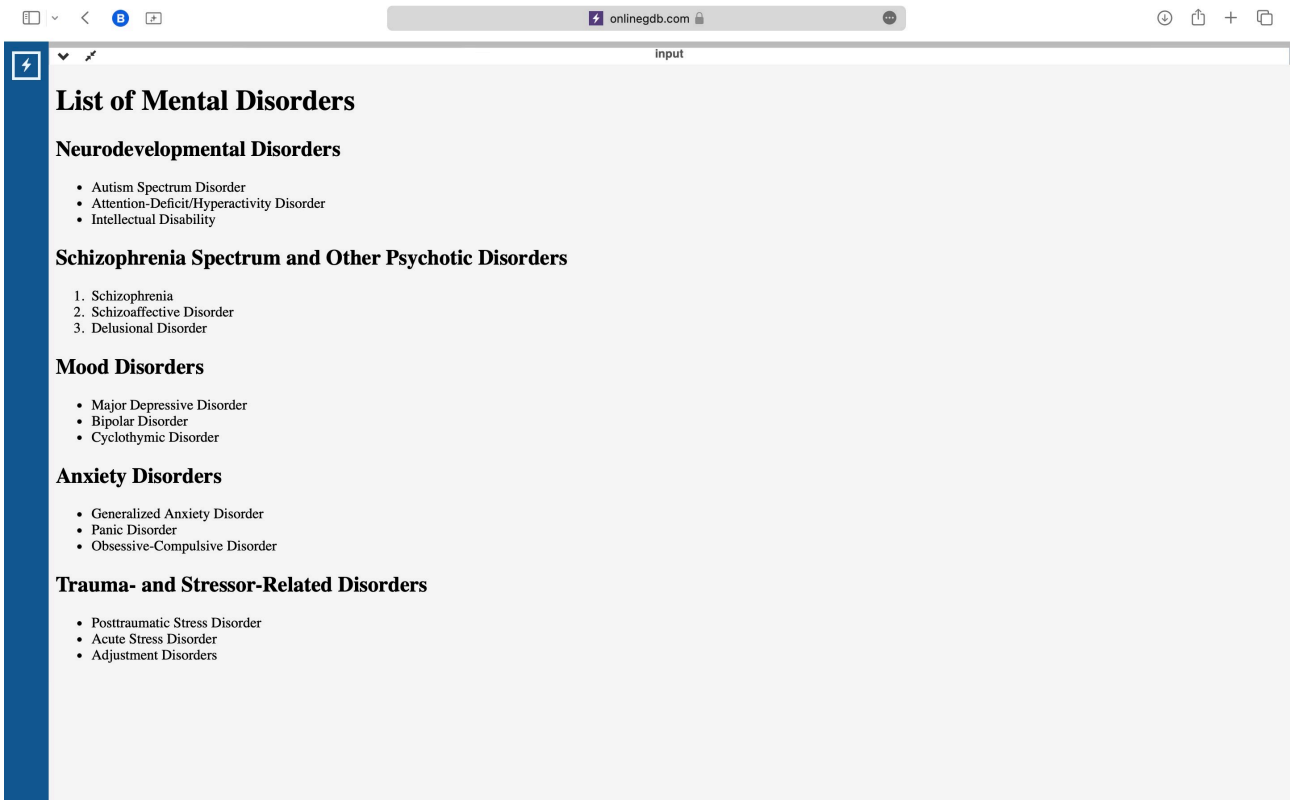
Experiment 1

HTML Program to work with Lists.

Code:

```
<!DOCTYPE html>
<html>
<head>
	<title>List of Mental Disorders</title>
</head>
<body>
	<h1>List of Mental Disorders</h1>
	<h2>Neurodevelopmental Disorders</h2>
	<ul>
		<li>Autism Spectrum Disorder</li>
		<li>Attention-Deficit/Hyperactivity Disorder</li>
		<li>Intellectual Disability</li>
	</ul>
	<h2>Schizophrenia Spectrum and Other Psychotic Disorders</h2>
	<ol>
		<li>Schizophrenia</li>
		<li>Schizoaffective Disorder</li>
		<li>Delusional Disorder</li>
	</ol>
	<h2>Mood Disorders</h2>
	<ul>
		<li>Major Depressive Disorder</li>
		<li>Bipolar Disorder</li>
		<li>Cyclothymic Disorder</li>
	</ul>
	<h2>Anxiety Disorders</h2>
	<ul>
		<li>Generalized Anxiety Disorder</li>
		<li>Panic Disorder</li>
		<li>Obsessive-Compulsive Disorder</li>
	</ul>
	<h2>Trauma- and Stressor-Related Disorders</h2>
	<ul>
		<li>Posttraumatic Stress Disorder</li>
		<li>Acute Stress Disorder</li>
		<li>Adjustment Disorders</li>
	</ul>
</body>
</html>
```

Output:



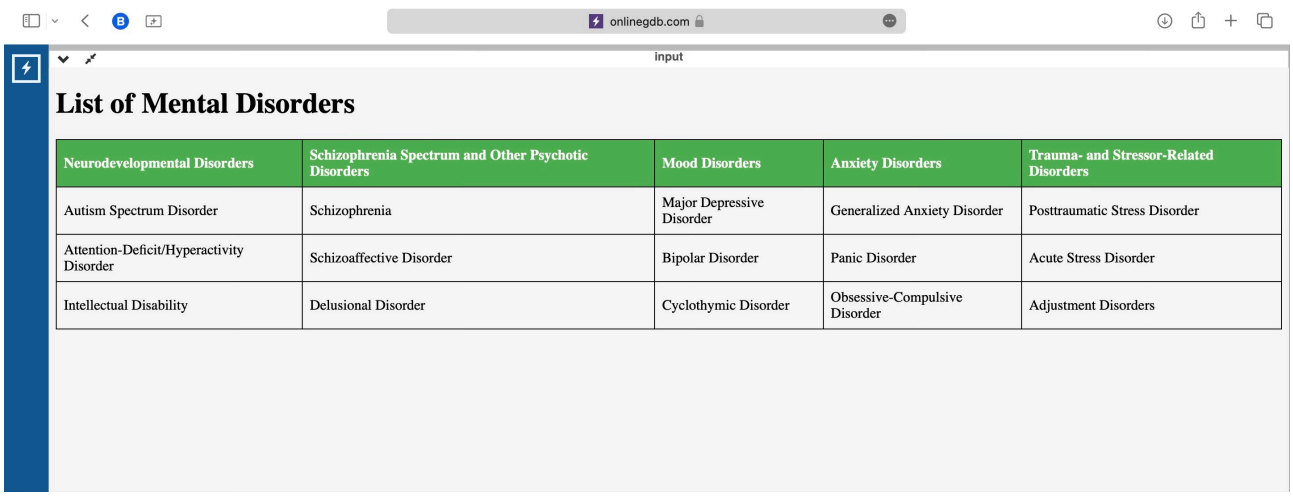
HTML Program to work with tables.

