

# Full Stack Development Lab

## Lab Report

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Batch: 2022-2026, A1

Branch: AI-ML

### Experiment Number: 2

#### Title:

Responsive Registration Form with Client-Side Validation.

#### Aim:

To design and implement a fully responsive registration form using HTML and CSS, focusing on user experience and accessibility across various devices. The form incorporates client-side validation to ensure accurate user input.

#### Objectives:

1. Design a registration form that includes fields for personal and account information, such as name, email, password, and more.
2. Implement responsive design techniques to ensure the form adjusts seamlessly across devices (mobile, tablet, desktop).
3. Add client-side validation using HTML5 attributes and JavaScript to enhance data accuracy and prevent submission errors.
4. Provide an aesthetically pleasing and user-friendly interface with clear error messages.

#### Algorithms Used:

1. **HTML5 Validation:** Utilize built-in validation attributes like required, email, minlength, and pattern to ensure basic input validation.
2. **JavaScript Validation:** Supplement HTML5 with JavaScript to:
  - Validate fields like Confirm Password for matching with Password.
  - Display concise error messages dynamically.

3. **Responsive Design:** Implement media queries to adjust the layout and styles for various screen sizes.

### Implementation and Output:

## Registration Form

**First Name:**

**Last Name:**

**Email:**

**Password:**

**Confirm Password:**

**Date of Birth:**

**Gender:**

**Country:**

**Profile Picture:**

This page says

Form Submitted Successfully!

OK

aparna.iyer06@gmail.com

**Password:**

**Confirm Password:**

**Date of Birth:**

**Gender:**

**Country:**

**Profile Picture:**

Register

Aparna

**Last Name:**

**Email:**

**Password:**

**Confirm Password:**

**Date of Birth:**

**Gender:**

**Country:**

**Profile Picture:**

Register

### Code Snippets:

```

Experiment_2.html X # style:
Experiment_2.html > ...
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4 <meta charset="UTF-8">
5 <meta name="viewport" content="width=device-width, initial-scale=1.0">
6 <title>Registration Form</title>
7 <link rel="stylesheet" href="styles.css">
8 </head>
9 <body>
10 <div class="container">
11 <h2 class="title">Registration Form</h2>
12 <form id="registrationForm" onsubmit="return validateForm()">
13 <label for="firstName">First Name:</label>
14 <input type="text" id="firstName" name="firstName" required>
15 <span class="error" id="firstNameError"></span>
16
17 <label for="lastName">Last Name:</label>
18 <input type="text" id="lastName" name="lastName" required>
19 <span class="error" id="lastNameError"></span>
20
21 <label for="email">Email:</label>
22 <input type="email" id="email" name="email" required>
23 <span class="error" id="emailError"></span>
24
25 <label for="password">Password:</label>
26 <input type="password" id="password" name="password" required>
27 <span class="error" id="passwordError"></span>
28
29 <label for="confirmPassword">Confirm Password:</label>
30 <input type="password" id="confirmPassword" name="confirmPassword" required>
31 <span class="error" id="confirmPasswordError"></span>
32
33 <label for="dob">Date of Birth:</label>
34 <input type="date" id="dob" name="dob" required>
35 <span class="error" id="dobError"></span>
36
37 <label for="gender">Gender:</label>

