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GROUP OF INSTITUTIONS

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M2-R5.1

CHAPTER-3

HTML- Basics

WEB DESIGNING & PUBLISHING

" Learn • Create • Publish "

Booklet Highlights – HTML Topics

- Text Formatting Tags
- Hyperlinks & Anchors
- Images
- Lists (OL, UL, DL)
- Tables
- Forms & Input Types
- Multimedia (Audio, Video)
- Frames & Iframes
- Special Tags (Marquee, Comment, HR, BR, etc.)



Web Designing Instructor

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Presented By

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"Design is intelligence made visible."

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3.1 Introduction to HTML

HTML (Hyper Text Markup Language) is the standard language used to create and design web pages. It structures the content of websites using **elements** and **tags**, such as headings, paragraphs, links, images, lists, tables, and more.

- **HTML → Hyper Text Markup Language.**
- It is a markup language (not programming) used to create webpages.
- HTML uses **tags** enclosed in < > to define structure and elements of a webpage.
- < open angular bracket
- > closed angular bracket

Features:

- Platform independent
- Simple and easy to learn
- Supports multimedia (images, video, audio)
- Provides links and forms
- Multimedia like audio video.

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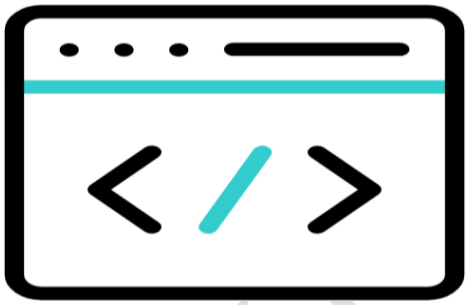
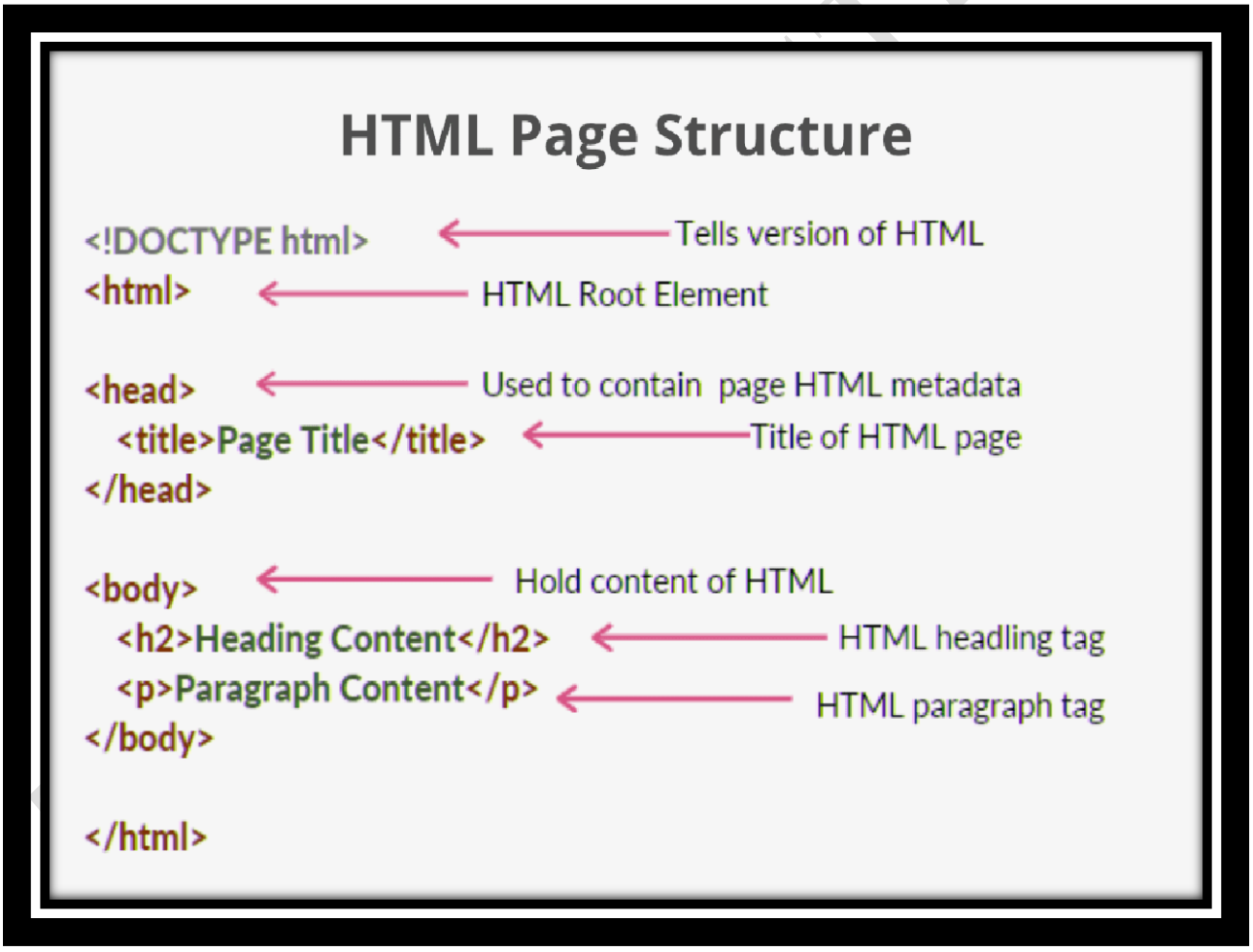
Inventor of HTML



- **Inventor**: ***Tim Berners-Lee***
- **Year**: ***1991***
- **Place**: ***CERN (European Organization for Nuclear Research), Switzerland***

Key Features

- **Hyper Text** refers to the ability to link to other web pages.
- **Markup Language** means it uses tags to define elements on a.