Code:

```
<!DOCTYPE html>
<html>
<head>
	<title>List of Mental Disorders</title>
	<style>
		table {
			border-collapse: collapse;
			width: 100%;
		}

		th, td {
			text-align: left;
			padding: 8px;
			border: 1px solid black;
		}

		th {
			background-color: #4CAF50;
			color: white;
		}
	</style>
</head>
```

```
<body>
        <h1>List of Mental Disorders</h1>
        <table>
                <thead>
                        <tr>
                                <th>Neurodevelopmental Disorders</th>
                                <th>Schizophrenia Spectrum and Other Psychotic Disorders</
th>
                                <th>Mood Disorders</th>
                                <th>Anxiety Disorders</th>
                                <th>Trauma- and Stressor-Related Disorders</th>
                        </tr>
                </thead>
                <tbody>
                        <tr>
                                <td>Autism Spectrum Disorder</td>
                                <td>Schizophrenia</td>
                                <td>Major Depressive Disorder</td>
                                <td>Generalized Anxiety Disorder</td>
                                <td>Posttraumatic Stress Disorder</td>
                        </tr>
                        <tr>
                                <td>Attention-Deficit/Hyperactivity Disorder</td>
                                <td>Schizoaffective Disorder</td>
                                <td>Bipolar Disorder</td>
                                <td>Panic Disorder</td>
                                <td>Acute Stress Disorder</td>
                        </tr>
                        <tr>
                                <td>Intellectual Disability</td>
                                <td>Delusional Disorder</td>
                                <td>Cyclothymic Disorder</td>
                                <td>Obsessive-Compulsive Disorder</td>
                                <td>Adjustment Disorders</td>
                        </tr>
                </tbody>
        </table>
</body>
</html>
```

Output:



Experiment 2

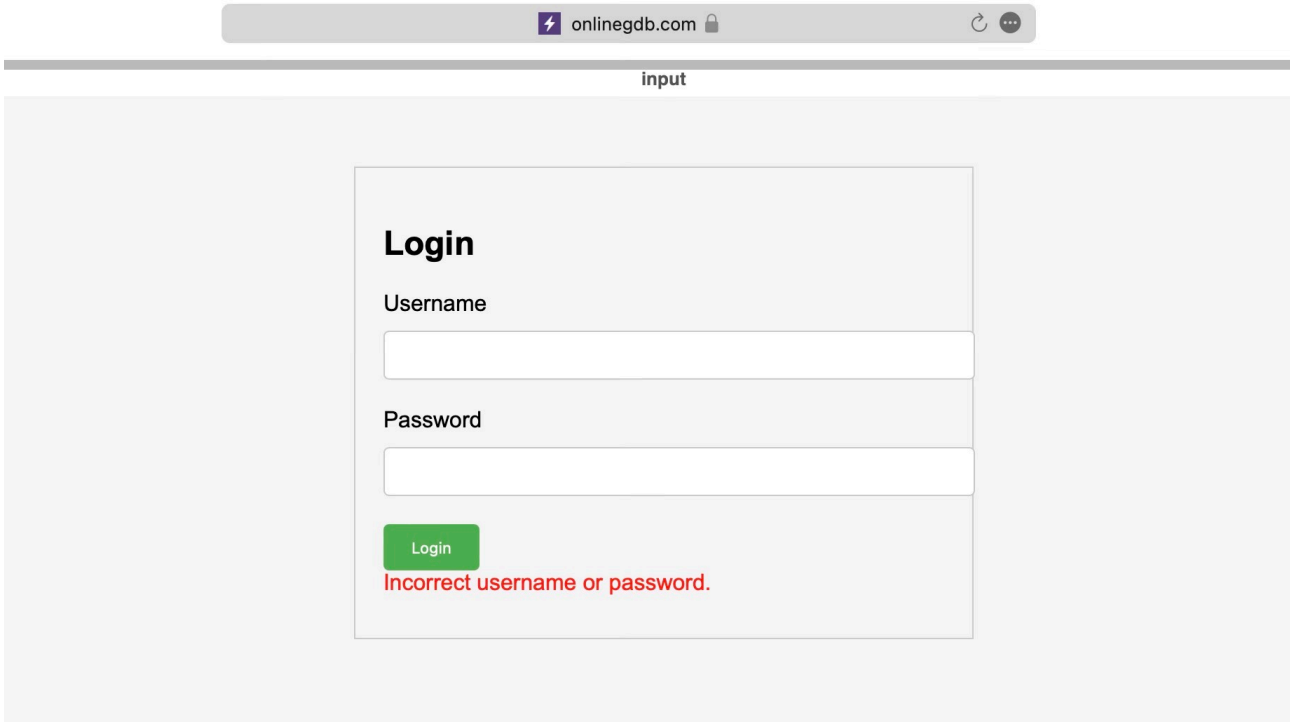
HTML Program to design login page, registration page.

