

Ex. No: 2	Form Validation
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Aim: To design and implement a client-side form validation script for a user registration form on a website containing the following fields: Username, Email, Password, Phone Number, Confirm Password.

Design:

Username:

Email:

Password:

Confirm Password:

Phone Number:

Program :

Index.html

```
<!-- Form Page enabled with Form Validation -->

<!DOCTYPE html>

<html>
  <head>
    <title>Form</title>
    <script src="main.js"></script>
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.min.css">
    <link rel="stylesheet" href="styles/style.css">
  </head>
```

```
<body>
  <div>
    <h2><u>Sign-up now!</u></h2>
    <br>
    <form onsubmit="return validate()" id="mainform" name="mainform">
      <table>
        <tbody>
          <tr>
            <td>
              <p class="label">Email:</p>
            </td>
            <td>
              <input
                type="email"
                name="email"
                id="email"
                placeholder="johndoe@example.com"
                required
              />
            </td>
          </tr>
          <tr>
            <td>
              <p class="label">Username:</p>
            </td>
            <td>
              <input
                type="text"
                name="username"
                id="username"
                placeholder="Username"
                required
              />
            </td>
          </tr>
          <tr>
            <td>
              <p class="label">Password:</p>
            </td>
            <td>
              <input
                type="password"
                name="password"
                id="password"
                placeholder="Password"
                required
              />
            </td>
          </tr>
        </tbody>
      </table>
    </form>
  </div>
</body>
```

```

        <i class="fa fa-eye" id="togglePassword"
onclick="togglePassword()">
    </td>
</tr>
<tr>
    <td>
        <p class="label">Re-enter Password:</p>
    </td>
    <td>
        <input
            type="password"
            name="password-confirmation"
            id="password-confirmation"
            placeholder="Confirm password"
            required
        />
        <i class="fa fa-eye"
id="togglePasswordConfirmation" onclick="togglePasswordConfirmation()">
    </td>
</tr>
<tr>
    <td>
        <p class="label">Phone:</p>
    </td>
    <td>
        <input
            type="tel"
            name="phone"
            id="phone"
            placeholder="E.g. +91 9988776655"
            required
        />
    </td>
</tr>
<tr>
    <td colspan="2" id="submit-row">
        <input type="submit" value="Submit" id="submit-
button" />
    </td>
</tr>
</tbody>
</table>
</form>
</div>
</body>
</html>

```

main.js

```
/* Helper Functions for Form Validation */

function isValidUsername(name) {
  if (name === undefined) return false;
  if (typeof(name) !== 'string') return false;

  const alphanumericRegex = /^[a-zA-Z0-9]{3,20}$/;
  // ^ = Pattern must match start of string
  // $ = Pattern must match end of string
  if (!alphanumericRegex.test(name)) return false;

  return true;
}

function isValidEmail(email) {
  if (email === undefined) return false;
  if (typeof(email) !== 'string') return false;

  // Source: https://stackabuse.com/validate-email-addresses-with-regular-
  // expressions-in-javascript/
  const emailRegex = /^(?:[a-z0-9!#$%&'*/+=?^_`{|}~-]+(?:\.[a-z0-9!#$%&'*/+=?^_`{|}~-]+)*|"(?:[\x01-\x08\x0b\x0c\x0e-\x1f\x21\x23-\x5b\x5d-\x7f]|\\[\x01-\x09\x0b\x0c\x0e-\x7f])*")@(?:(?:[a-z0-9](?:[a-z0-9-]*[a-z0-9])?)\.)+[a-z0-9](?:[a-z0-9-]*[a-z0-9])?|\\[()!@#%&'*/+=?^_`{|}~;:<>,.?~\\|\\-=""']+)$/;
  // Surround RegEx Patterns with '/' (forward slash)

  if (!emailRegex.test(email)) return false;

  return true;
}

function isValidPassword(password) {
  if (password === undefined) return false;
  if (typeof(password) !== 'string') return false;

  const uppercaseRegex = /^(?=.*[A-Z]+)/;
  const lowercaseRegex = /^(?=.*[a-z]+)/;
  const numberRegex = /^(?=.*[0-9]+)/;
  const specialCharRegex = /^(?=.*[!@#$%^&*()_+{}\\|\\:;<>,.?~\\|\\-=""']+)/;
  // '?' is a positive assertion (a.k.a.) Lookaround

  if (!uppercaseRegex.test(password) ||
    !lowercaseRegex.test(password) ||
```

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        !numberRegex.test(password) ||
        !specialCharRegex.test(password)) return false;

    if (password.length < 8) return false;

    return true;
}

function isEqualString(A, B) {
    if (A === undefined || B === undefined ) return false;
    if (typeof(A) !== 'string' || typeof(B) !== 'string') return false;

    if (A !== B) return false;

    return true;
}

function isValidPhoneNumber(phone) {
    if (phone === undefined) return false;
    if (typeof(phone) !== 'string') return false;

    const phoneRegex = /\+\d{2,3}\s?\d{10}/;
    if (!phoneRegex.test(phone)) return false;

    return true;
}

function togglePassword() {
    // Toggle Text
    const password = document.getElementById("password");
    const type = password.getAttribute('type') === "password" ? "text" :
"password";
    password.setAttribute('type', type);