Versions of HTML

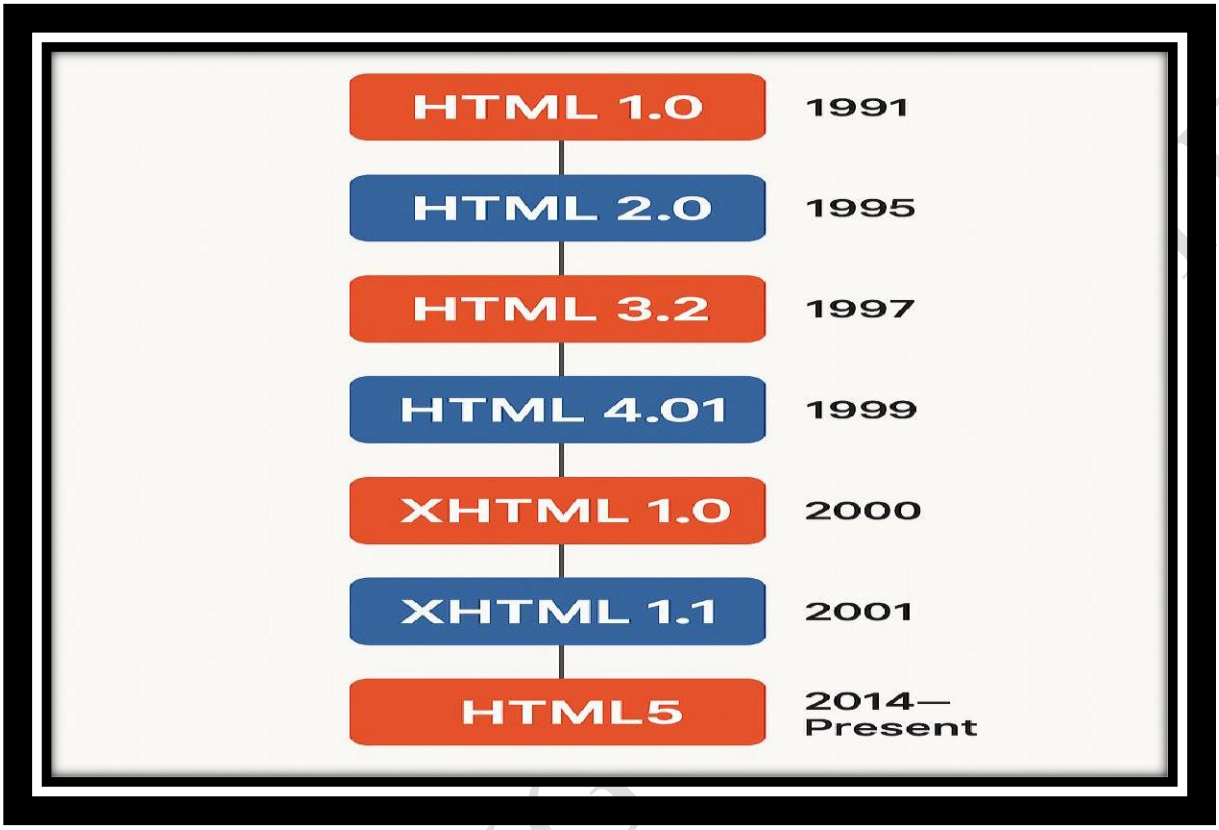


Fig. 1

HTML Essential

- **Platform-independent**: Runs on any browser or device.
- **Base of web**: All websites use HTML at their core.
- **Works with** CSS (for design) and JavaScript (for interactivity).

1. Open Current HTML File in Browser

- **Shortcut:**
  Alt + F5 → Runs the file in your default browser.
  (Same as going to **Run → Launch in Default Browser**)

2. Reload / Refresh in Browser

- Once the file is open in the browser:
  - **F5** → Reload page (normal refresh)
  - **Ctrl + F5** → Hard refresh (reload without cache)

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Timeline: Versions of HTML

Version	Year Released	Key Features
HTML 1.0	**1991**	Basic structure: headings, paragraphs, lists, links. For internal use only.
HTML 2.0	**1995**	First official standard by IETF. Included basic forms and tables.
HTML 3.2	**1997**	Supported scripting (JavaScript), applets, styles. Published by W3C.
HTML 4.01	**1999**	Introduced CSS support, better forms, frames. Three variants: Strict, Transitional, Frameset.
XHTML 1.0	**2000**	HTML as an XML application. Stricter syntax.
XHTML 1.1	**2001**	Modularized XHTML; mainly used for mobile devices.
HTML5	**2014 (final)**	Audio/video tags, canvas, semantic elements, mobile-friendly. Developed by W3C & WHATWG.
HTML Living Standard	***2014–Present (2025)***	Continuously updated by WHATWG. Modern features like <dialog>, <template>, Web Components, AR/VR support, etc.

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Example of HTML Code:

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

Updated in 2025:

- HTML5 is the latest version.
- Supports multimedia (audio, video), responsive design, semantic tags (<section>, <article>, etc.).
- Improved performance, SEO, and accessibility.

Uses of HTML:



- Website development
- Mobile app interfaces
- Email templates
- E-learning content
- Web-based games

Key Features of HTML

1. **Platform Independent** – Runs on any OS or browser.
2. **Markup Language** – Uses tags to format and structure content.
3. **HyperText** – Supports linking to other pages.
4. **Simple Syntax** – Easy to learn and write.

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5. **Multimedia Support** – Supports images, audio, video.
6. **Semantic Elements** – Tags like <section>, <header> for meaning.
7. **Form Handling** – Input fields, buttons, checkboxes, etc.
8. **Offline Capability** – Local storage and offline access (HTML5).
9. **Mobile-Friendly** – Works on all screen sizes (responsive design).
10. **Integrates Easily** – Works with CSS, JavaScript, and backend code.

3.2 Basic Structure of HTML

```
<!DOCTYPE html>
<html>
<head>
    <title>My First Page</title>
</head>
<body>
    <h1>Welcome to HTML</h1>
    <p>This is a paragraph.</p>
</body>
</html>
```

Explanation of Each Part

Part	Description
<!DOCTYPE html>	Declares the document type and version (HTML5).
<html>	Root element of the HTML page.
<head>	Contains meta-information, title, links to CSS/JS, etc.
<title>	Sets the page title (shown in browser tab).
<body>	Contains visible content like text, images, links, buttons, etc.
<h1>, <p>	Content elements – heading and paragraph in this example.

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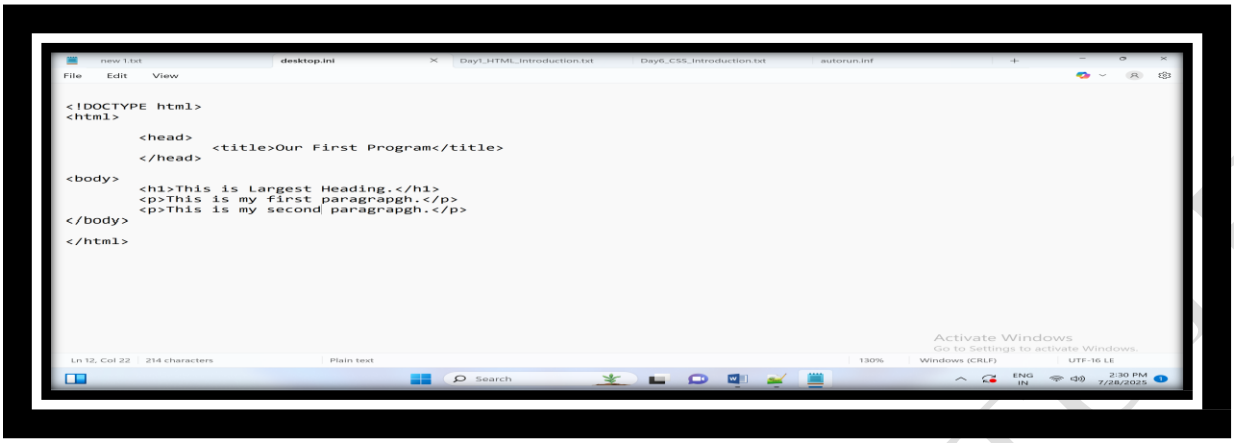
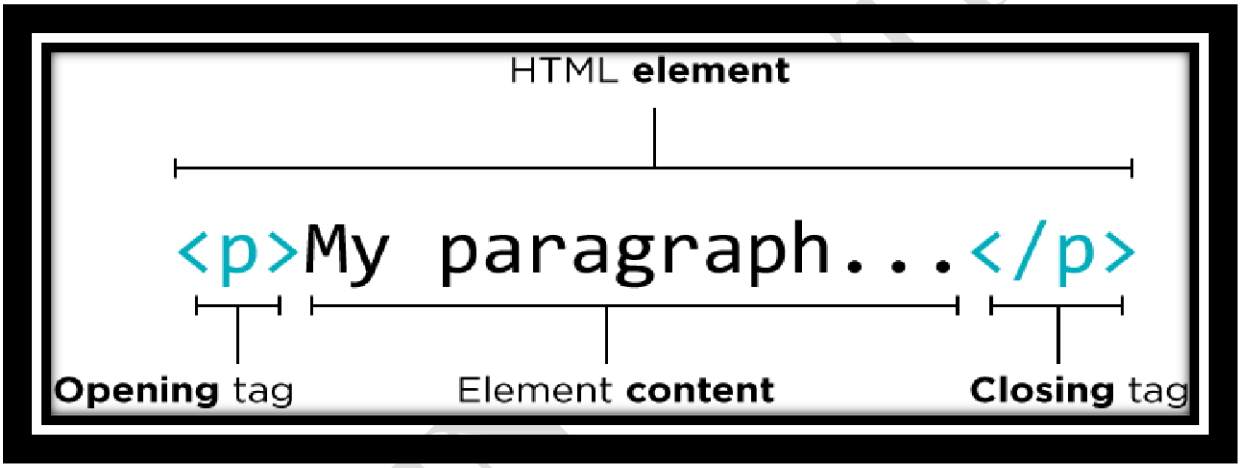
3.2.1 Writing a Program Using HTML in Notepad