Code:

- Login page

```
<!DOCTYPE html>
<html>
<head>
	<title>Login Page</title>
	<style>
		body {
			font-family: Arial, sans-serif;
		}

		form {
			border: 1px solid #ccc;
			padding: 20px;
			margin: 50px auto;
			max-width: 400px;
		}

		label {
			display: block;
			margin-bottom: 10px;
		}

		input[type="text"], input[type="password"] {
			width: 100%;
			padding: 10px;
			margin-bottom: 20px;
			border: 1px solid #ccc;
			border-radius: 4px;
		}

		button[type="submit"] {
			background-color: #4CAF50;
			color: white;
			padding: 10px 20px;
			border: none;
			border-radius: 4px;
			cursor: pointer;
		}

		button[type="submit"]:hover {
			background-color: #45a049;
		}

		.error {
			color: red;
			margin-bottom: 10px;
```

```
            }
        </style>
</head>
<body>
        <form action="login.php" method="post">
                <h2>Login</h2>
                <label for="username">Username</label>
                <input type="text" id="username" name="username" required>
                <label for="password">Password</label>
                <input type="password" id="password" name="password" required>
                <button type="submit">Login</button>
                <div class="error">Incorrect username or password.</div>
        </form>
</body>
</html>
```

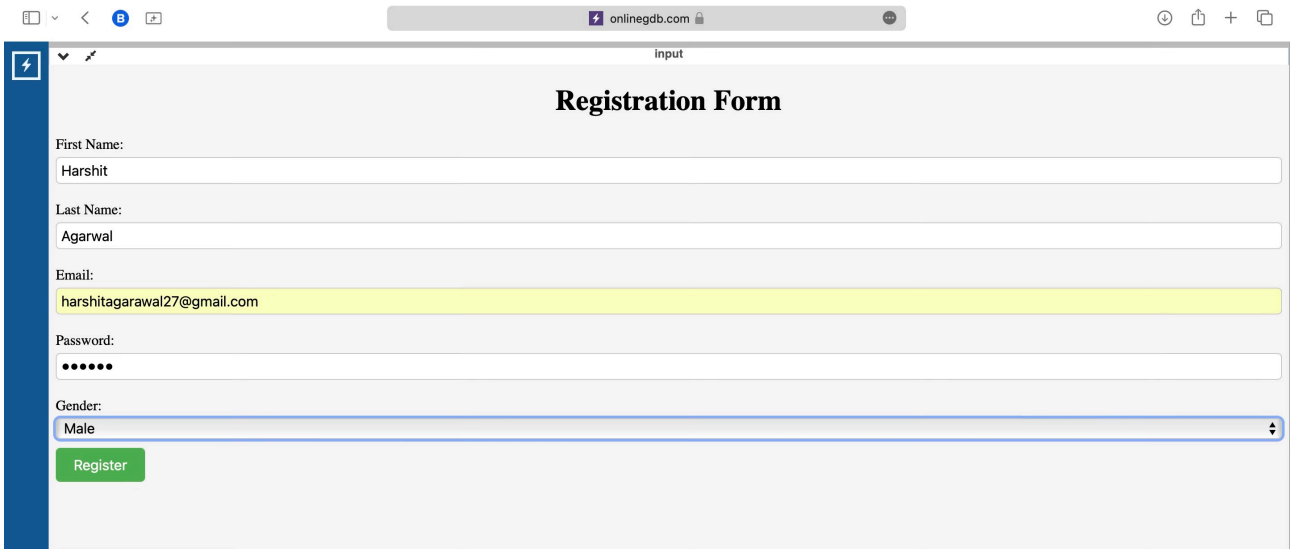


- Registration page

```
<!DOCTYPE html>
<html>
<head>
        <title>Registration Form</title>
        <style>
                label {
                        display: block;
                        margin-top: 10px;
                }

                input[type="text"], input[type="email"], input[type="password"], select {
                        padding: 5px;
                        border-radius: 5px;
```

```
                border: 1px solid #ccc;
                font-size: 16px;
                width: 100%;
                box-sizing: border-box;
                margin-top: 5px;
                margin-bottom: 10px;
            }

            input[type="submit"] {
                background-color: #4CAF50;
                color: white;
                padding: 10px 20px;
                border-radius: 5px;
                border: none;
                cursor: pointer;
                font-size: 16px;
            }

            input[type="submit"]:hover {
                background-color: #3e8e41;
            }

            h1 {
                text-align: center;
            }
        </style>
</head>
<body>
        <h1>Registration Form</h1>
        <form>
            <label for="fname">First Name:</label>
            <input type="text" id="fname" name="fname" placeholder="Enter your first
name">

            <label for="lname">Last Name:</label>
            <input type="text" id="lname" name="lname" placeholder="Enter your last
name">

            <label for="email">Email:</label>
            <input type="email" id="email" name="email" placeholder="Enter your email">

            <label for="password">Password:</label>
            <input type="password" id="password" name="password" placeholder="Enter
your password">

            <label for="gender">Gender:</label>
            <select id="gender" name="gender">
                <option value="">--Select--</option>
                <option value="male">Male</option>
                <option value="female">Female</option>
                <option value="other">Other</option>
            </select>
            <input type="submit" value="Register">
        </form>
</body>
</html>
```

Output:



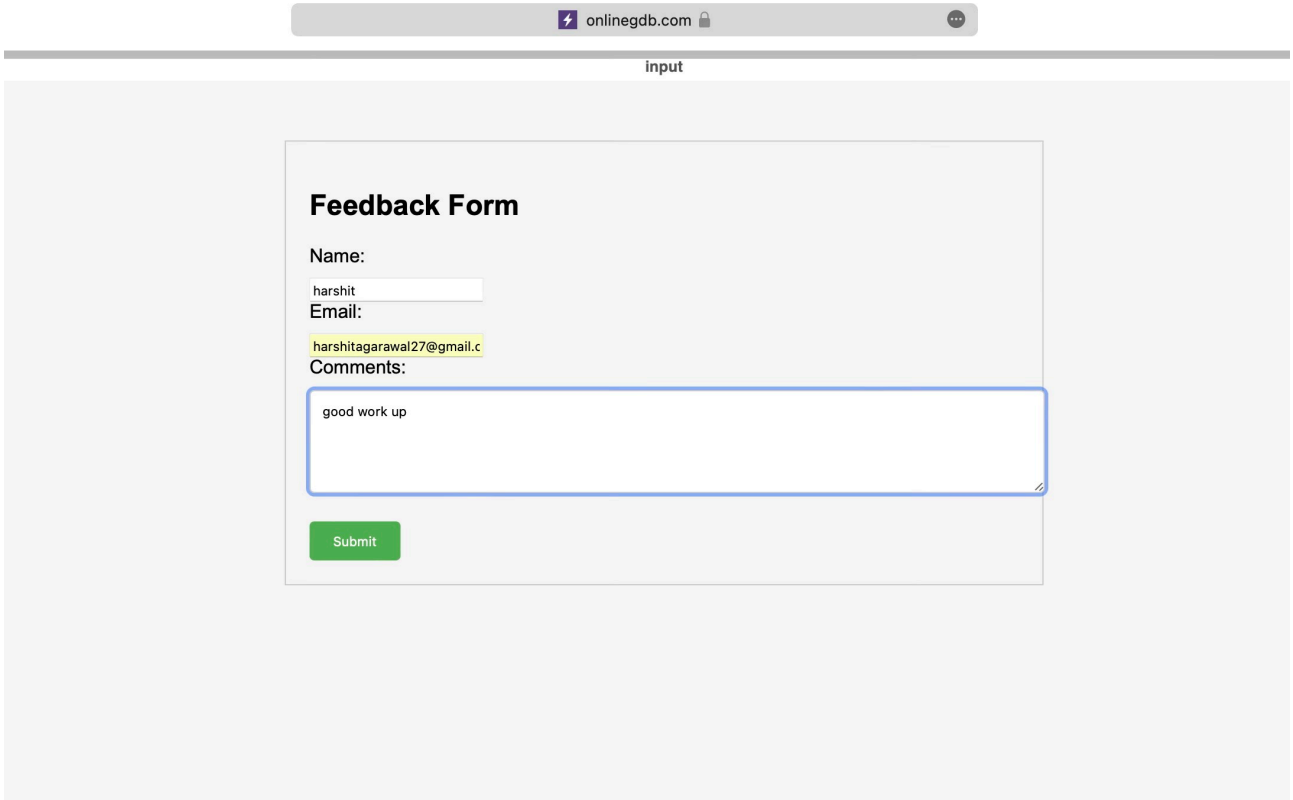
HTML program to design feedback form.

Code:

```
<!DOCTYPE html>
<html>
<head>
	<title>Feedback Form</title>
	<style>
		body {
			font-family: Arial, sans-serif;
		}

		form {
			border: 1px solid #ccc;
			padding: 20px;
			margin: 50px auto;
			max-width: 600px;
		}

		label {
			display: block;
			margin-bottom: 10px;
		}

		textarea {
			width: 100%;
			padding: 10px;
			margin-bottom: 20px;
			border: 1px solid #ccc;
			border-radius: 4px;
		}
```

```
            button[type="submit"] {
                background-color: #4CAF50;
                color: white;
                padding: 10px 20px;
                border: none;
                border-radius: 4px;
                cursor: pointer;
            }

            button[type="submit"]:hover {
                background-color: #45a049;
            }
        </style>
</head>
<body>
        <form action="submit_feedback.php" method="post">
            <h2>Feedback Form</h2>
            <label for="name">Name:</label>
            <input type="text" id="name" name="name" required>
            <label for="email">Email:</label>
            <input type="email" id="email" name="email" required>
            <label for="comments">Comments:</label>
            <textarea id="comments" name="comments" rows="5" required></textarea>
            <button type="submit">Submit</button>
        </form>
</body>
</html>
```

Output:



Experiment 3

A CSS Program to work with background and border properties.

Code:

```
/* Set the background color to light blue */
body {
  background-color: #d3e9f9;
}

/* Add a border to all elements with the class "border-example" */
.border-example {
  border: 2px solid #ccc;
  padding: 10px;
}

/* Add a red border to all elements with the class "red-border-example" */
.red-border-example {
  border: 2px solid red;
  padding: 10px;
}

/* Add a blue border to all elements with the class "blue-border-example" on hover */
.blue-border-example:hover {
  border: 2px solid blue;
  padding: 10px;
}
```

B Java script program to print multiplication table of the given integer.

Code:

```
let num = prompt("Enter an integer: ");

for (let i = 1; i <= 10; i++) {
  console.log(num + " x " + i + " = " + num*i);
                                    }
```

Output

```
node /tmp/e8h21RPbCr.js
Enter an integer: 7
7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70
```

C Java script program to validate the registration form contents with the following rules

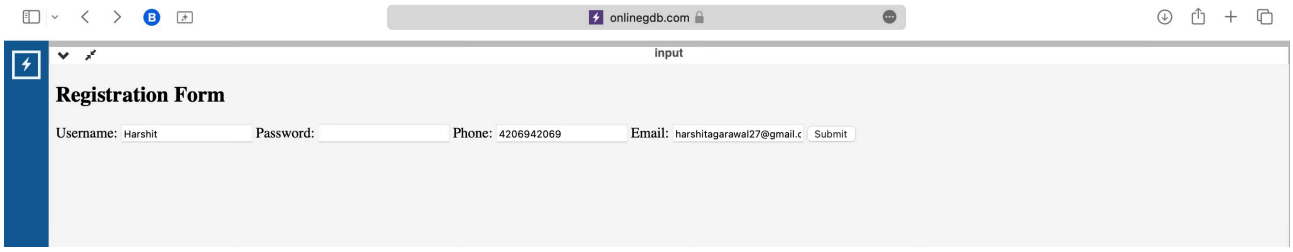
i. Username Must starts with Uppercase followed by set of lowercase letters or digits.
ii. Password must contain only uppercase letters and length must be in between 8 to 12.
iii. Phone number contains 10 digits.
iv. E-mail must follow some predefined format(example@domain.com)

Code:

```
<!DOCTYPE html>
<html>
<head>
	<title>Registration Form</title>
	<script>
		function validateForm() {
			let username = document.getElementById("username").value;
			let password = document.getElementById("password").value;
			let phone = document.getElementById("phone").value;
			let email = document.getElementById("email").value;

			// Check if username is valid
			let usernameRegex = /^[A-Z][a-z0-9]+$/;
			if (!usernameRegex.test(username)) {
				alert("Username must start with an uppercase letter, followed by lowercase letters or digits");
				return false;
			}

			// Check if password is valid
			let passwordRegex = /^[A-Z]{8,12}$/;
			if (!passwordRegex.test(password)) {
				alert("Password must contain only uppercase letters and be between 8 and 12 characters long");
				return false;
			}

			// Check if phone number is valid
			let phoneRegex = /^\d{10}$/;
			if (!phoneRegex.test(phone)) {
				alert("Phone number must contain 10 digits");
				return false;
			}

			// Check if email is valid
			let emailRegex = /^[^\s@]+@[^\s@]+\.[^\s@]+$/;
			if (!emailRegex.test(email)) {
				alert("Email must follow the format example@domain.com");
				return false;
			}
```

```
                // If all fields are valid, return true
                return true;
            }
        </script>
</head>
<body>
        <h2>Registration Form</h2>
        <form onsubmit="return validateForm()">
            <label for="username">Username:</label>
            <input type="text" id="username" name="username" required>
            <label for="password">Password:</label>
            <input type="password" id="password" name="password" required>
            <label for="phone">Phone:</label>
            <input type="tel" id="phone" name="phone" required>
            <label for="email">Email:</label>
            <input type="email" id="email" name="email" required>
            <button type="submit">Submit</button>
        </form>
</body>
</html>
```

