin-bottom: 15px;
}

fieldset.row2 {
   border-top: 1px solid #F1F1F1;
   border-right: 1px solid #F1F1F1;
   padding: 5px;
   float: left;
   min-height: 220px;
}

fieldset.row3 {
   border-top: 1px solid #F1F1F1;
   padding: 5px;
   float: left;
   margin-bottom: 15px;
   width: 159px;
}

fieldset.row4,
fieldset.row5 {
   border-top: 1px solid #F1F1F1;
   border-right: 1px solid #F1F1F1;
   padding: 5px;
   float: left;
   clear: both;
}

fieldset.row5 {
   width: 100%;
}

.register .form label {
   float: left;
   text-align: left;
   margin-right: 5px;
   margin-top: 2px;
   width: auto;
}


}}}
}
```

- **ARRANGING THE PATTERN AS ROWS:**

```
function addRow(tableID) {
   var table = document.getElementById(tableID);
   var rowCount = table.rows.length;
   if(rowCount < 5){                        // limit the user from creating fields
more than your limits
       var row = table.insertRow(rowCount);
       var colCount = table.rows[0].cells.length;
       for(var i=0; i<colCount; i++) {
           var newcell = row.insertCell(i);
           newcell.innerHTML = table.rows[0].cells[i].innerHTML;
       }
   }else{
        alert("Maximum Passenger per ticket is 5.");
               }
}
function deleteRow(tableID) {
   var table = document.getElementById(tableID);
   var rowCount = table.rows.length;
   for(var i=0; i<rowCount; i++) {
       var row = table.rows[i];
       var chkbox = row.cells[0].childNodes[0];
       if(null != chkbox && true == chkbox.checked) {
           if(rowCount <= 1) {                        // limit the user from removing all
the fields
               alert("Cannot Remove all the Passenger.");
               break;
           }
           table.deleteRow(i);
           rowCount--;
           i--;
}
}
```

CHAPTER 5:

RESULT



Ticket Reservation

Travel Information

Bus-name *

From*

Mobile *

Date 01 January

To *

Confirm*

Bus-type * Sleeper

Via * Place 1

Fare Details

☑ Name Age Gender Male Berth Pre Window

Terms and Conditions

□ * I accept the Terms and Conditions

The identification details are required during journey. One of the passenger booked on the ticket should have any of the identity cards (Passport / PAN Card / Driving License / Photo ID card issued by Central / State Govt / Student Identity Card with photograph) during the journey in original

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CHAPTER 6:

CONCLUSION

The Bus Reservation System offers a comprehensive solution for passengers to easily and securely reserve bus seats, manage bookings, and access travel information. By combining HTML, SQL, PHP, JavaScript, and CSS, this system ensures a seamless user experience, efficient data management, and robust security measures, contributing to a hassle-free and user-centric bus travel experience.The Bus Reservation System offers a comprehensive solution for passengers to easily and securely reserve bus seats, manage bookings, and access travel information. By combining HTML, SQL, PHP, JavaScript, and CSS, this system ensures a seamless user experience, efficient data management, and robust security measures, contributing to a hassle-free and user-centric bus travel experience. By creating the website we have learnt many new things and have understood how to create an efficient website.

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