3.2.2 What is an Elelment



1. Structure of an HTML Element

An HTML element usually has **three parts**:

1. **Opening tag:** Tells the browser where the element begins.
   Example: , <h1>,
2. **Content:** The actual text, image, or nested HTML inside the element.
   Example: This is a paragraph.
3. **Closing tag:** Tells the browser where the element ends.
   Example: , </h1>,

Example:

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

Here:

- = opening tag
- This is a paragraph. = content
- = closing tag

2. Types of HTML Elements

a) Normal (Container) Elements

These have an opening tag, content, and closing tag.
Example:

```
<h1>Welcome to HTML</h1>
<p>This is a paragraph.</p>
```

b) Empty (Void) Elements

These do **not** have content or a closing tag.

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Examples:

```
<img src="image.jpg" alt="Image">
<br>
<hr>
<meta charset="UTF-8">
<link rel="stylesheet" href="style.css">
```

3. Nested Elements

Elements can be **inside other elements** (called nesting).
Example:

```
<p>This is <b>bold</b> text.</p>
```

Here:

- **Outer element: ... **
- **Inner element: ...**

4. Block vs Inline Elements

- **Block elements**: Start on a new line and take full width.
  Examples: ** , , <h1>, **
- **Inline elements**: Stay in the same line and take only the required width.
  Examples: **, <a>, , <img>**

5. Difference Between Tags and Elements

- **Tag:** The syntax inside < >.
  Example: or

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- **Element:** The **tag(s) + content** combined.
  Example: Hello is an element.

6. HTML Element Hierarchy

A webpage is made up of **nested elements**.

```
<html>
  <head>
    <title>My Page</title>
  </head>
  <body>
    <h1>Heading</h1>
    <p>This is a paragraph.</p>
  </body>
</html>
```

Here:

- **<html>** is the root element.
- **<head>** and **<body>** are child elements.

3.3 Head Section and Element of Head Section

1. Head Section

- Appears at the top of the HTML document.
- Is placed **before** the <body> section.
- Is used to define **metadata**, external resources, and settings for the page.

Elements inside <head>:

- **<title>** → Page title (shown in browser tab).
- **<meta>** → Metadata (charset, author, description).
- **<link>** → External CSS.

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- **<style>** → Internal CSS.
- **<script>** → JavaScript

Example:

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

<head>
    <meta charset="UTF-8">
    <title>My Webpage</title>
    <meta name="description" content="This is a sample webpage">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="styles.css">
    <script src="script.js"></script>
</head>

<body>
    <h1>Hello World</h1>
</body>

</html>
```

2. Elements of Head Section

The **elements** inside the <head> tag include:

(a) <title>

- Defines the title of the page (shown in the browser tab).
- Required in every HTML document.

```
<title>Home Page</title>
```

(b) <meta>

- Provides metadata about the HTML document.
- Common attributes:
  - **Charset:** Defines character encoding.
  - **name="description":** Page description for search engines.
  - name="keywords": SEO keywords.
  - name="viewport": Responsive design settings.

Example:

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

(c) <link>

- Links external resources like CSS files or icons.

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

(d) <style>

- Contains internal CSS styles.

```
<style>
    body { background-color: lightblue; }
</style>
```

(e) <script>

- Adds or links JavaScript.

```
<script src="main.js"></script>
<script>
    alert("Hello!");
</script>
```

(f) <base>

- Specifies a base URL for all relative links in the document.

```
<base href="https://example.com/">
```

(g) <noscript>

- Provides content if JavaScript is disabled in the browser.

```
<noscript>Your browser does not support JavaScript.</noscript>
```

(h) <template> (HTML5)

- Defines HTML code fragments that are not displayed until activated by JavaScript.

```
<template>
    <p>This is hidden template content.</p>
</template>
```

3.4 Formatting Tags

3.4.1 <b> – Bold Text

- Makes text **bold** (without extra importance).
- **Attributes:** *No specific attributes other than global ones (id, class, style).*

```
<b>Bold Text</b>
```

OR

** – Important Text**

- Makes text **bold** and indicates semantic importance.
- **Attributes:** Global attributes only.

```
<strong>Important Text</strong>
```

3.4.2 <i> – Italic Text

- Displays text in italic style (for stylistic offset).
- **Attributes:** Global attributes only.

```
<i>Italic Text</i>
```

OR

** – Emphasized Text**

- Emphasizes text (semantic meaning) and renders in italic by default.

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- **Attributes:** Global attributes only.

```
<em>Emphasized Text</em>
```

3.4.3 <u> – Underlined Text

- Underlines text.
- **Attributes:** Global attributes.

```
<u>Underlined Text</u>
```

<mark> – Highlighted Text

- Highlights text with a yellow background by default.
- **Attributes:** Global attributes.

```
<mark>Highlighted Text</mark>
```

<small> – Smaller Text

- Makes the text smaller.
- **Attributes:** Global attributes.

```
<small>Small Text</small>
```

3.4.4 <strike> - Strikethrough

<s> – Strikethrough (Not recommended for deletions)

- Shows text with a strikethrough (visual only).

```
<s>Old Price</s>
```

```
<strike>Hello</strike>
```

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OR

<del> – Deleted Text

- Shows text as deleted (strikethrough).
- **Attributes:**
  - cite – URL explaining why the text was deleted.
  - datetime – Date and time of the change.

```
<del datetime="2025-07-28" cite="edit-history.html">Old Text</del>
```

3.4.5 Font Face, Size & Colour

Using <font> Tag (Old/Deprecated Method):-

```
<font face="Arial" size="5" color="blue">
    This is styled text using font tag
</font>
```

Attributes of <font>:-

Attribute	Description	Example
face	Font family	**face="Verdana"**
size	Font size (1 to 7)	**size="4"**
color	Font color (name or hex)	**color="red" or color="#FF0000"**

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Using CSS (Recommended in HTML5)

```
<p style="font-family: Arial; font-size: 20px; color: blue;">
    This is styled using CSS (recommended)
</p>
```

Font Properties(Fontface, Font Size,Font Color)

Property	Description	Example
font-family	Sets the font type	font-family: 'Times New Roman'
font-size	Sets the text size (px, em, %, etc.)	font-size: 18px
color	Sets text color	color: green or color: #008000

Example with All Three:-

```
<!DOCTYPE html>
<html>
<head>
    <title>Font Styling</title>
</head>
<body>
    <!-- Old method -->
    <font face="Courier New" size="4" color="green">
        Old HTML font styling
    </font>