```

```
Experiment_2.html X # style: :: II
Experiment_2.html > html > body > div.container > form#registrationForm > input#email
2  <html lang="en">
9  <body>
10  <div class="container">
12  <form id="registrationForm" onsubmit="return validateForm()">
36
37      <label for="gender">Gender:</label>
38      <select id="gender" name="gender" required>
39          <option value="">Select</option>
40          <option value="male">Male</option>
41          <option value="female">Female</option>
42          <option value="other">Other</option>
43      </select>
44      <span class="error" id="genderError"></span>
45
46      <label for="country">Country:</label>
47      <select id="country" name="country" required>
48          <option value="">Select</option>
49          <option value="India">India</option>
50          <option value="USA">USA</option>
51          <option value="UK">UK</option>
52          <option value="Australia">Australia</option>
53      </select>
54      <span class="error" id="countryError"></span>
55
56      <label for="profilePicture">Profile Picture:</label>
57      <input type="file" id="profilePicture" name="profilePicture" accept="image/*" required>
58      <span class="error" id="profilePictureError"></span>
59
60      <button type="submit">Register</button>
61  </form>
62 </div>
63 <script>
64     function validateForm() {
65         let isValid = true;
66         let errorMessage = "";
67
68         let firstName = document.getElementById("firstName").value.trim();
```

```

Experiment_2.html > # style: ...
> Experiment_2.html > html > body > div.container > form#registrationForm > input#email
2   <html lang="en">
9   <body>
63  <script>
64      function validateForm() {
67
68          let firstName = document.getElementById("firstName").value.trim();
69          let lastName = document.getElementById("lastName").value.trim();
70          let email = document.getElementById("email").value.trim();
71          let password = document.getElementById("password").value.trim();
72          let confirmPassword = document.getElementById("confirmPassword").value.trim();
73
74          let nameRegex = /^[A-Za-z]+$/;
75          let emailRegex = /^[^@\\s]+@[^@\\s]+\\.com$/;
76
77          if (!nameRegex.test(firstName)) {
78              errorMessage += "First Name should contain only alphabets.\n";
79              isValid = false;
80          }
81          if (!nameRegex.test(lastName)) {
82              errorMessage += "Last Name should contain only alphabets.\n";
83              isValid = false;
84          }
85          if (!emailRegex.test(email)) {
86              errorMessage += "Email should be in a valid format (e.g., example@domain.com).\n";
87              isValid = false;
88          }
89          if (password !== confirmPassword) {
90              errorMessage += "Passwords do not match.\n";
91              isValid = false;
92          }
93
94          if (!isValid) {
95              alert("Please correct the following errors before submitting:\n\n" + errorMessage);
96              return false;
97          }
98
99          alert("Form Submitted Successfully!");

```

Experiment\_2.html X # style. ⋮ || ↺ ⬇ ⬆ ↻ □ ▾

Experiment\_2.html > html > body > div.container > form#registrationForm > input#email

```
2  <html lang="en">
9  <body>
63  <script>
64      function validateForm() {
99          alert("Form Submitted Successfully!");
100         document.getElementById("registrationForm").reset();
101         return false;
102     }
103 </script>
104 <style>
105     .title {
106         text-align: center;
107         font-size: 1.8rem;
108     }
109     .container {
110         width: 90%;
111         max-width: 400px;
112         margin: auto;
113     }
114     label, input, select, button {
115         font-size: 0.9rem;
116     }
117 </style>
118 </body>
119 </html>
120
```