Output:



Experiment 4

JDBC Program to perform various DML Operations on the database using Statement.

Code:

```
import java.sql.*;

public class DmlStatementExample {
    public static void main(String[] args) {
        // Database credentials
        String url = "jdbc:mysql://localhost:3306/mydb";
        String user = "root";
        String password = "password";

        // SQL statements
        String insertSql = "INSERT INTO employees (id, name, age, salary) VALUES (1, 'John
Doe', 25, 50000)";
        String updateSql = "UPDATE employees SET salary = 60000 WHERE name = 'John
Doe'";
        String deleteSql = "DELETE FROM employees WHERE name = 'John Doe'";

        try {
            // Create a connection to the database
            Connection conn = DriverManager.getConnection(url, user, password);

            // Create a statement object
            Statement stmt = conn.createStatement();

            // Insert a record
            int rowsAffected = stmt.executeUpdate(insertSql);
            System.out.println(rowsAffected + " row(s) inserted.");

            // Update a record
            rowsAffected = stmt.executeUpdate(updateSql);
            System.out.println(rowsAffected + " row(s) updated.");

            // Delete a record
            rowsAffected = stmt.executeUpdate(deleteSql);
            System.out.println(rowsAffected + " row(s) deleted.");

            // Close the statement and connection
            stmt.close();
            conn.close();
        } catch (SQLException e) {
            System.out.println("Error: " + e.getMessage());
        }
    }
}
```

Experiment 6

A JSP Program to print multiplication table.

Code;:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <title>Multiplication Table</title>
    </head>
    <body>
        <h1>Multiplication Table</h1>
        <table>
            <%
                int num = Integer.parseInt(request.getParameter("num"));
                for(int i=1; i<=10; i++){
                    out.println("<tr>");
                    out.println("<td>" + num + " x " + i + "</td>");
                    out.println("<td>=</td>");
                    out.println("<td>" + (num * i) + "</td>");
                    out.println("</tr>");
                }
            %>
        </table>
    </body>
</html>
```

Output:

B JSP Program to handle the exceptions.

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <title>Exception Handling</title>
    </head>
    <body>
        <h1>Exception Handling</h1>
        <%
            try {
                // Code that may throw an exception
                int result = 10 / 0;
                out.println("Result: " + result);
            } catch(Exception e) {
                // Code to handle the exception
                out.println("<p>An error occurred: " + e.getMessage() + "</p>");
            }
        %>
    </body>
```

</html>
Output:

C JSP Program to retrieve the student data from database based on his roll number.

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.sql.*" %>
<!DOCTYPE html>
<html>
    <head>
        <title>Student Data</title>
    </head>
    <body>
        <h1>Student Data</h1>
        <%
            // Retrieve the roll number parameter
            int rollNum = Integer.parseInt(request.getParameter("rollNum"));

            // Connect to the database
            String url = "jdbc:mysql://localhost:3306/students";
            String username = "root";
            String password = "password";
            Connection conn = DriverManager.getConnection(url, username, password);

            // Retrieve the student data from the database
            PreparedStatement pstmt = conn.prepareStatement("SELECT * FROM students WHERE
roll_num = ?");
            pstmt.setInt(1, rollNum);
            ResultSet rs = pstmt.executeQuery();

            // Output the student data
            if(rs.next()) {
                out.println("<p>Name: " + rs.getString("name") + "</p>");
                out.println("<p>Roll Number: " + rs.getInt("roll_num") + "</p>");
                out.println("<p>Age: " + rs.getInt("age") + "</p>");
            } else {
                out.println("<p>Student with roll number " + rollNum + " not found</p>");
            }

            // Close the database connection
            conn.close();
        %>
    </body>
</html>
```

Experiment 7

A PHP program to work with associative arrays.

Code:

```
<?php
// Define an associative array with key-value pairs
$student = array(
    "name" => "John Doe",
    "rollNum" => 12345,
    "age" => 20,
    "address" => "123 Main Street"
);

// Access and print values using keys
echo "Student Name: " . $student["name"] . "<br>";
echo "Roll Number: " . $student["rollNum"] . "<br>";
echo "Age: " . $student["age"] . "<br>";
echo "Address: " . $student["address"] . "<br>";

// Add a new key-value pair to the array
$student["email"] = "john.doe@example.com";