    <br><br>

    <!-- New method -->
    <p style="font-family: 'Georgia'; font-size: 24px; color: purple;">
        Modern CSS font styling
    </p>
</body>
</html>
```

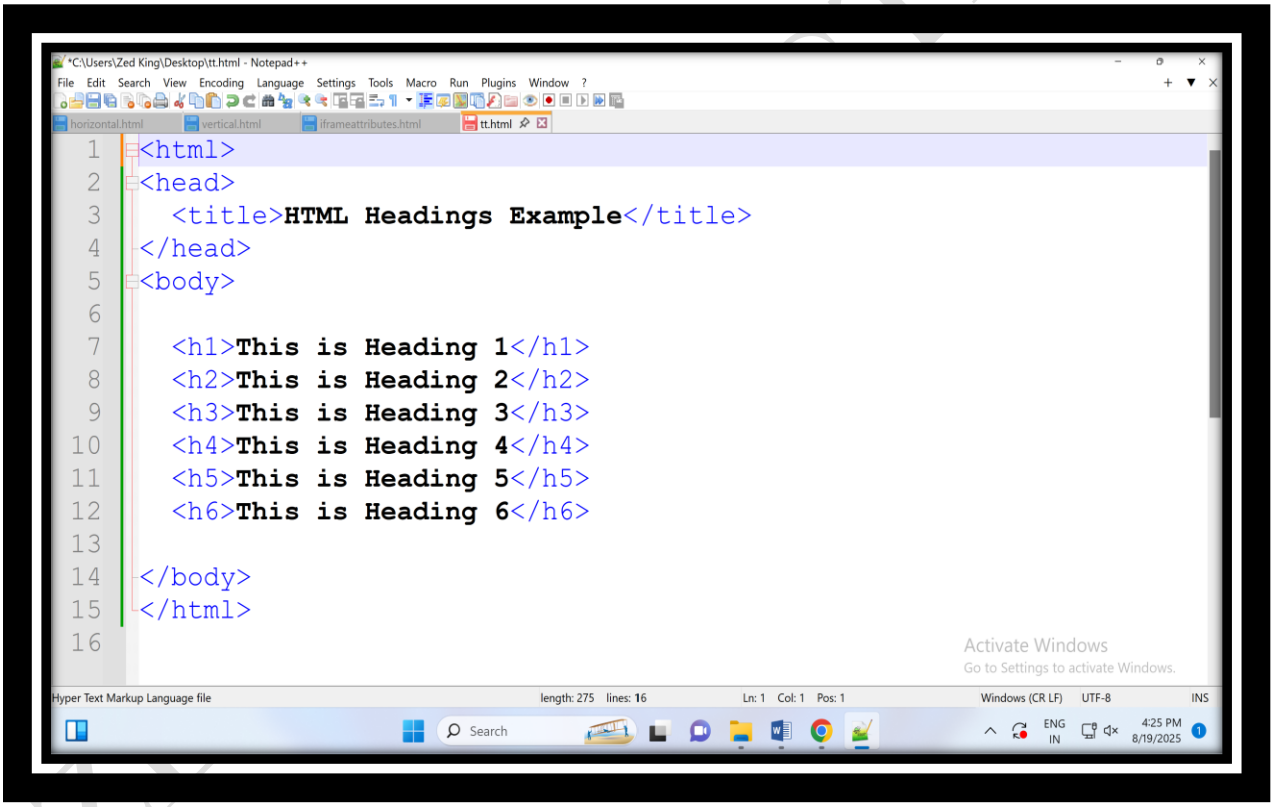
3.4.6 Heading Tags <h1> to <h6>

Headings in HTML

HTML provides **six levels of headings** from **<h1> to <h6>.**

- **<h1>** → Biggest & most important
- **<h6>** → Smallest & least important

Example (Only HTML):



Explanation:

1. **<h1>** → Used for the **main title** of the page. (Largest text size by default).
2. **<h2>** → Used for **section titles**.
3. **<h3>** → Used for **sub-sections**.

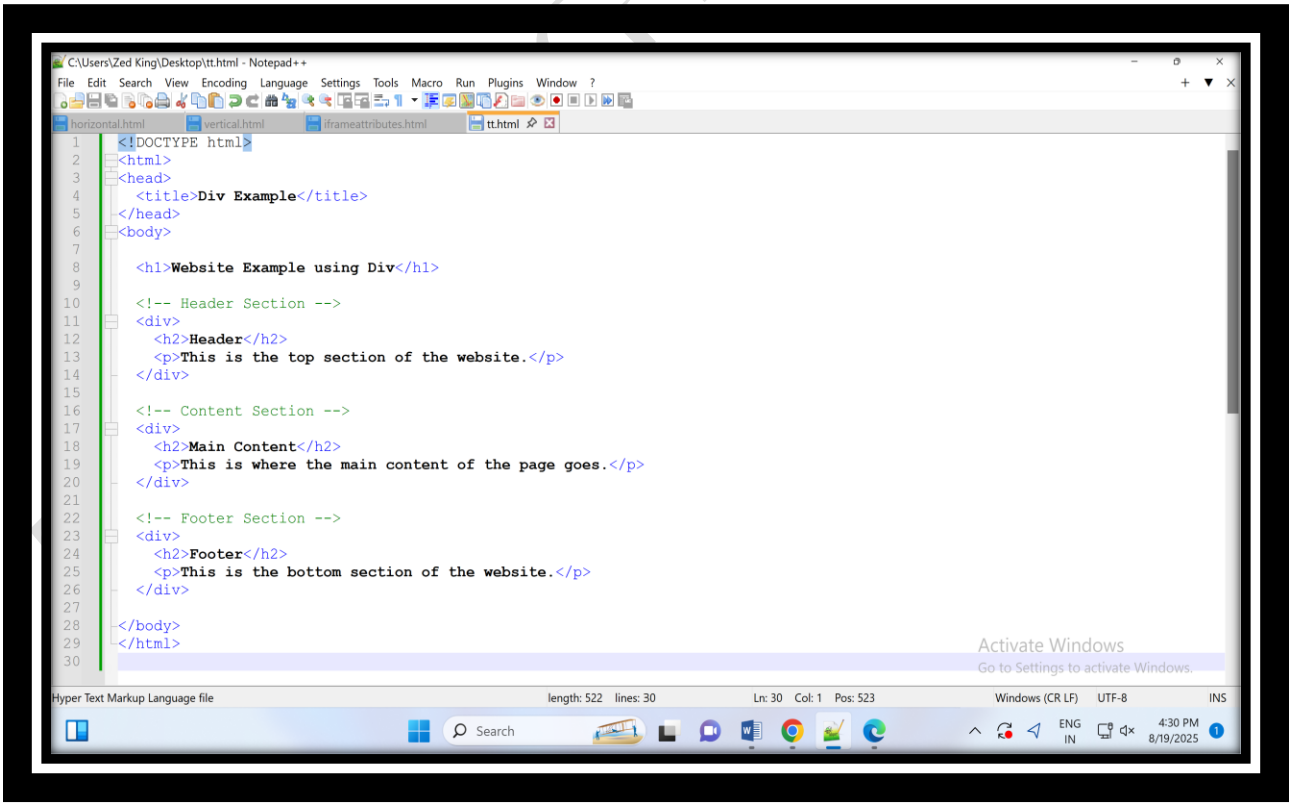
4. **<h4> to <h6>** → Used for **smaller headings** or deeper levels of content.
5. Browsers automatically make <h1> bold and large, <h2> smaller, and so on till <h6> which is the smallest.
6. Headings are **block elements**, so each heading starts on a new line.

3.4.7 Div

in HTML

- ** ** stands for **Division**.
- It is used to **group a block of content** together.
- By default, is a **block-level element** (it starts on a new line and takes full width).
- It is mostly used for **layout** (to divide the webpage into sections).
- We usually apply **CSS** to for styling, but here I'll explain with only HTML first.

Example (Only HTML):



Explanation:

1. ** is a container** → It doesn't change how content looks by itself.
2. **Header Div** → Groups heading and paragraph related to the top part.
3. **Content Div** → Groups the main content.
4. **Footer Div** → Groups the bottom information.
5. Without CSS, just separates sections logically.

Why use ?

- Helps to **organize code** (like chapters in a book).
- Useful when applying **CSS styles or JavaScript** later.
- Commonly used to create **website layouts** (header, sidebar, footer, etc.).

In short:
 = **Box/Container** that holds other HTML elements.

3.4.8 <pre> - Pre Tag

<pre> Tag in HTML

- **<pre> means Preformatted Text**.
- Whatever you type inside <pre> ... </pre> will appear **exactly the same** in the browser.
- It **does not remove spaces or line breaks**.
- Text looks like it is written in a **typewriter style (fixed-width font)**.

<pre> – Preformatted Text

- Preserves spaces and line breaks.
- **Attributes:** Global attributes only.