    // Toggle Eye Icon
    const icon = document.getElementById("togglePassword");
    const newIcon = icon.classList.value === 'fa fa-eye' ? 'fa fa-eye-slash' :
'fa fa-eye';
    icon.className = newIcon;
}

function togglePasswordConfirmation() {
    // Toggle Text
    const password = document.getElementById("password-confirmation");
    const type = password.getAttribute('type') === "password" ? "text" :
"password";
    password.setAttribute('type', type);
}

```

```

// Toggle Eye Icon
const icon = document.getElementById("togglePasswordConfirmation");
const newIcon = icon.classList.value === 'fa fa-eye' ? 'fa fa-eye-slash' :
'fa fa-eye';
icon.className = newIcon;
}

function validate() {
    const email = document.mainform.email; // DOM - (i) Access by Name
    const username = document.mainform.username;
    const password = document.getElementById('password'); // DOM - (ii) Access by
ID Attribute
    const passwordConfirmation = document.getElementById('password-
confirmation');
    const phone = document.mainform.phone;;

    const invalidEmailMsg = "Please enter a valid email address.";
    const invalidUsernameMsg = "Username must include:\n\n(i) 8-20
characters\n(ii) Only alphanumeric characters [A-Z] [a-z] [0-9]";
    const invalidPasswordMsg = "Password must include:\n\n(i) At least one
capital letter\n(ii) At least one lowercase letter\n(iii) At least one special
character\n(iv) At least one number\n(v) Minimum 8 characters.";
    const invalidPasswordConfirmationMsg = "Passwords do not match";
    const invalidPhoneMsg = "Phone number must include:\n\n(i) Country
code,\n(ii) Followed by 10-digit mobile number.\n\nE.g. +249 8877998899";

    if (!isValidEmail(email.value)) {
        alert(invalidEmailMsg);
        return false;
    }
    else if (!isValidUsername(username.value)) {
        alert(invalidUsernameMsg);
        return false;
    }
    else if (!isValidPassword(password.value)) {
        alert(invalidPasswordMsg);
        return false;
    }
    else if (!isEqualString(password.value, passwordConfirmation.value)) {
        alert(invalidPasswordConfirmationMsg);
        return false;
    }
    else if (!isValidPhoneNumber(phone.value)) {
        alert(invalidPhoneMsg);
        return false;
    }

    alert("Form submitted successfully!");
}

```

```
    return true;
}
```

styles/style.css:

```
/* Default Stylesheet for Form Validation */

/* General */

*{
    box-sizing: border-box;
}

body {
    background-color: #EEEEEE;
}

div {
    padding: 15px;
}

h2 {
    text-align: center;
    font-size: 30px;
    padding: 0 15px 0 10px;
    font-family: monospace;
    font-weight: bold;
}

/* Table */

table {
    box-shadow: 5px 5px 2px;
    margin-left: auto;
    margin-right: auto;
    border-collapse: collapse;
    border: 2px solid #393E46 !important;
    letter-spacing: 1px;
    font-family: sans-serif;
    font-size: 0.8rem;
    padding: 20px;
}
```

```
td {
    border: 1px solid rgb(190, 190, 190);
    padding: 7px 5px 2px 5px;
    text-align: center;
}

tr:nth-child(even) td {
    background-color: rgb(250, 250, 250);
}

tr:nth-child(odd) td {
    background-color: rgb(240, 240, 240);
}

/* Input */

p.label {
    float: left;
    font-size: 15px;
    padding: 0 15px 0 5px;
}

input:not(#submit-button, #password, #password-confirmation) {
    font-size: 20px;
    border: 0;
    margin: 0 10px 0 10px;
    outline: 0;
    background: transparent;
    border-bottom: 1px solid black;
    width: 300px;
}

::placeholder {
    font-size: 15px;
}

#password, #password-confirmation {
    font-size: 20px;
    border: 0;
    margin: 0 10px 0 10px;
    outline: 0;
    background: transparent;
    border-bottom: 1px solid black;
    width: 260px;
}

.fa {
    font-size: 20px;
```



```
margin-left: 5px;
margin-right: 10px;
cursor: pointer;
}

/* Submit */

#submit-row {
padding: 10px 0 10px 0;
}

#submit-button {
font-size: 15px;
background-color: #FBA1B7;
color: #ffffff;
font-family: monospace;
font-weight: bold;
padding: 11px 20px 11px 20px;
border-radius: 10px;
}

#submit-button:hover {
font-size: 15px;
background-color: rgb(207, 107, 132);
color: #ffffff;
font-family: monospace;
font-weight: bold;
cursor: pointer;
padding: 11px 20px 11px 20px;
border-radius: 10px;
}
```

Output:

Result: A form validation script for a user registration form on a website has been implemented.

Sign-up now!

Email:	johndoe@example.com
Username:	Username
Password:	Password 
Re-enter Password:	Confirm password 
Phone:	E.g. +91 9988776655
Submit	