**HTML Forms**

**1. What is an HTML Form?**

**Definition:**

* An HTML form is a **container for user input elements**, allowing users to **submit data** to a server or interact with the page using JavaScript.

**Syntax:**

<form action="submit.php" method="post">

<!-- input elements go here -->

</form>

**Attributes of <form> tag:**

| **Attribute** | **Description** |
| --- | --- |
| action | URL to which form data is submitted |
| method | HTTP method: GET (default) or POST |
| id / class | Unique identifiers or class names for styling or JS |
| target | Where to display the response (\_self, \_blank) |
| autocomplete | on / off for browser autofill |

**2. Input Types**

The <input> tag can accept different types for various purposes.

| **Type** | **Purpose / Usage** |
| --- | --- |
| text | Single-line text input |
| password | Masked input for passwords |
| email | Email input; browser validates email format |
| number | Numeric input; supports min, max, step |
| tel | Phone number input |
| url | URL input; browser validates format |
| date | Date picker |
| time | Time picker |
| checkbox | Multi-selection boxes |
| radio | Single-selection from multiple options |
| file | File upload |
| submit | Submit button |
| reset | Reset form fields |
| color | Color picker |
| range | Slider input for numbers |
| hidden | Hidden field (not visible to user) |

**Example:**

<form>

<input type="text" placeholder="Enter Name">

<input type="email" placeholder="Enter Email">

<input type="password" placeholder="Enter Password">

<input type="submit" value="Register">

</form>

**3. Labels**

**Definition:**

* <label> tags **associate text with form controls**, improving accessibility.

**Key Points:**

1. Clicking the label **focuses the associated input**.
2. Use for attribute to connect label to input's id.

**Example:**

<label for="username">Name:</label>

<input type="text" id="username" name="username">

**4. Placeholders**

**Definition:**

* placeholder attribute displays **hint text inside the input field**, disappearing when the user types.

**Example:**

<input type="email" placeholder="Enter your email">

**Note:**

* Placeholders are **not a replacement for labels**. Always use both for accessibility.

**5. Required Fields**

**Definition:**

* required attribute ensures that a field **must be filled** before submission.

**Example:**

<input type="text" name="username" required>

* The browser will **prevent submission** if this field is empty.

**6. Basic Form Validation**

HTML5 provides **built-in validation** for many input types.

**A. Browser-side validation**

| **Attribute** | **Purpose** |
| --- | --- |
| required | Field must be filled |
| type="email" | Must be a valid email format |
| min / max | Numeric limits |
| minlength / maxlength | Minimum/maximum characters |
| pattern | Custom regex pattern for text |
| step | For numeric inputs, increments |

**Example:**

<form>

<input type="text" name="username" placeholder="Username" required minlength="3">

<input type="email" name="email" placeholder="Email" required>

<input type="password" name="password" placeholder="Password" required pattern="[A-Za-z0-9]{6,}">

<input type="number" name="age" min="18" max="60">

<input type="submit" value="Register">

</form>

**Explanation:**

* username → must be at least 3 characters
* email → must be a valid email
* password → minimum 6 characters, letters & numbers
* age → must be between 18 and 60

**B. Checkbox & Radio Validation**

<label><input type="checkbox" name="terms" required> Accept Terms</label>

<p>Choose gender:</p>

<label><input type="radio" name="gender" value="male" required> Male</label>

<label><input type="radio" name="gender" value="female"> Female</label>

**7. Form Example – Complete**

<form action="submit.php" method="post">

<label for="username">Name:</label>

<input type="text" id="username" name="username" placeholder="Enter your name" required>

<label for="email">Email:</label>

<input type="email" id="email" name="email" placeholder="Enter your email" required>

<label for="password">Password:</label>

<input type="password" id="password" name="password" placeholder="Enter password" required pattern="[A-Za-z0-9]{6,}">

<label><input type="checkbox" name="terms" required> Accept Terms and Conditions</label>

<input type="submit" value="Register">

</form>

**8. Interview Tips**

1. Always associate **labels with inputs** for accessibility.
2. Use **placeholders for hints** but never as a replacement for labels.
3. Understand **HTML5 validation attributes** (required, pattern, min, max, etc.)
4. Know the difference:
   * **client-side validation** → browser prevents submission
   * **server-side validation** → PHP, Node.js, or backend checks data
5. Be ready to explain **input types and their browser behavior** (e.g., email type triggers email validation).