// Print the updated array
print_r($student);
?>
```

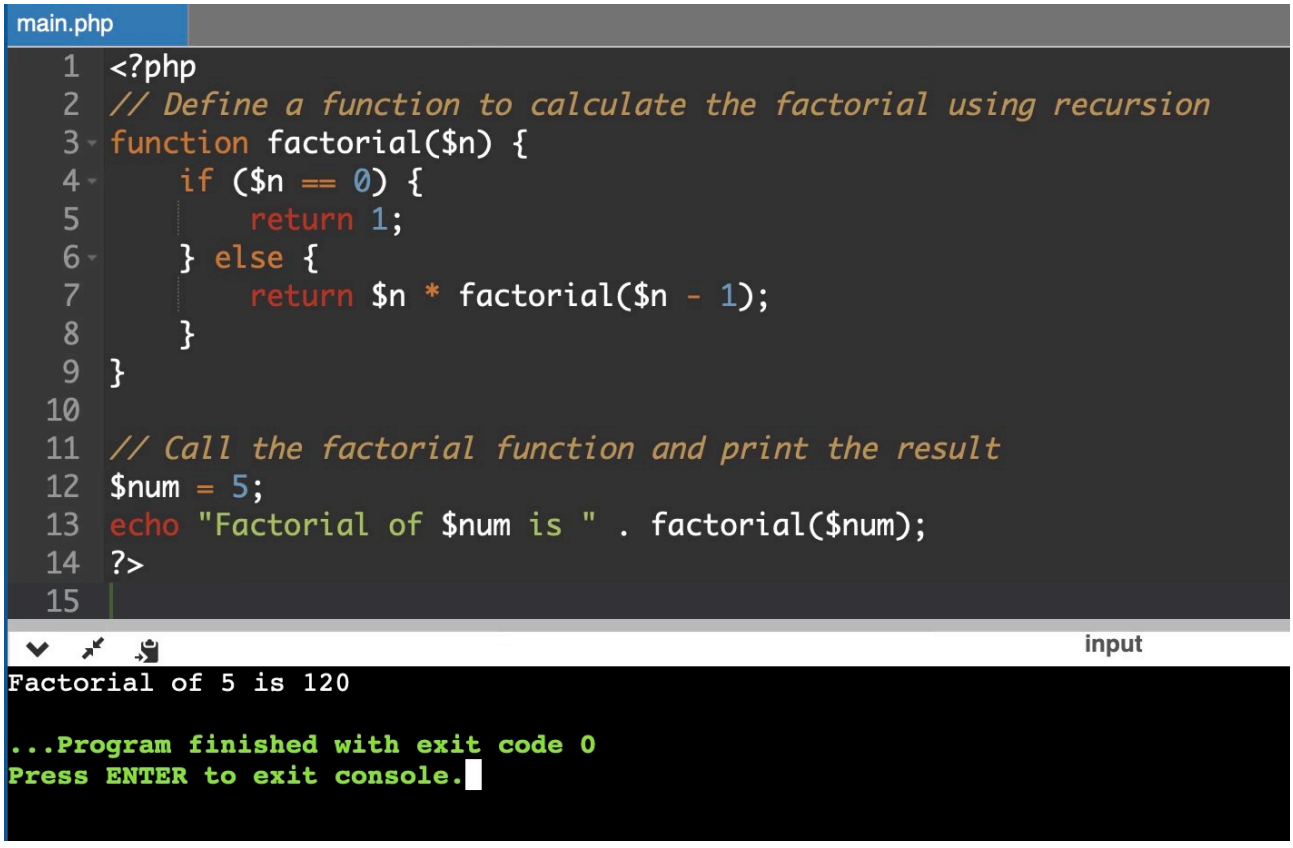
Output:

B PHP program to find factorial using Recursion.

Code:

```
<?php
// Define a function to calculate the factorial using recursion
function factorial($n) {
    if ($n == 0) {
        return 1;
    } else {
        return $n * factorial($n - 1);
    }
}

// Call the factorial function and print the result
$num = 5;
echo "Factorial of $num is " . factorial($num);
?>
```

Output:



C PHP Program to perform various DDL operations on MySQL database.

Code:

```
<?php
// Create a connection to the database
$servername = "localhost";
```

```
$username = "root";
$password = "";
$dbname = "mydb";

$conn = mysqli_connect($servername, $username, $password, $dbname);

// Check connection
if (!$conn) {
    die("Connection failed: " . mysqli_connect_error());
}

// Create a table
$sql = "CREATE TABLE customers (
id INT(6) UNSIGNED AUTO_INCREMENT PRIMARY KEY,
firstname VARCHAR(30) NOT NULL,
lastname VARCHAR(30) NOT NULL,
email VARCHAR(50),
reg_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP
)";

if (mysqli_query($conn, $sql)) {
    echo "Table created successfully";
} else {
    echo "Error creating table: " . mysqli_error($conn);
}

// Alter a table
$sql = "ALTER TABLE customers ADD phone VARCHAR(15)";

if (mysqli_query($conn, $sql)) {
    echo "Table altered successfully";
} else {
    echo "Error altering table: " . mysqli_error($conn);
}

// Drop a table
$sql = "DROP TABLE customers";

if (mysqli_query($conn, $sql)) {
    echo "Table dropped successfully";
} else {
    echo "Error dropping table: " . mysqli_error($conn);
}

// Close the connection
mysqli_close($conn);
?>
```

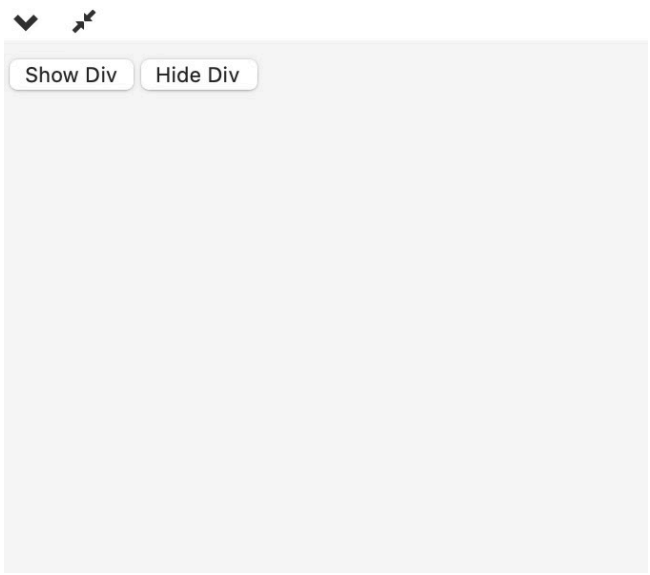
Experiment 8

Write a JQuery Script to implement hide() and show()effects.

Code:

```
<!DOCTYPE html>
<html>
<head>
	<title>Hide and Show Effects</title>
	<script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
	<style type="text/css">
		#myDiv {
			width: 200px;
			height: 200px;
			background-color: red;
			color: white;
			text-align: center;
			padding-top: 80px;
			font-size: 24px;
			display: none;
		}
	</style>
	<script type="text/javascript">
		$(document).ready(function() {
			// Hide the div on page load
			$("#myDiv").hide();

			// Show the div when the button is clicked
			$("#showBtn").click(function() {
				$("#myDiv").show();
			});

