

## Day 8

# “Web Development + Security”

## Forms and Inputs:

### What are Forms in HTML?

In HTML, a form is a container that allows users to enter data and send it to a server for processing. Forms are used in almost every website for things like login, signup, search boxes, feedback, or payments.

A form is created using the `<form>` tag, and inside it, you can place input fields, checkboxes, radio buttons, dropdowns, and buttons.

### What are Input tags in HTML?

In HTML, the `<input>` tag is used inside forms to create fields where users can enter data. It's a self-closing tag and its behaviour changes depending on the type attribute.

### What is Label tag in HTML?

The `<label>` tag in HTML is used to provide a text description for a form input element (like a text box, checkbox, or radio button). It improves usability (clicking on the label focuses/selects the input) and accessibility (screen readers read the label with the input, helping visually impaired users).

A very basic example to show the syntax:

```
index.html > 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>Forms</title>
7 </head>
8 <body>
9   <form action="post">
10    <input type="text" name="username" placeholder="Username">
11  </form>
12 </body>
13 </html>
```

Example: `<label>` tag introduction

```
index.html > 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>Forms</title>
7 </head>
8 <body>
9   <form action="post">
10    <label for="a">Username:</label>
11    <input type="text" id="a" name="username" placeholder="Username">
12  </form>
13 </body>
14 </html>
```

**Important <form> attributes:**

Attribute	What it Does	Example
action	URL where the form data is sent	<form action="/submit">
method	HTTP method: GET (visible in URL) or POST (hidden in body)	<form method="post">
enctype	Encoding type (important for file uploads). Common: application/x-www-form-urlencoded, multipart/form-data	<form enctype="multipart/form-data">
target	Where to display the response (_self, _blank, _parent, _top)	<form target="_blank">
autocomplete	Enables or disables autofill (on / off)	<form autocomplete="off">
novalidate	Disables built-in HTML validation	<form novalidate>
name	Identifies the form (used in JavaScript)	<form name="loginForm">
accept-charset	Character encoding (default is UTF-8)	<form accept-charset="UTF-8">

**Important <input> attributes:**

Attribute	What it Does	Example
type	Defines input type (text, email, password, etc.)	<input type="email">
name	Key for sending data to server	<input name="username">
id	Unique identifier, often used with <label> or JS	<input id="email">
value	Default/pre-filled value	<input type="text" value="Aditya">
placeholder	Hint text shown inside the field	<input type="text" placeholder="Enter name">
required	Makes input mandatory	<input type="password" required>
readonly	Field cannot be edited, but is sent with form	<input type="text" value="123" readonly>
disabled	Field is inactive and not submitted	<input type="text" disabled>

Attribute	What it Does	Example
maxlength minlength	Restrict number of characters	<input type="text" maxlength="10">
pattern	Regex pattern for validation	<input type="text" pattern="[A-Za-z]{3,}">
autocomplete	Suggests saved values (on/off)	<input autocomplete="off">
accept	Restricts file types (for type="file")	<input type="file" accept=".jpg,.png">
step, min, max	For numbers/date inputs	<input type="number" min="1" max="100">

#### Important <label> attributes:

Attribute	What it Does	Example
for	Connects the label to an input field using the input's id. Clicking the label will focus/activate the input.	<label for="email">Email:</label><input id="email" type="email">
form	Associates the label with a form (useful if the input is outside the <form>).	<label for="username" form="signupForm">Username:</label>
Global attributes	Since <label> is a normal HTML element, it also supports global attributes like class, id, style, title.	<label for="password" class="bold">Password:</label>

## What is textarea tag in HTML?

The `<textarea>` tag in HTML is used when you want users to enter multi-line text, like comments, feedback, or messages. Unlike `<input type="text">`, which is for single-line input, `<textarea>` lets users type paragraphs.

