

# HTML Notes

## □ What is HTML?

**HTML** stands for **HyperText Markup Language**. It is the **standard language** used to create **web pages**.

- **HyperText**: Links between web pages.
- **Markup Language**: Tags to define page content like headings, images, etc.

## Basic Structure of an HTML Page

html

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <title>My First Page</title>
```

```
  </head>
```

```
  <body>
```

```
    <h1>Hello, World!</h1>
```

```
    <p>This is my first web page.</p>
```

```
  </body>
```

```
</html>
```

## Explanation:

- `<!DOCTYPE html>` – Declares HTML5 document.

- `<html>` – Root tag.
- `<head>` – Title, metadata, and links.
- `<body>` – Visible content of the webpage.

## □ Important Definitions

### 1. Tag:

A **tag** is a special keyword used in HTML to create elements.

E.g., `<p>`, `<h1>`, `<img>`

### 2. □ Element:

An **element** is everything between an opening tag and a closing tag.

Example:

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

### 3. □ Semantic Tags:

Tags that **clearly describe the meaning of content**.


Examples: `<header>`, `<footer>`, `<article>`, `<nav>`, `<main>`

□ *Helps in SEO and screen readers*

### 4. Block-Level Elements:

Takes full width and starts from a new line.

Examples: `<div>`, `<p>`, `<h1>`

 Block = Big sections.

## 5. ☐ Inline Elements:

Takes only the needed space and stays within a line.

Examples: `<span>`, `<a>`, `<img>`

✂ Inline = Small inside blocks.

## 6. ⌀ Empty Tags:

Tags without closing tag.

Examples: `<br>`, `<img>`, `<hr>`, `<input>`

## 📊 HTML vs HTML5

Feature	HTML	HTML5
Version	Older version (HTML 4.01)	Latest version
Doctype	Long and complex	Simple: <code>&lt;!DOCTYPE html&gt;</code>
Audio/Video	Not supported	Supported natively
Semantic Tags	Not available	Introduced
Mobile Friendly	No	Yes
Graphics	Not supported	<code>&lt;canvas&gt;</code> and SVG supported

Feature	HTML	HTML5
Storage	Cookies only	localStorage, sessionStorage

## New Tags in HTML5

Tag	Purpose	Example
<code>&lt;header&gt;</code> >	Page/Section on top	<code>&lt;header&gt;&lt;h1&gt;Title&lt;/h1&gt;&lt;/header&gt;</code>
<code>&lt;footer&gt;</code> >	Page/Section on bottom	<code>&lt;footer&gt;© 2025&lt;/footer&gt;</code>
<code>&lt;nav&gt;</code>	Navigation links	<code>&lt;nav&gt;&lt;a href="#"&gt;Home&lt;/a&gt;&lt;/nav&gt;</code>
<code>&lt;section&gt;</code> >	Logical grouping	<code>&lt;section&gt;&lt;h2&gt;Intro&lt;/h2&gt;&lt;/section&gt;</code>
<code>&lt;article&gt;</code> >	Independent content	<code>&lt;article&gt;&lt;h2&gt;Post&lt;/h2&gt;&lt;/article&gt;</code>
<code>&lt;aside&gt;</code>	Side content	<code>&lt;aside&gt;Tip Box&lt;/aside&gt;</code>
<code>&lt;main&gt;</code>	Main central content	<code>&lt;main&gt;&lt;p&gt;Core info&lt;/p&gt;&lt;/main&gt;</code>
<code>&lt;figure&gt;</code> >	Media with caption	<code>&lt;figure&gt;&lt;img src=""&gt;&lt;figcaption&gt;Image&lt;/figcaption&gt;&lt;/figure&gt;</code>

Tag	Purpose	Example
<code>&lt;audio&gt;</code> <code>&gt;</code>	Sound	<code>&lt;audio controls</code> <code>src="song.mp3"&gt;&lt;/audio&gt;</code>
<code>&lt;video&gt;</code> <code>&gt;</code>	Video	<code>&lt;video controls src="clip.mp4"&gt;&lt;/video&gt;</code>
<code>&lt;canvas&gt;</code> <code>&gt;</code>	Drawing area (JS- based)	<code>&lt;canvas&gt;&lt;/canvas&gt;</code>



### Image Example

``

- src: Source of image
- alt: Text if image fails
- width: Size



### Hyperlink Example

`<a href="https://www.openai.com">Visit OpenAI</a>`

- href: Link destination
- Text between tags = clickable

### □ Block vs Inline Elements (Visual)

`<div>This is block</div>`

`<div>This is also block</div>`

<span>This is</span>

<span>inline</span>

✂ *Block: occupies full line | Inline: sits side-by-side*

## □ Creative Layout (HTML5)

```
+-----+
|      <header>      |
+-----+
| <nav> Menu Links </nav> |
+-----+
| <main>              |
| +-----+ |
| | <section>        | |
| | <article>         | |
| +-----+ |
| </main>             |
| <aside> Sidebar </aside> |
+-----+
|      <footer>      |
+-----+
```

## 💡 Mini Project Idea

📝 **Make a Student Profile Page** using:

- A heading (<h1>)
- An image (<img>)
- Paragraphs and list of hobbies
- A table showing marks
- A link to your school website

## 🔗 Explanation of HTML Tags with Attributes & Examples

### 1. <html>

- **Purpose:** Root tag that wraps the entire HTML document.
- **Attributes:**
  - lang: Sets the language (e.g., lang="en" for English).

#### ✅ Example:

```
<html lang="en">
```

```
<!-- page content -->
```

```
</html>
```

### 2. <head>

- **Purpose:** Contains metadata (data about the page), links, and the title.
- **Common Tags Inside:**
  - <title>, <meta>, <link>, <style>

✓ **Example:**

```
<head>  
  
<title>My Webpage</title>  
  
<meta charset="UTF-8">  
  
</head>
```

### 3. <body>

- **Purpose:** Holds all the visible content of the web page.
- **Attributes:**
  - bgcolor, text, background (old HTML – not recommended now)

✓ **Example:**

```
<body>  
  
<h1>Welcome</h1>  
  
</body>
```

### 4. <h1> to <h6>

- **Purpose:** Headings from biggest (<h1>) to smallest (<h6>).



- **Attributes:** No special attributes

✓ **Example:**

<h1>Main Title</h1>

<h3>Subheading</h3>

## 5. <p>

- **Purpose:** Defines a paragraph.
- **Attributes:** None commonly used

✓ **Example:**

<p>This is a paragraph of text.</p>

## 6. <a>

- **Purpose:** Creates hyperlinks.
- **Attributes:**
  - href: Destination URL
  - target: Where to open link (\_blank = new tab)
  - title: Tooltip on hover

✓ **Example:**

<a href="https://google.com" target="\_blank" title="Go to Google">Visit Google</a>

## 7. <img>

- **Purpose:** Embeds an image.

- **Attributes:**

- src: Image file location
- alt: Alternative text if image fails
- width, height: Size of image
- title: Tooltip

✓ **Example:**

```

```

## 8. <br>

- **Purpose:** Line break (used to break a line of text).
- **Attributes:** None

✓ **Example:**

Line 1<br>Line 2

## 9. <hr>

- **Purpose:** Horizontal line (used to separate content).
- **Attributes:**
  - width, size, color (older HTML)

✓ **Example:**

```
<hr>
```

## 10. <ul>, <ol>, <li>

- **Purpose:** Lists

- `<ul>` = Unordered list (bullets)
- `<ol>` = Ordered list (numbers)
- `<li>` = List item

✓ **Example:**

```
<ul>  
  <li>HTML</li>  
  <li>CSS</li>  
</ul>
```

## 11. `<div>`

- **Purpose:** Block-level container used for grouping content.
- **Attributes:**
  - id, class, style

✓ **Example:**

```
html  
CopyEdit  
<div style="background-color: lightblue;">  
  <p>Content inside a div.</p>  
</div>
```

## 12. `<span>`

- **Purpose:** Inline container used for styling part of text.
- **Attributes:** style, class, id

✓ **Example:**

`<p>This is <span style="color:red;">important</span> text.</p>`

### 13. Semantic Tags (HTML5)

Tag	Purpose	Example
<code>&lt;header&gt;</code>	Top of page or section	<code>&lt;header&gt;&lt;h1&gt;Site Title&lt;/h1&gt;&lt;/header&gt;</code>
<code>&lt;footer&gt;</code>	Bottom of page or section	<code>&lt;footer&gt;Copyright 2025&lt;/footer&gt;</code>
<code>&lt;nav&gt;</code>	Navigation links	<code>&lt;nav&gt;&lt;a href="#"&gt;Home&lt;/a&gt;&lt;/nav&gt;</code>
<code>&lt;main&gt;</code>	Central content of the page	<code>&lt;main&gt;&lt;h2&gt;Main Content&lt;/h2&gt;&lt;/main&gt;</code>
<code>&lt;section&gt;</code>	Thematic grouping of content	<code>&lt;section&gt;&lt;h2&gt;News&lt;/h2&gt;&lt;/section&gt;</code>
<code>&lt;article&gt;</code>	Independent content (e.g., post)	<code>&lt;article&gt;&lt;h3&gt;Blog Post&lt;/h3&gt;&lt;/article&gt;</code>

Tag	Purpose	Example
<code>&lt;aside&gt;</code>	Side content or ads	<code>&lt;aside&gt;Related Links&lt;/aside&gt;</code>
<code>&lt;figure&gt;</code>	Media with a caption	<code>&lt;figure&gt;&lt;img src="img.jpg"&gt;&lt;figcaption&gt;My Image&lt;/figcaption&gt;&lt;/figure&gt;</code>

## 14. `<audio>`

- **Purpose:** Embeds audio files.
- **Attributes:**
  - src, controls, autoplay, loop

### ✓ Example:

`<audio controls>`

`<source src="sound.mp3" type="audio/mpeg">`

`</audio>`

## 15. `<video>`

- **Purpose:** Embeds video files.
- **Attributes:**
  - src, controls, autoplay, loop, width, height

### ✓ Example:

`<video width="320" height="240" controls>`

`<source src="movie.mp4" type="video/mp4">`

</video>

## 16. <canvas>

- **Purpose:** Used to draw graphics via JavaScript.
- **Attributes:**
  - width, height

### ✓ Example:

```
<canvas id="myCanvas" width="300" height="200" style="border:1px solid #000000;"></canvas>
```

## Summary Table (Quick Review)

Tag	Use	Key Attribute(s)
<a>	Link	href, target
<img>	Image	src, alt, width
<p>	Paragraph	-
 	Line Break	-
<div>	Block container	class, style
<span>	Inline styling	style
<header>	Page header	-
<audio>	Embed sound	src, controls
<video>	Embed video	src, controls, width
<canvas>	Drawing graphics	width, height