			// Hide the div when the button is clicked
			$("#hideBtn").click(function() {
				$("#myDiv").hide();
			});
		});
	</script>
</head>
<body>
	<button id="showBtn">Show Div</button>
	<button id="hideBtn">Hide Div</button>
	<div id="myDiv">This is a hidden div</div>
</body>
</html>
```

Output:



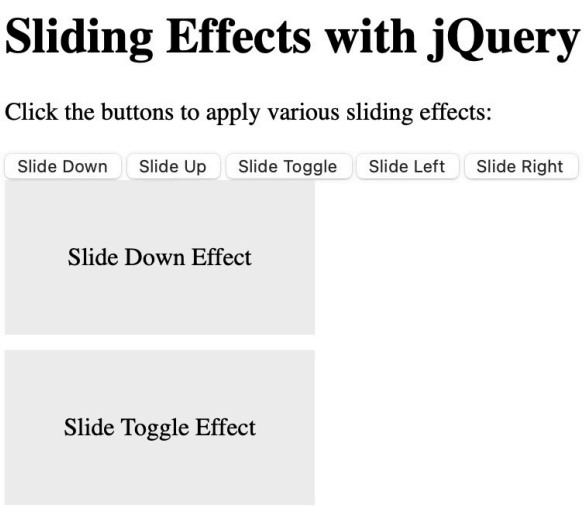
B Write a JQuery Script to apply various sliding effects.

Code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Sliding Effects with jQuery</title>
  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
  <script>
    $(document).ready(function() {
      // Slide down effect
      $("#slide-down-button").click(function() {
        $("#slide-down-div").slideDown();
      });

      // Slide up effect
      $("#slide-up-button").click(function() {
        $("#slide-up-div").slideUp();
      });

      // Slide toggle effect
      $("#slide-toggle-button").click(function() {
        $("#slide-toggle-div").slideToggle();
      });

      // Slide left effect
      $("#slide-left-button").click(function() {
        $("#slide-left-div").animate({
          left: '-=250px'
        }, 1000);
      });

      // Slide right effect
      $("#slide-right-button").click(function() {
```

```
      $("#slide-right-div").animate({
        left: '+=250px'
      }, 1000);
    });
  });
 </script>
 <style>
  #slide-down-div,
  #slide-up-div,
  #slide-toggle-div,
  #slide-left-div,
  #slide-right-div {
    display: none;
    width: 200px;
    height: 100px;
    background-color: #eee;
    margin-bottom: 10px;
    text-align: center;
    line-height: 100px;
  }
 </style>
</head>
<body>
 <h1>Sliding Effects with jQuery</h1>

 <p>Click the buttons to apply various sliding effects:</p>

 <button id="slide-down-button">Slide Down</button>
 <button id="slide-up-button">Slide Up</button>
 <button id="slide-toggle-button">Slide Toggle</button>
 <button id="slide-left-button">Slide Left</button>
 <button id="slide-right-button">Slide Right</button>

 <div id="slide-down-div">Slide Down Effect</div>
 <div id="slide-up-div">Slide Up Effect</div>
 <div id="slide-toggle-div">Slide Toggle Effect</div>
 <div id="slide-left-div">Slide Left Effect</div>
 <div id="slide-right-div">Slide Right Effect</div>
</body>
</html>
```

Output:



Experiment 9

Implement shopping cart with Angular JS.

Code:

HTML

```
<div ng-app="shoppingCartApp" ng-controller="shoppingCartCtrl">
  <h2>Shopping Cart</h2>
  <table>
    <tr>
      <th>Product</th>
      <th>Price</th>
      <th>Quantity</th>
      <th>Total</th>
    </tr>
    <tr ng-repeat="item in items">
      <td>{{item.name}}</td>
      <td>{{item.price}}</td>
      <td>
        <button ng-click="decreaseQuantity(item)">-</button>
        {{item.quantity}}
        <button ng-click="increaseQuantity(item)">+</button>
      </td>
      <td>{{item.price * item.quantity}}</td>
    </tr>
    <tr>
      <td colspan="3">Total:</td>
      <td>{{total()}}</td>
    </tr>
  </table>
</div>
```

JAVASCRIPT(Angular JS)

```
var app = angular.module('shoppingCartApp', []);

app.controller('shoppingCartCtrl', function($scope) {
  $scope.items = [
    {name: 'Item 1', price: 10, quantity: 1},
    {name: 'Item 2', price: 20, quantity: 2},
    {name: 'Item 3', price: 30, quantity: 3}
  ];

  $scope.total = function() {
    var total = 0;
    angular.forEach($scope.items, function(item) {
      total += item.price * item.quantity;
    });
    return total;
  };
```

```
  $scope.increaseQuantity = function(item) {
    item.quantity++;
  };

  $scope.decreaseQuantity = function(item) {
    if (item.quantity > 1) {
      item.quantity--;
    }
  };
});
```

Output:

Shopping Cart

Product	Price	Quantity	Total
{{item.name}}	{{item.price}}	- {{item.quantity}} +	{{item.price * item.quantity}}
Total:			{{total()}}

Write a program to display data in tables in various forms.

HTML:

```
<!DOCTYPE html>
<html>
<head>
	<title>Data Table</title>
	<link rel="stylesheet" type="text/css" href="styles.css">
</head>
<body>
	<h1>Data Table</h1>

	<table>
		<thead>
			<tr>
				<th>Name</th>
				<th>Age</th>
				<th>Gender</th>
				<th>City</th>
			</tr>
		</thead>
		<tbody>
			<tr>
				<td>John Doe</td>
				<td>30</td>
				<td>Male</td>
				<td>New York</td>
			</tr>
			<tr>
				<td>Jane Doe</td>
				<td>25</td>
```

