

HTML Notes

☒ Part 1: Basic HTML

- **Definition:** HTML (HyperText Markup Language) is the standard markup language for creating web pages.
- **Importance:** Backbone of every webpage, providing structure and layout.
- **Basic tools:** Text editors like Notepad (Windows) or TextEdit (Mac).

1. HTML Structure

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

- `<!DOCTYPE html>` – Defines the document type.
- `<html>` – Root element of the HTML document.
- `<head>` – Contains metadata (title, links, styles, etc.).
- `<body>` – Contains the visible content.

2. Basic Tags

Tag	Description
<code><h1></code> to <code><h6></code>	Headings (H1 is largest, H6 is smallest)
<code><p></code>	Paragraph
<code></code>	Link
<code></code>	Image
<code></code> , <code></code> , <code></code>	Lists (unordered, ordered, list item)
<code>
</code>	Line break
<code><hr></code>	Horizontal line
<code></code> , <code></code>	Bold, Italic

3. Attributes

Example:

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

- `href` – Link target
- `target="_blank"` – Opens link in a new tab
- `alt` – Alternative text for images

4. Forms

```
<form action="/submit" method="POST">
```

```
<input type="text" placeholder="Enter name" name="name" />
<input type="submit" value="Submit" />
</form>
```

- action – URL to send form data
- method – GET or POST
- input – User input fields

☒ Part 2: Intermediate HTML

1. Semantic Tags

Tag	Purpose
<header>	Defines header section
<nav>	Navigation links
<main>	Main content
<section>	Grouping content
<article>	Independent content block
<footer>	Footer section
<aside>	Sidebar content

Example:

```
<header>
  <nav>
    <a href="#home">Home</a>
    <a href="#about">About</a>
  </nav>
</header>
<main>
  <section>
    <article>
      <h2>Title</h2>
      <p>Content goes here...</p>
    </article>
  </section>
</main>
<footer>
  © 2025 My Website
</footer>
```

2. Tables

```
<table border="1">
  <tr>
    <th>Name</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>John</td>
    <td>25</td>
```

```
</tr>
</table>
```

- `<table>` – Defines a table
- `<tr>` – Table row
- `<th>` – Table header
- `<td>` – Table data

3. Forms (Advanced)

```
<form>
  <label for="email">Email:</label>
  <input type="email" id="email" required />
  <label for="password">Password:</label>
  <input type="password" id="password" required />
  <input type="submit" value="Login" />
</form>
```

- `type="email"` – Validates email format
- `type="password"` – Hides input value
- `required` – Makes input mandatory

4. Multimedia

```
<video controls>
  <source src="video.mp4" type="video/mp4" />
</video>
<audio controls>
  <source src="audio.mp3" type="audio/mpeg" />
</audio>
```

- `controls` – Shows play/pause buttons
- `source` – Defines file path and type

Part 3: Advanced HTML

1. Forms with Validation

```
<form>
  <input type="text" pattern="[A-Za-z]{3,}" title="At least 3 letters" required />
  <input type="submit" />
</form>
```

- `pattern` – Regex for validation
- `title` – Tooltip for guidance

2. HTML5 Canvas

```
<canvas id="myCanvas" width="400" height="200"></canvas>
<script>
  const canvas = document.getElementById('myCanvas');
  const ctx = canvas.getContext('2d');
  ctx.fillStyle = 'blue';
  ctx.fillRect(50, 50, 100, 100);
</script>
```

- `getContext('2d')` – Draw shapes on the canvas

3. HTML5 Storage (LocalStorage)

```
<script>
  localStorage.setItem('name', 'John');
  console.log(localStorage.getItem('name'));
</script>
```

- `localStorage.setItem()` – Stores data
- `localStorage.getItem()` – Retrieves data

4. Meta Tags for SEO

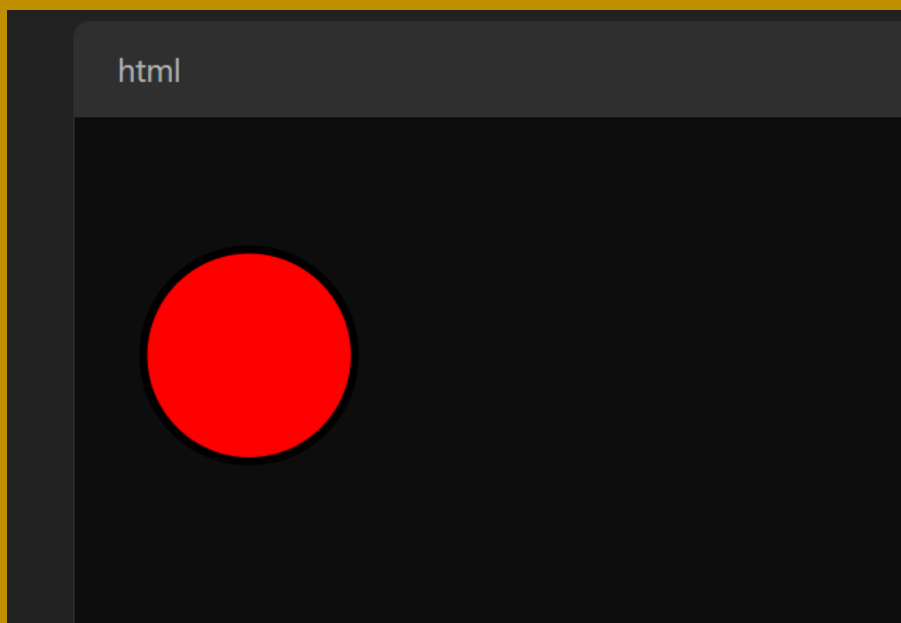
```
<head>
  <meta charset="UTF-8" />
  <meta name="description" content="Free HTML Notes" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0" />
</head>
```