```
<pre>
Line 1
Line 2
</pre>
```

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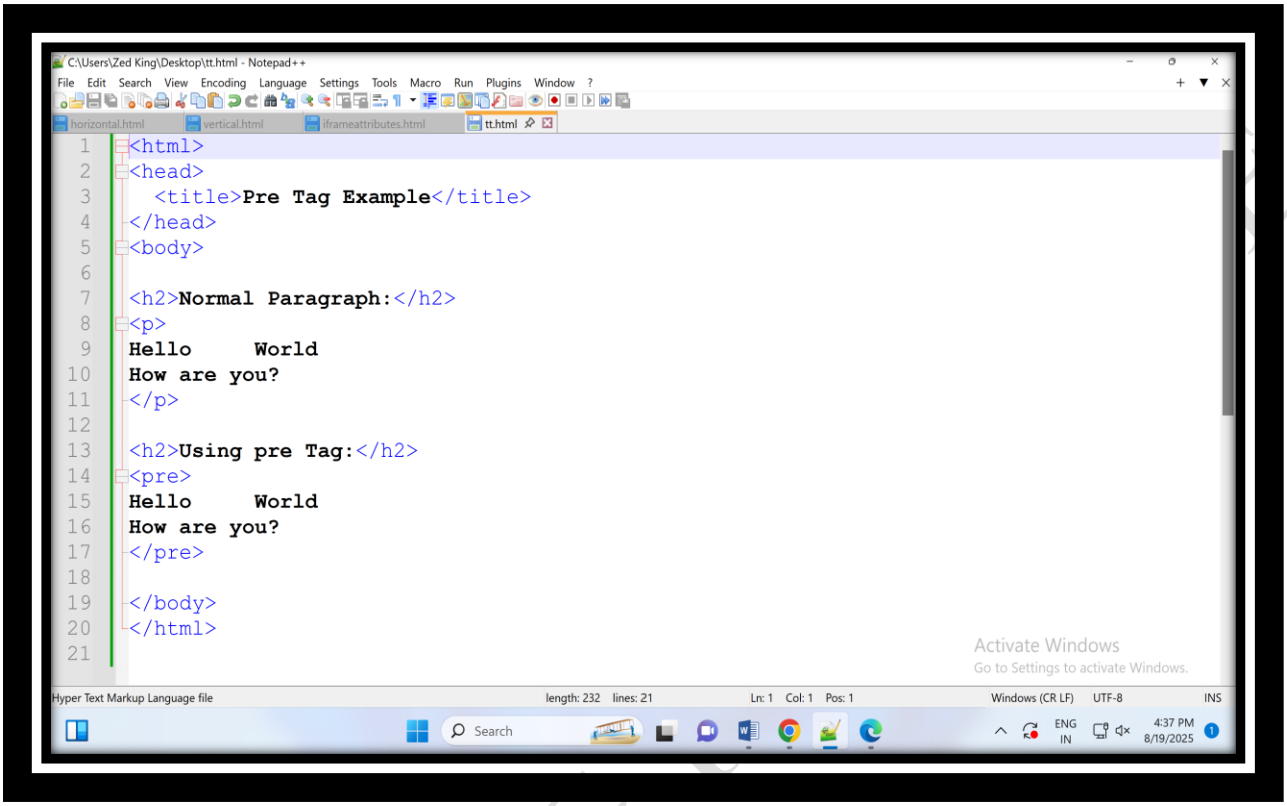
Example



Output Explanation:

- In **normal <p>**, spaces and line breaks are **ignored** → it will show: Hello World How are you?
- In **<pre>**, spaces and line breaks are **preserved** → it will show:

  Hello World
  How are you?

In short:

<p> = ignores spaces and new lines
<pre> = keeps spaces and new lines

3.4.9
 Line Break

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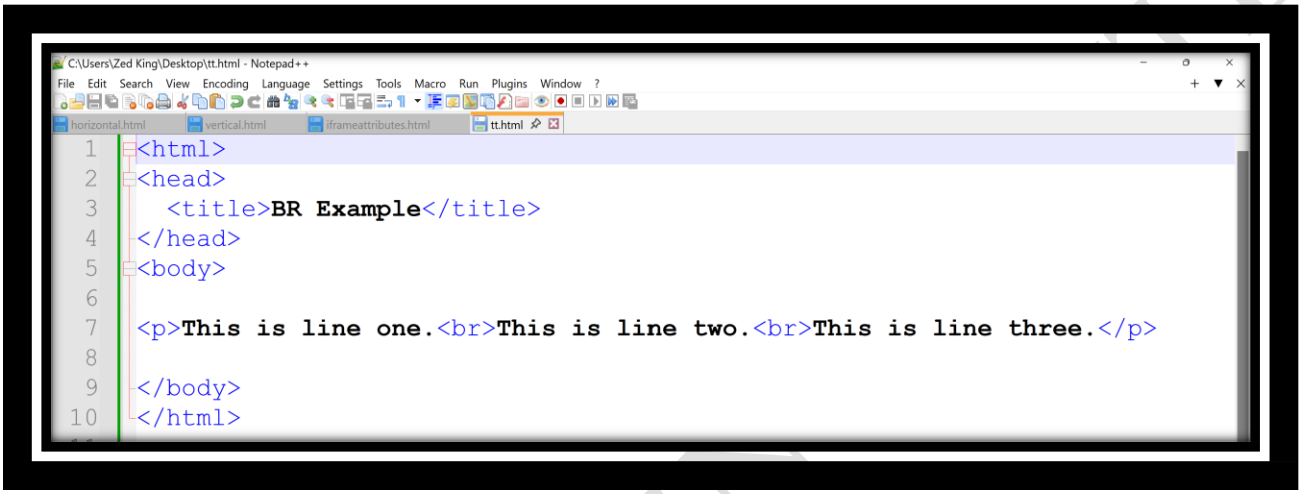
1.
 Tag (Line Break)

- **
** = **Break Line**.
- It is used to **start text from a new line**.
- It is an **empty tag** → no closing tag needed.

Example:



3.4.10 <hr> - Drawing Line Tag (Horizontal Rule)

- <hr> = **Horizontal Line (rule)**.
- It is used to **draw a line** across the page.
- Commonly used to **separate content**.
- It is also an **empty tag** (no closing tag).

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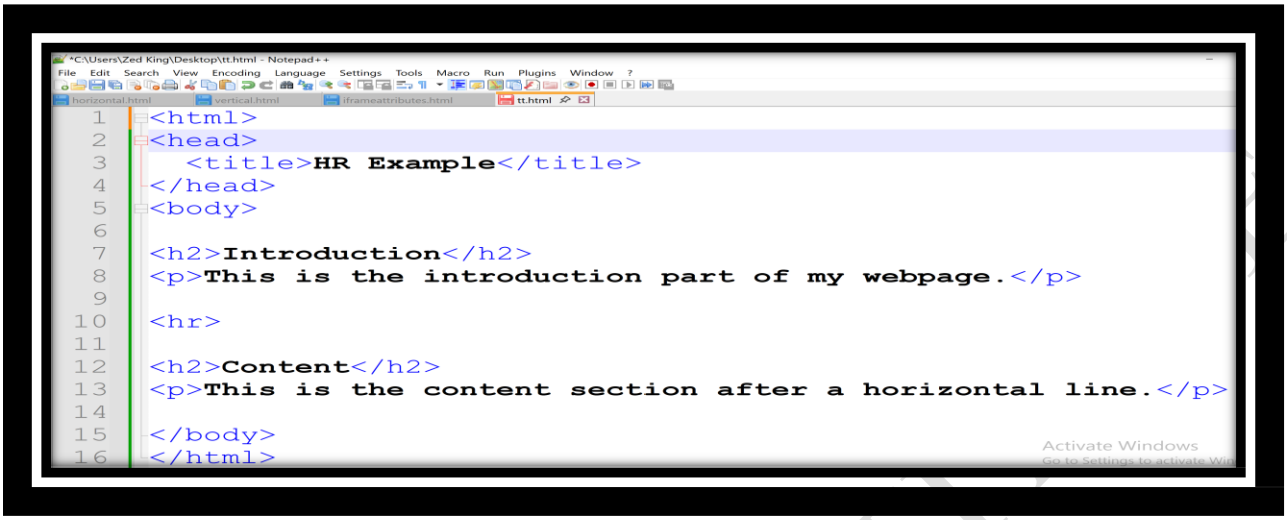
Example:



Output:
A line will appear between **Introduction** and **Content**.

Summary:

- **
** → Breaks text → moves to **next line**.
- **<hr>** → Inserts a **horizontal line** to separate sections.

3.4.11 Quote Element

Quote Elements in HTML

HTML provides **two main tags for quotes**:

1. <q> Tag → Inline Short Quote

- Used for **short quotations** (inside a line).
- Browsers automatically add **double quotes** (" ") around the text.

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Example:

```
<html>
<head>
  <title>Q Tag Example</title>
</head>
<body>

<p>Doli said: <q>HTML is very easy to learn!</q></p>

</body>
</html>
```

2. <blockquote> Tag → Long Quote

- Used for **long quotations** (separate block).
- Browsers usually indent (add space on left and right).

Example:

```
<html>
<head>
  <title>Blockquote Example</title>
</head>
<body>

<p>Here is a famous quote:</p>
<blockquote>
  The greatest glory in living lies not in never falling,
  but in rising every time we fall.
</blockquote>

</body>
</html>
```

Summary

- **<q>** → Short quote (inline, with quotes automatically).
- **<blockquote>** → Long quote (separate block, indented).

9. <ins> – Inserted Text

- Shows inserted text (underlined by default).
- **Attributes:**
  - cite
  - datetime

```
<ins datetime="2025-07-28">New Text</ins>
```

3.4.12 <sub> – Subscript

- Displays text as subscript.
- **Attributes:** Global attributes.

```
H<sub>2</sub>O
```

3.4.13 <sup> – Superscript

- Displays text as superscript.
- **Attributes:** Global attributes.

```
X<sup>2</sup>
```

3.4.14 Big Element

- The <**big**> **tag** was used in **HTML 4** to make text appear **one size larger** than normal.
- It could be **nested** (used multiple times) to keep increasing size.

```
<big>This is big text</big>
```

3.4.15 Small Element

The <small> tag is used to make text **smaller than the surrounding text**.

It is mainly used for **side comments, disclaimers, copyright notes, or fine print**.

Unlike <big>, the <small> tag is **still valid in HTML5** .

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```
<small>This is small text</small>
```

3.4.16 Teletype Element

The **<tt> tag** (teletype text) was used in older HTML to display text in a **monospace (fixed-width) font** (like typewriter style).

Every character takes the **same amount of horizontal space**.

Example fonts: Courier, Consolas, Monaco.

```
<tt>This is teletype text</tt>
```

<abbr> – Abbreviation

- Defines an abbreviation or acronym.
- **Attributes:**
  - title – Full form (mandatory for semantic use).

```
<abbr title="Hypertext Markup Language">HTML</abbr>
```

<cite> – Citation

- Indicates the title of a work (book, movie, etc.).
- **Attributes:** Global attributes only.

```
<cite>The Great Gatsby</cite>
```

<q> – Short Inline Quotation

- Adds quotes around the text.
- **Attributes:**
  - cite – URL for the source.

```
<q cite="book.html">This is a quote</q>
```

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<blockquote> – Block Quotation

- Used for longer quotations.
- **Attributes:**
  - cite – URL for the source.

```
<blockquote cite="https://example.com">This is a block quote.</blockquote>
```

<code> – Inline Code

- Displays computer code in monospace font.
- **Attributes:** Global only.

```
<code>print("Hello")</code>
```

18. <kbd> – Keyboard Input

- Represents keyboard input.
- **Attributes:** Global attributes.

```
Press <kbd>Ctrl</kbd> + <kbd>C</kbd>
```

20. <var> – Variable

- Indicates a variable in programming or math.

```
<var>x</var> = 10
```

HTML Formatting Tags List (with Description and Example)

Tag	Description	Example
****	Bold text (without emphasis)	This is bold

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****	Important text (bold + semantic meaning)	Important!
****	Italic text (without emphasis)	This is italic
****	Emphasized text (italic + semantic meaning)	Very important
<u>	Underlined text	<u>This is underlined</u>
<mark>	Marked or highlighted text	<mark>Highlight this</mark>
<small>	Smaller text	This is small text
<del>	Deleted text (strike-through)	~~Deleted text~~
<ins>	Inserted text (underlined)	<ins>Inserted text</ins>
<sub>	Subscript text	H₂O
<sup>	Superscript text	X²
<abbr>	Abbreviation with tooltip	<abbr title="World Health Organization">WHO</abbr>
<cite>	Citation for a work	<cite>The Great Gatsby</cite>
<code>	Code snippet	<code>console.log("Hello")</code>
<kbd>	Keyboard input	<kbd>Ctrl + C</kbd>
<samp>	Sample output	<samp>Error 404</samp>
<var>	Variable in code	<var>x</var> = 10
<q>	Short quotation	<q>Be yourself</q>
<blockquote>	Long quotation (indented)	<blockquote>Quote here...</blockquote>
<pre>	Preformatted text (with spaces and line breaks)	<pre> Line 1\nLine 2 </pre>
<tt>	Teletype text (monospaced) – *obsolete*	<tt>Old code</tt>

Tags with Similar Meaning

Tags	Similar Function

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**<b> and **	Both make text bold, but adds importance.
**<i> and **	Both make text italic, but emphasizes.
<u> and <ins>	Both underline text, but <ins> is semantically used for inserted content.

Types of Tags in HTML

1. Paired Tags / Container Tags

These tags come in **pairs**: an opening tag and a closing tag. The content goes between them.

Example	Description
Paragraph	Paragraph tag
Block	Division or section
Title	Heading tag
Link	Anchor (hyperlink)

➞ **Closing tag** has a slash **/** → **</tag>**

2. Unpaired Tags / Empty Tags / Self-closing Tags:-

Tag	Description
** **	Line break
<hr>	Horizontal rule
<img>	Image tag
<input>	Input field
<meta>	Metadata
<link>	Links to CSS or external files
<source>	Source for media (video/audio)

3. Block-level Tags:-

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Start on a **new line** and take up the **full width**. Used for layout and large content sections.