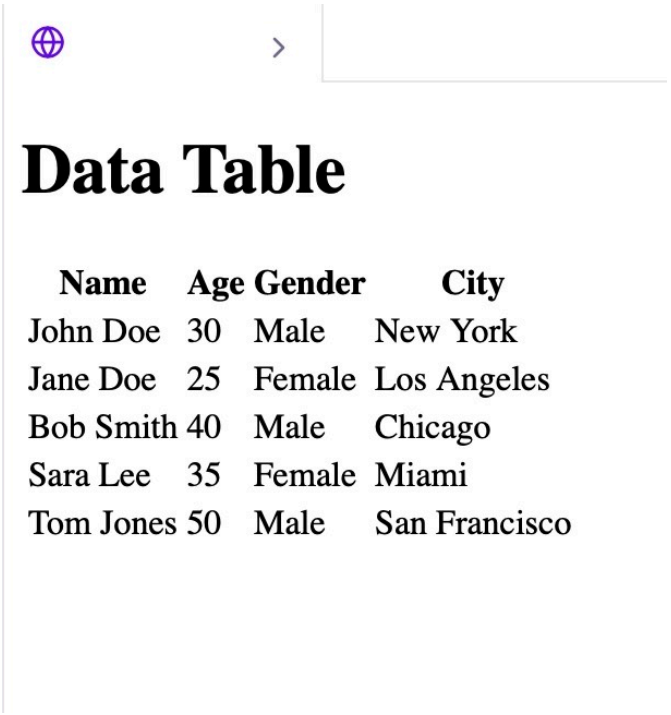
```
                        <td>Female</td>
                        <td>Los Angeles</td>
                    </tr>
                    <tr>
                        <td>Bob Smith</td>
                        <td>40</td>
                        <td>Male</td>
                        <td>Chicago</td>
                    </tr>
                    <tr>
                        <td>Sara Lee</td>
                        <td>35</td>
                        <td>Female</td>
                        <td>Miami</td>
                    </tr>
                    <tr>
                        <td>Tom Jones</td>
                        <td>50</td>
                        <td>Male</td>
                        <td>San Francisco</td>
                    </tr>
                </tbody>
        </table>

</body>
</html>
```

CSS:

```
body {
        font-family: Arial, sans-serif;
        background-color: #f2f2f2;
}

h1 {
        text-align: center;
        color: #333;
        margin-top: 50px;
        margin-bottom: 50px;
}

table {
        border-collapse: collapse;
        margin: 0 auto;
        background-color: #fff;
        box-shadow: 0px 0px 10px #888888;
}

table th {
        padding: 10px;
        background-color: #666;
        color: #fff;
        font-weight: bold;
        text-align: left;
}

table td {
        padding: 10px;
        border: 1px solid #ddd;
```

```
}

table tr:nth-child(even) {
	background-color: #f2f2f2;
}

table tr:hover {
	background-color: #ccc;
}
```

Output:



Experiment 10

Explain the step by step process how to create database & collection in MongoDB. Create a collection with student name and store 5 rows in that collection.

Here are the step by step process to create a database and collection in MongoDB:

- Install MongoDB: Firstly, download and install MongoDB on your system. You can follow the official documentation to do the same.
- Start MongoDB server: After installation, start the MongoDB server by running the following command on your terminal: mongod
- Open MongoDB shell: Open another terminal and run the following command to open MongoDB shell: mongo. This will open up the MongoDB shell and you can execute commands from here.
- Create a database: To create a new database, use the use command followed by the name of the database you want to create. For example, to create a database named "school", run the following command: use school
- Create a collection: To create a collection in the database, use the db.createCollection() command followed by the name of the collection you want to create. For example, to create a collection named "students", run the following command: db.createCollection("students")
- Insert data into the collection: To insert data into the collection, use the db.collectionName.insert() command followed by the data you want to insert. For example, to insert 5 rows of data into the "students" collection, run the following command:

```
db.students.insert([
  { name: "John Doe", age: 25, gender: "Male", course: "Engineering" },
  { name: "Jane Smith", age: 22, gender: "Female", course: "Medical" },
  { name: "Bob Johnson", age: 27, gender: "Male", course: "Law" },
  { name: "Emily Williams", age: 20, gender: "Female", course: "Arts" },
  { name: "Mike Brown", age: 23, gender: "Male", course: "Business" }
])
```

Experiment 5

Servlet program to read the parameters from user interface and display welcome message.

Code:

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class WelcomeServlet extends HttpServlet {

    public void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        response.setContentType("text/html");

        PrintWriter out = response.getWriter();

        // Read the parameters from the HTML form
        String firstName = request.getParameter("firstName");
        String lastName = request.getParameter("lastName");

        // Display a welcome message
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Welcome " + firstName + " " + lastName + "</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Welcome " + firstName + " " + lastName + "!</h1>");
        out.println("</body>");
        out.println("</html>");
    }
}
```

Servlet program to work with HttpSession Object.

Code:

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class SessionServlet extends HttpServlet {

    public void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        response.setContentType("text/html");

        PrintWriter out = response.getWriter();
```

```
        // Get the HttpSession object
        HttpSession session = request.getSession(true);

        // Get the value of the "name" attribute from the session
        String name = (String) session.getAttribute("name");

        // Check if the name attribute is present in the session
        if (name != null) {
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Welcome back " + name + "</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<h1>Welcome back " + name + "!</h1>");
            out.println("</body>");
            out.println("</html>");
        } else {
            // Get the value of the "firstName" parameter from the request
            String firstName = request.getParameter("firstName");

            // Set the "name" attribute in the session
            session.setAttribute("name", firstName);

            out.println("<html>");
            out.println("<head>");
            out.println("<title>Welcome " + firstName + "</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<h1>Welcome " + firstName + "!</h1>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}
```

Demo on Generating dynamic content with form processing using Servlets.

Code:

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class FormServlet extends HttpServlet {

    public void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        response.setContentType("text/html");

        PrintWriter out = response.getWriter();

        // Get the values of the form parameters
        String firstName = request.getParameter("firstName");
        String lastName = request.getParameter("lastName");
```

```
        String gender = request.getParameter("gender");
        String[] hobbies = request.getParameterValues("hobbies");

        // Generate dynamic content based on the form parameters
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Form Processing Result</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Form Processing Result</h1>");
        out.println("<p>Your name is " + firstName + " " + lastName + ".</p>");
        out.println("<p>Your gender is " + gender + ".</p>");

        if (hobbies != null && hobbies.length > 0) {
            out.println("<p>Your hobbies are:</p>");
            out.println("<ul>");
            for (String hobby : hobbies) {
                out.println("<li>" + hobby + "</li>");
            }
            out.println("</ul>");
        }

        out.println("</body>");
        out.println("</html>");
    }
}
```