- `charset` – Character encoding
- `description` – Describes the page for search engines
- `viewport` – Responsive design

5. Responsive Design (Using <picture>)

```
<picture>
  <source media="(max-width: 600px)" srcset="small.jpg" />
  <source media="(min-width: 601px)" srcset="large.jpg" />
  
</picture>
```

- `source` – Loads different images based on screen size



HTML Notes (Expanded)

Here are more detailed topics categorized into **Basic**, **Intermediate**, and **Advanced** levels:

☑ Part 1: Basic HTML

1. HTML Document Structure

- `<!DOCTYPE>`
 - `<html>`
 - `<head>`
 - `<body>`
-

2. Text Formatting Tags

Tag	Description
<code></code>	Bold text
<code><i></code>	Italic text
<code><u></code>	Underlined text
<code><sup></code>	Superscript
<code><sub></code>	Subscript
<code><mark></code>	Highlighted text
<code></code>	Strikethrough text

3. HTML Entities

Entity	Description
<code>&lt;</code>	<code><</code> (less than)
<code>&gt;</code>	<code>></code> (greater than)
<code>&amp;</code>	<code>&</code> (ampersand)
<code>&quot;</code>	<code>"</code> (double quote)
<code>&apos;</code>	<code>'</code> (single quote)
<code>&copy;</code>	<code>©</code> (copyright)
<code>&trade;</code>	<code>™</code> (trademark)

Example:

```
<p>&copy; 2025 My Website. All rights reserved.</p>
```

4. Comments

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

5. Links and Navigation

- `href="#"` – Link target
- `target="_blank"` – Opens in a new tab
- `download` – Downloads the linked file

Example:

```
<a href="file.pdf" download>Download PDF</a>
```

6. Lists

- `` – Unordered list
- `` – Ordered list
- `` – List item

Example:

```
<ul>
  <li>Apple</li>
  <li>Banana</li>
</ul>
```

7. Images

- alt – Alternative text for accessibility
- width, height – Resizes the image

Example:

```

```

8. Div and Span

- <div> – Block-level container
- – Inline container

Example:

```
<div>
  <span>This is inline content</span>
</div>
```

☒ Part 2: Intermediate HTML

1. Forms (Extended)

Attribute	Description
placeholder	Hints at the input value
maxlength	Limits input length
readonly	Makes input non-editable
disabled	Disables input

Example:

```
<form>
  <input type="text" placeholder="Enter your name" maxlength="20" />
</form>
```

2. HTML Input Types

Type	Description
text	Single-line text
password	Hidden characters
email	Email validation
number	Numeric input
date	Date picker
file	File upload
checkbox	Checkable box
radio	Radio button
range	Slider input

Example:

```
<input type="range" min="0" max="100" />
```

3. Fieldset and Legend

```
<fieldset>
  <legend>Personal Information</legend>
  <input type="text" placeholder="Name" />
</fieldset>
```

- `fieldset` – Groups form controls
 - `legend` – Title for the group
-

4. Button Types

Type	Description
------	-------------

submit	Submits form
--------	--------------

reset	Resets form
-------	-------------

button	Custom action
--------	---------------

Example:

```
<button type="button" onclick="alert('Clicked!')">Click Me</button>
```

5. Iframe

```
<iframe src="https://example.com" width="600" height="400"></iframe>
```

- Embeds another webpage
-

6. Details and Summary

```
<details>
  <summary>More Info</summary>
  <p>This is additional content.</p>
</details>
```

- `<details>` – Creates a collapsible section
- `<summary>` – Visible label

7. Data Attributes

```
<div data-id="123">Product 123</div>
```

- `data-*` – Custom attribute for JavaScript interaction

☑ Part 3: Advanced HTML

1. SVG (Scalable Vector Graphics)

```
<svg width="100" height="100">
  <circle cx="50" cy="50" r="40" stroke="black" stroke-width="3" fill="red" />
</svg>
```

- Draws shapes directly in HTML

2. Picture Element for Responsive Images

```
<picture>
  <source media="(min-width: 650px)" srcset="large.jpg" />
  <source media="(min-width: 450px)" srcset="medium.jpg" />
  
</picture>
```

3. HTML5 Template

```
<template>
```

```
<div>This is hidden content</div>
```

```
</template>
```

- Template is not rendered until cloned with JavaScript

4. ContentEditable

```
<div contenteditable="true">You can edit this!</div>
```

- Makes an element editable by the user

5. Web Components

- Shadow DOM
- Custom Elements
- HTML Imports

Example:

```
<custom-element></custom-element>
```

6. Drag and Drop

```
<div draggable="true" ondragstart="event.dataTransfer.setData('text/plain', 'Dragged')">
```

```
  Drag Me!
```

```
</div>
```

7. ARIA (Accessible Rich Internet Applications)

Attribute	Purpose
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role	Describes the element's role
------	------------------------------

aria-label	Provides an accessible label
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aria-hidden	Hides from screen readers
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Example:

```
<button aria-label="Close">X</button>
```

8. Meta Tags for Social Sharing

```
<meta property="og:title" content="My Website" />
```

```
<meta property="og:description" content="Best website ever" />
```

```
<meta property="og:image" content="image.jpg" />
```

```
<meta property="og:url" content="https://example.com" />
```

- og: – Open Graph protocol for better social media sharing

9. Favicon

Add in the <head>:

```
<link rel="icon" href="favicon.ico" type="image/x-icon" />
```

10. Progress Bar

```
<progress value="70" max="100"></progress>
```

- Displays task completion status

11. Meter (Measurement)

`<meter value="60" min="0" max="100" low="30" high="80"></meter>`

- Displays a measurement
-