Experiment\_2.html # styles.css X

```
# styles.css > button:hover
1  /* General Styling */
2  body {
3      font-family: Arial, sans-serif;
4      background-color: #f4f4f4;
5      display: flex;
6      justify-content: center;
7      align-items: center;
8      height: 100vh;
9      margin: 0;
10 }
11
12 /* Container */
13 .container {
14     background: white;
15     padding: 20px;
16     border-radius: 10px;
17     box-shadow: 0px 4px 10px rgba(0, 0, 0, 0.1);
18     width: 100%;
19     max-width: 400px;
20 }
21
22 /* Title */
23 .title {
24     text-align: center;
25     font-size: 24px;
26     margin-bottom: 20px;
27 }
28
29 /* Form Styling */
30 form {
31     display: flex;
32     flex-direction: column;
33 }
34
35 label {
36     margin-bottom: 5px;
37     font-weight: bold;
```

```
<> Experiment_2.html # styles.css X
# styles.css > input:focus
34
35 label {
36     margin-bottom: 5px;
37     font-weight: bold;
38 }
39
40 input, select {
41     padding: 8px;
42     margin-bottom: 10px;
43     border: 1px solid #ccc;
44     border-radius: 5px;
45     font-size: 14px;
46 }
47
48 input:focus, select:focus {
49     outline: none;
50     border-color: #007bff;
51     box-shadow: 0 0 5px rgba(0, 123, 255, 0.5);
52 }
53
54 /* Error Messages */
55 .error {
56     color: red;
57     font-size: 12px;
58     margin-bottom: 10px;
59 }
60
61 /* Button Styling */
62 button {
63     background-color: #007bff;
64     color: white;
65     padding: 10px;
66     border: none;
67     border-radius: 5px;
68     cursor: pointer;
69     font-size: 16px;
```



```
Experiment_2.html # styles.css X
# styles.css > input:focus
55 .error {
59 }
60
61 /* Button Styling */
62 button {
63     background-color: #007bff;
64     color: white;
65     padding: 10px;
66     border: none;
67     border-radius: 5px;
68     cursor: pointer;
69     font-size: 16px;
70 }
71
72
73 button:hover {
74     background-color: #0056b3;
75 }
76
77 /* Responsive Design */
78 @media (max-width: 480px) {
79     .container {
80         width: 90%;
81     }
82 }
83
```

## Testing:

This page says

Please correct the following errors before submitting:

Passwords do not match.

OK

Password:

.....

Confirm Password:

.....

Date of Birth:

04 - 06 - 2004

Gender:

Female

Country:

India

Profile Picture:

Choose File Beige Bordered Gen...in Profile Picture.png

Register

Aparna

Last Name:

Iyer

Email:

aparna.iyer06gmail.com

Please include an '@' in the email address. 'aparna.iyer06gmail.com' is missing

.....

Confirm Password:

.....

Date of Birth:

11 - 02 - 2025

Gender:

Female

Country:

India

Profile Picture:

Choose File Beige Bordered Gen...in Profile Picture.png

Register

Aparna

Last Name:

Iyer

Email:

aparna.iyer06@gmail.com

Password:

.....

Confirm Password:

.....

Date of Birth:

04 - 06 - 2004

Gender:

Female

Country:

India

Profile Picture:

Choose File No file chosen

Please select a file.

Register

Aparna

Last Name:

Iyer

Email:

aparna.iyer06@gmail.com

Password:

.....

Confirm Password:

.....

Date of Birth:

04 - 06 - 2004

Gender:

Female

Country:

Select

Profile Picture:

Please select an item in the list.

Choose File Beige Bordered Gen...in Profile Picture.png

Register

Aparna

Last Name:

Email:

Please fill out this field.

aparna.iyer06@gmail.com

Password:

.....

Confirm Password:

.....

Date of Birth:

04 - 06 - 2004

Gender:

Female

Country:

India

Profile Picture:

Choose File Beige Bordered Gen...in Profile Picture.png

Register

**Results:**

1. Successfully created a registration form with a cohesive design that adapts seamlessly across different devices.
2. Implemented robust client-side validation to handle various input errors and guide users.
3. Provided clear error feedback for a better user experience.
4. Achieved a user-friendly interface with modern styling and interactive behaviour.

**Challenges:**

1. Designing a responsive layout compatible with a wide range of devices and screen resolutions.
2. Handling edge cases in form validation, such as mismatched passwords or invalid email formats.
3. Ensuring an intuitive and visually appealing user interface.

**Solutions:**

1. Used CSS Flexbox and media queries to create a responsive and adaptive layout.
2. Combined HTML5 validation with custom JavaScript to handle complex validation requirements.
3. Styled form elements using modern CSS techniques, ensuring clarity and ease of use.

**Conclusion:**

The experiment successfully demonstrates the creation of a fully responsive registration form that prioritizes user experience and accessibility. By combining HTML5, CSS, and JavaScript, the form ensures accurate user input and provides a cohesive design across devices. This approach can be applied to real-world projects to enhance form usability and effectiveness.