Example	Description
** **	Container for block content
<p>	Paragraph
<h1> to <h6>	Headings
<form>	Form container
<section>	Section of a page
<article>	Article content
<footer> / <header>	Footer or header section

4. Inline Tags

Do **not start on a new line**, only take up as much width as necessary. Used for styling and formatting **within text**.

Example	Description
****	Generic inline container
<a>	Hyperlink
** / <b>**	Bold text
** / <i>**	Italic/emphasized
<img>	Image
<input>	Inline form input

5. Semantic Tags (HTML5)

Clearly describe the purpose of the content. Useful for SEO and accessibility.

Tag	Description
<header>	Page or section header
<footer>	Footer section
<main>	Main content
<article>	Article or blog post
<section>	Section of content
<nav>	Navigation menu
<aside>	Sidebar or secondary content

6. Non-Semantic Tags

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Don't tell what kind of content they contain.

Tag	Description
** **	Generic block
****	Generic inline

7. Form Tags

Used to create forms and user input.

Tag	Purpose
<form>	Form container
<input>	Text field, checkbox, radio, etc.
<textarea>	Multi-line text box
<select>	Dropdown list
<option>	Option in dropdown
<button>	Clickable button
<label>	Describes input field

Summary Table

Type	Example Tags
Paired Tags	<p>, , <h1>, <a>
Unpaired Tags	 , <img>, <input>
Block-level Tags	, <section>, <h1>, <p>
Inline Tags	, <a>, <b>, <i>, <img>
Semantic Tags	<article>, <nav>, <header>, <footer>
Non-semantic Tags	,
Form Tags	<form>, <input>, <select>, <button>

3.4.17 Anchor Link (<a> Tag)

The **<a>** tag (anchor) is used to create **hyperlinks** in HTML.

- Used for hyperlinks.
- **Attributes:**
  - href → link address
  - target → _blank, _self, _parent, _top, targetframe

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- name / id → named anchor

Syntax:

```
<a href="https://example.com">Click here</a>
```

Attribute	Description
href	Specifies the URL of the link (destination)
target="_blank"	Opens the link in a new tab (optional)
title	Tooltip text on hover (optional)

Example:

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

2. Named Anchors (Linking within same page)

Named anchors let you **jump to a specific section of the same page** using an ID.

Steps:

1. Assign an id to the destination element.
2. Link to it using **#id**.

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Example (Same Page Navigation):

```
<!-- Navigation Link -->
<a href="#about">Go to About Section</a>

<!-- Target Section -->
<h2 id="about">About Us</h2>
<p>This is the about section of the page.</p>
```

Clicking the link scrolls to the element with id="about".

Example (Multiple Sections with Named Anchors):

```
<!-- Top Navigation -->
<a href="#home">Home</a> |
<a href="#services">Services</a> |
<a href="#contact">Contact</a>

<!-- Sections -->
<h2 id="home">Home Section</h2>
<p>Welcome to our homepage.</p>

<h2 id="services">Our Services</h2>
<p>We offer various web services.</p>

<h2 id="contact">Contact Us</h2>
<p>Call us or email anytime.</p>
```

Return to Top Example:

```
<a href="#top">Back to Top</a>

<!-- Top of page -->
<h1 id="top">Welcome to My Website</h1>
```

3.4.18 Links – Colors & Download Link

HTML links can change color using **CSS styles**. There are four types of link states:

State	Pseudo-class	Description
Normal link	**a:link**	Before clicked
Visited link	**a:visited**	After clicked
Hover	**a:hover**	When mouse is over the link
Active	**a:active**	When link is being clicked

Example (with image download):-

```
<a href="image.jpg" download="ZedKing-Poster">Download Poster</a>
```

Summary

Feature	Code
Link Color	Use CSS a:link, a:visited, a:hover, a:active
Download Link	**Download**

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Difference Between Visual and Semantic in HTML

Type	Meaning	Purpose	Example Tags	Browser Effect	SEO / Accessibility
Visual	Affects only how content **looks**	Just for **styling** or appearance	, <i>, <u>, <font> (deprecated)	Makes text bold, italic, underlined, etc.	No meaning to screen readers or search engines
Semantic	Describes the **meaning** of the content	Adds **meaning and structure** to content	, , <mark>, <cite>, <header>, <article>	Also affects appearance (usually), but more important for meaning	Helpful for screen readers, SEO, accessibility

Example:

Warning **<!-- Just makes text bold -->**

Warning **<!-- Means this text is important -->**

Both may **look the same** in the browser (bold text), but:

- **** is **visual only**
- **** is **semantic** — tells **search engines** and **screen readers** that this is **important** content

More Semantic vs Visual Examples:

Visual	Semantic	Usage
<i>	****	Italic vs Emphasized text
****	****	Bold vs Important text
<u>	**<ins>**	Underlined vs Inserted text

Semantic vs Visual Tags

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<b>	****	Bold vs Important
<i>	****	Italic vs Emphasized
<u>	**<ins>**	Underlined vs Inserted

3.4.19 Image Tag

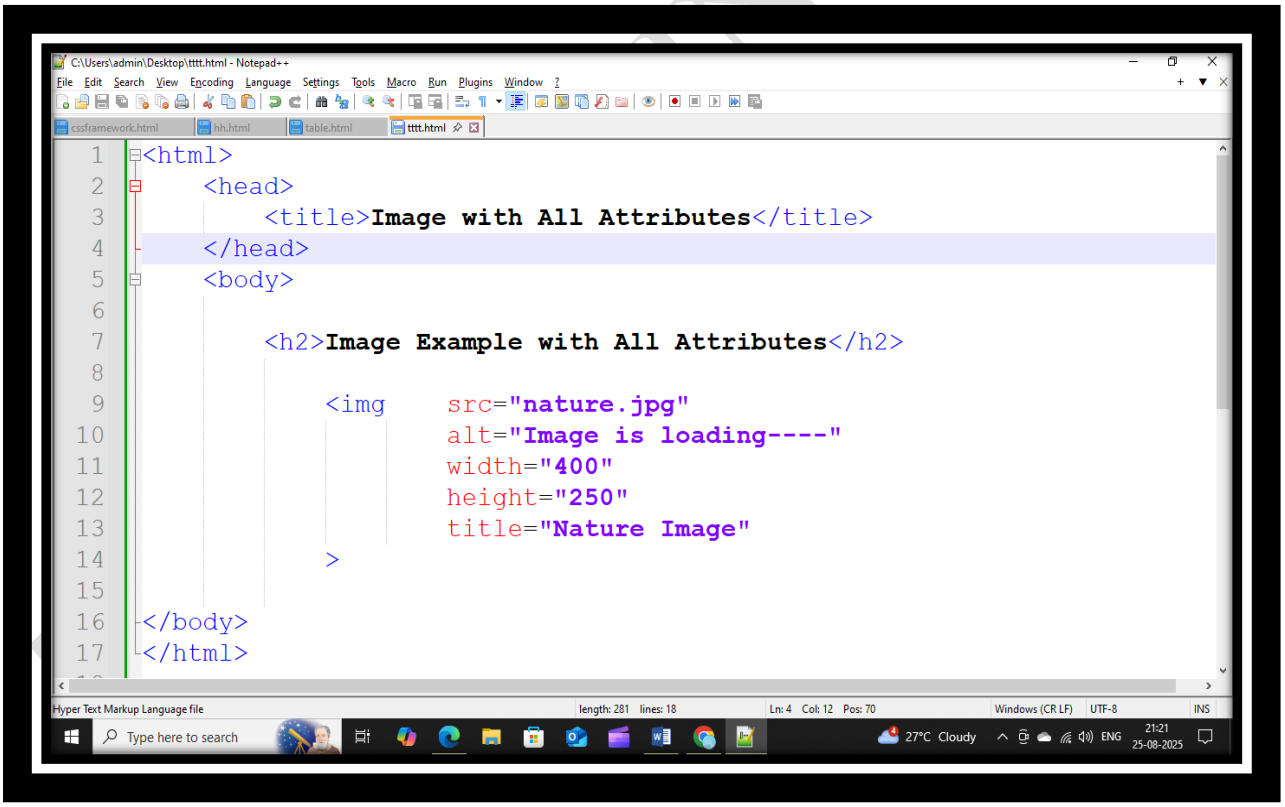
<img> Tag in HTML

Definition

- The <img> tag is used to **embed images** in a webpage.
- It is an **empty tag** → it does not need a closing tag.