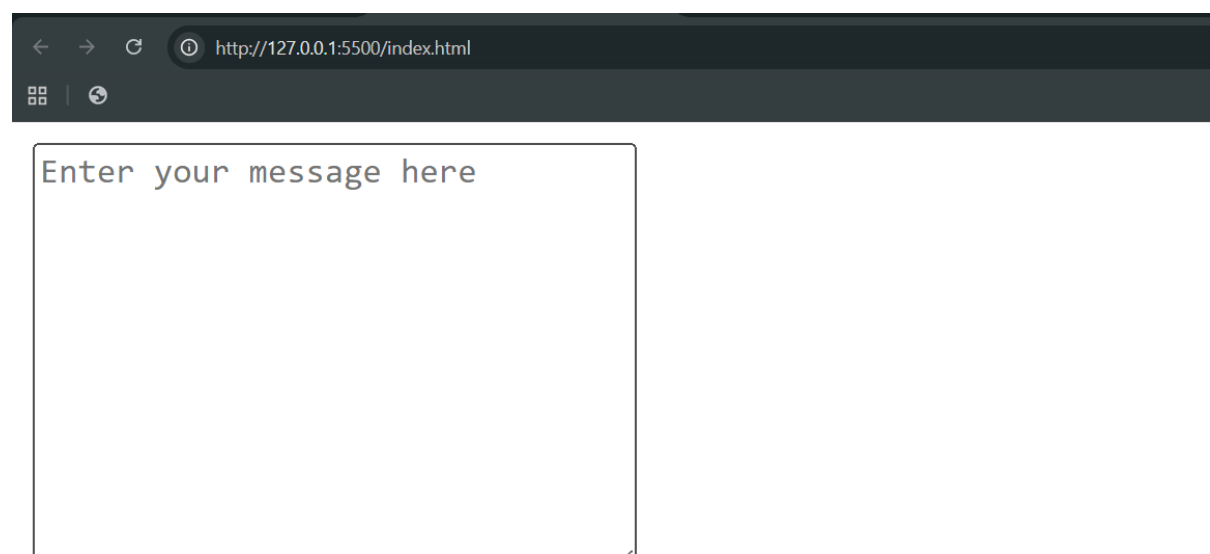
### Key Attributes of `<textarea>`

- `name` → the field's name (sent to server).
- `rows` → visible height (number of text lines).
- `cols` → visible width (number of characters per line).
- `placeholder` → hint text inside the box.
- `maxlength` / `minlength` → limit character length.
- `readonly` → user can't edit but value is sent.
- `disabled` → user can't edit, and value is not sent.
- `required` → must be filled before submitting.

Example:

```
index.html > html > body
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5    <meta charset="UTF-8">
6    <meta name="viewport" content="width=device-width, initial-scale=1.0">
7    <title>Forms</title>
8  </head>
9
10 <body>
11   <!-- <form action="post">
12     <label for="a">Username:</label>
13     <input type="text" id="a" name="username" placeholder="Username">
14   </form> -->
15
16   <textarea name="message" id="message" cols="30" rows="10" placeholder="Enter your message here"></textarea>
17 </body>
18
19 </html>
```

Output:



The screenshot shows a web browser window with the address bar displaying 'http://127.0.0.1:5500/index.html'. Below the address bar, there is a text input field with a light gray border and a light gray background. The placeholder text 'Enter your message here' is visible in a light gray font. The input field is rectangular and occupies most of the width of the browser window.

## What is <select> tag in HTML

The <select> tag in HTML is used to create a dropdown list where users can pick one (or sometimes multiple) options. It works with <option> tags inside it.

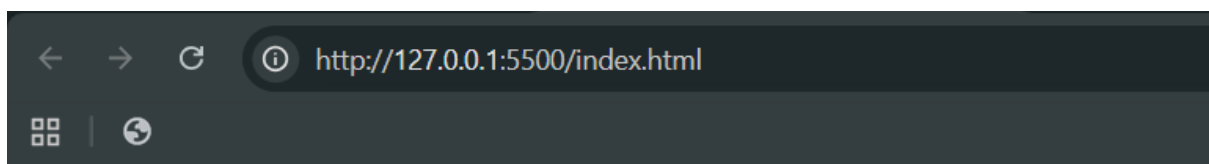
### Key Attributes of <select>

- **name** → the field's name (sent to server).
- **id** → unique identifier (used with <label> or JS).
- **multiple** → allows selecting more than one option.
- **size** → number of options visible at once.
- **required** → makes selection mandatory.
- **disabled** → disables the dropdown.
- **autofocus** → focuses dropdown when page loads.

Example:

```
<!--Example of select tag-->
<label for="cars">Choose a car:</label>
<select name="cars" id="cars" multiple>
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="mercedes">Mercedes</option>
  <option value="audi">Audi</option>
</select>
```

Output:



Choose a car:

Volvo

Saab

Mercedes

Audi