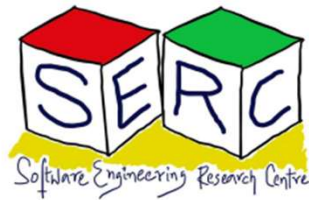


HTML

CS6.302 - Software System Development
Monsoon 2025



- **HTML** stands for **H**yper**T**ext **M**arkup **L**anguage
- Standard markup language for creating web pages
- Describes the structure of a webpage semantically
- Cornerstone technology of the World Wide Web, alongside CSS and JavaScript

- An HTML document has a nested structure defined by tags
- The basic skeleton includes:
 - `<!DOCTYPE html>` declaration
 - `<html>` element that wraps all content
 - `<head>` for metadata and scripts/styles
 - `<body>` for visible content



The content inside the `<body>` section will be displayed in a browser. The content inside the `<title>` element will be shown in the browser's title bar or in the page's tab.

- An HTML element consists of:
 - Start tag: <tagname>
 - Content: Text and other elements
 - End tag: </tagname>
- Some elements are self-closing (e.g., ,
)

Examples

```
<h1>My First Heading</h1>  
<p>My first paragraph.</p>
```

- Modern browsers have developer tools for inspecting elements
- Access methods:
 - Right-click + "Inspect" or "Inspect Element"
 - Keyboard: F12 or Ctrl+Shift+I (Cmd+Option+I on Mac)
- Uses:
 - View HTML structure
 - Edit CSS styles in real-time
 - Debug JavaScript
 - Test responsive designs

- 1 **Create a new text file** using any text editor
- 2 **Write your HTML code**

```
<!DOCTYPE html>  
<html>  
  <head>  
    <title>My First Web Page</title>  
  </head>  
  <body>  
    <h1>Hello, World!</h1>  
    <p>This is my first web page.</p>  
  </body>  
</html>
```

- 3 **Save with .html extension** (e.g., index.html)
- 4 **Open in a web browser** (double-click the file)

HTML Attributes

- Provide additional information about elements
- Always specified in the start tag
- Format: `<element attribute="value">`
- Common attributes:
 - id - Unique identifier
 - class - Group elements for styling
 - style - Inline CSS styles
 - src - Source for embedded content
 - href - Hyperlink target

Example

```
<a href="https://example.com" target="_blank">
  Visit Example
</a>
```

Paragraphs & Headings

```
<p>This is a paragraph.</p>
```

```
<h1>Main Heading</h1>
```

```
<h2>Subheading</h2>
```

```
<h3>Section heading</h3>
```

Links (Anchors)

```
<!-- External link -->
```

```
<a href="https://example.com">
  Visit Example
</a>
```

```
<!-- Page link -->
```

```
<a href="about.html">About</a>
```

```
<!-- Section link -->
```

```
<a href="#section1">Section</a>
```

Images

```



```

Line Breaks & Dividers

```
<p>Line 1<br>Line 2</p>

<p>Above the line</p>
<hr>
<p>Below the line</p>
```

Title and Favicon

```
<!DOCTYPE html>
<html>
<head>
  <title>Page Title</title>
  <link rel="icon"
        href="favicon.ico"
        type="image/x-icon">
</head>
<body>
  <!-- Content -->
</body>
</html>
```

HTML Comments

```
<!-- This is a comment -->

<!--
  Multi-line
  comment
-->
```

Unordered List

```
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>
```

Ordered List

```
<ol>
  <li>First step</li>
  <li>Second step</li>
  <li>Third step</li>
</ol>
```

Description List

```
<dl>
  <dt>Coffee</dt>
  <dd>Black hot drink</dd>
  <dt>Milk</dt>
  <dd>White cold drink</dd>
</dl>
```


`Bold text`
`Important text`
`<i>Italic text</i>`
`Emphasized text`
`<mark>Highlighted text</mark>`

`<small>Smaller text</small>`
`Deleted text`
`<ins>Inserted text</ins>`
`_{Subscript text}`
`^{Superscript text}`

Example Usage

```
<p>Water is H<sub>2</sub>O. The result is 5<sup>2</sup> = 25.</p>
<p>Price: <del>$50</del> <ins>$40</ins> <strong>Sale!</strong></p>
```

Block-level Elements

- Start on a new line
- Take full width available
- Examples:
 - `<div>`
 - `<h1>-<h6>`
 - `<p>`
 - ``, ``
 - `<table>`

Inline Elements

- Do not start on a new line
- Take only necessary width
- Examples:
 - ``
 - `<a>`
 - ``
 - ``, ``
 - ``, `<i>`

Div Element

- Block-level container
 - Groups content for styling
 - Creates natural breakpoints
- ```
<div class="container">
 <h2>Section Title</h2>
 <p>Paragraph text...</p>
</div>
```

### Span Element

- Inline container
  - Style parts of text
  - No visual change by default
- ```
<p>
  This is <span class="highlight">
    important</span> text.
</p>
```

HTML Classes

- Group similar elements
- Reusable across many elements
- Element can have multiple classes

```
<div class="box highlight">  
    Content  
</div>
```

```
<p class="highlight">  
    Highlighted paragraph  
</p>
```

HTML IDs

- Unique identifier
- Only one per page
- Used for JavaScript access
- Used as anchor links

```
<div id="header">  
    Header content  
</div>
```

```
<a href="#section1">  
    Jump to Section 1  
</a>  
<div id="section1">  
    Section content  
</div>
```