Syntax

<img src="image.jpg" alt="description">



Attributes of <img>

Attribute	Purpose
Src	Specifies the path/URL of the image (required).
Alt	Alternative text (shown if image is not loaded, also for accessibility).
width	Width of the image (in px or %).
height	Height of the image (in px or %).
Title	Tooltip text when mouse hovers over image.

3.4.20 Paragrapgh(p)

Paragraph in HTML

Definition

- In HTML, a **paragraph** is created using the <p> tag.
- It is a **block-level element** → always starts on a **new line** and adds **space (margin)** above and below by default.

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

3.4.21 Comments

Definition

- A **comment** in HTML is text that is **not displayed** in the browser.
- It is used to **explain code, add notes, or temporarily disable code**.
- The browser ignores comments.

Syntax

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

Example 1: Basic Comment

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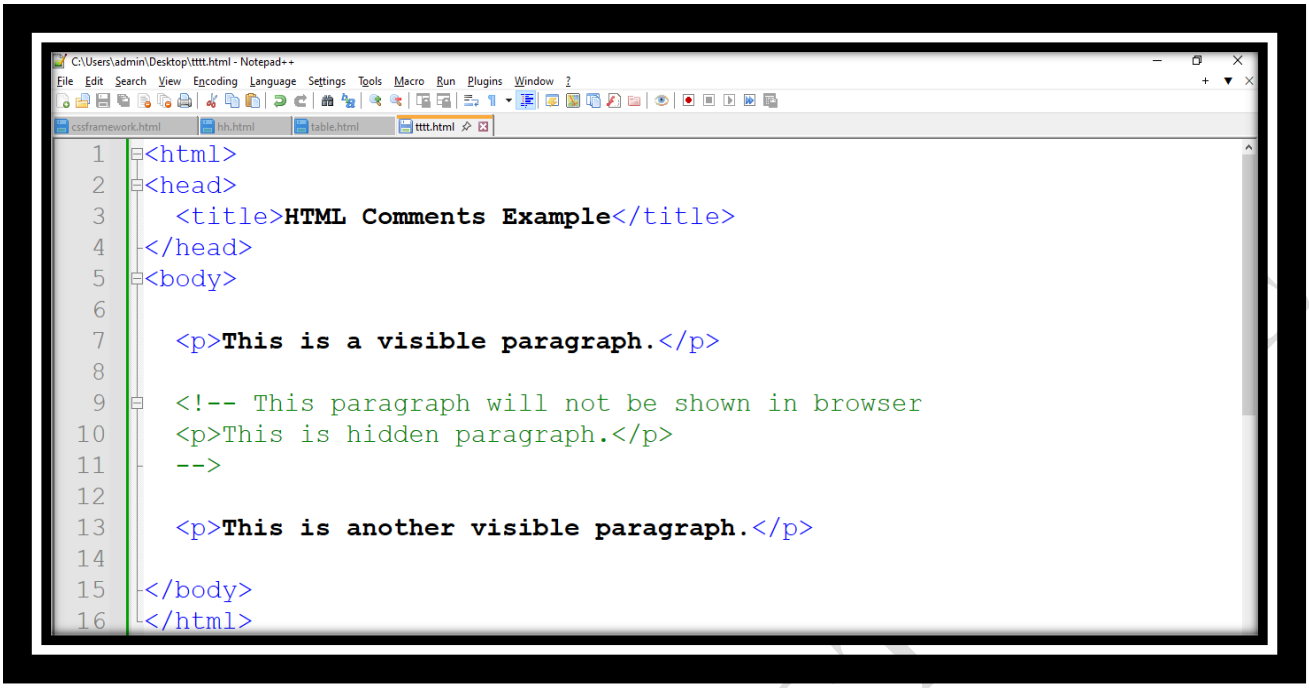

Example 2: Inline Comment

```
<p>This is a paragraph. <!-- This is a comment next to text --></p>
```

Uses of Comments

1. **Explain Code** (helpful for learning & teamwork).
2. **Temporarily Disable Code** (for testing).
3. **Documentation** (author, date, version info).

3.5 Table tag

<table> Tag

Definition:

The <table> tag in HTML is used to **display data in rows and columns** (like in Excel).
It is a **container tag**, meaning it has an opening <table> and a closing </table>.

Structure of a Table:

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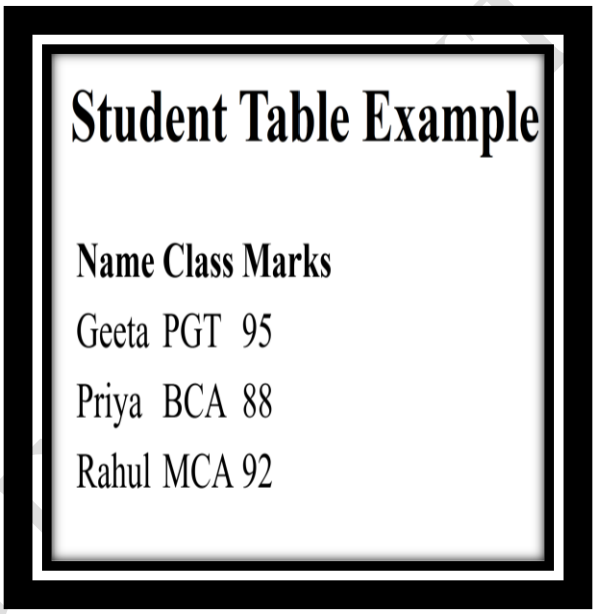
A table is made up of these main parts:

1. **<table>** → Defines the table.
2. **<tr> (Table Row)** → Defines a row inside the table.
3. **<th> (Table Header)** → Defines heading cells (bold + centered by default).
4. **<td> (Table Data)** → Defines normal data cells.

Example:

```
<html>
    <head>
        <title>HTML Table</title>
    </head>
    <body>
        <h2>Student Table Example</h2>
    <table>
        <tr>
            <th>Name</th>
            <th>Class</th>
            <th>Marks</th>
        </tr>
        <tr>
            <td>Geeta</td>
            <td>PGT</td>
            <td>95</td>
        </tr>
        <tr>
            <td>Priya</td>
            <td>BCA</td>
            <td>88</td>
        </tr>
        <tr>
            <td>Rahul</td>
            <td>MCA</td>
            <td>92</td>
        </tr>
    </table>
</body>
</html>
```



Explanation (Step by Step)

1. <!DOCTYPE html> → Defines that this document is HTML5.
2. <html> ... </html> → The root element of the webpage.
3. <head> ... </head> → Contains page information like title.
4. <title> → The name shown in the browser's tab.
5. <body> ... </body> → All visible content of the webpage goes here.
6. <h2> → Heading for the table.
7. <table> → Starts the table (no attributes like border, cellpadding, or cellspacing used → so it will be plain).
8. <tr> → Table Row (a horizontal row in the table).

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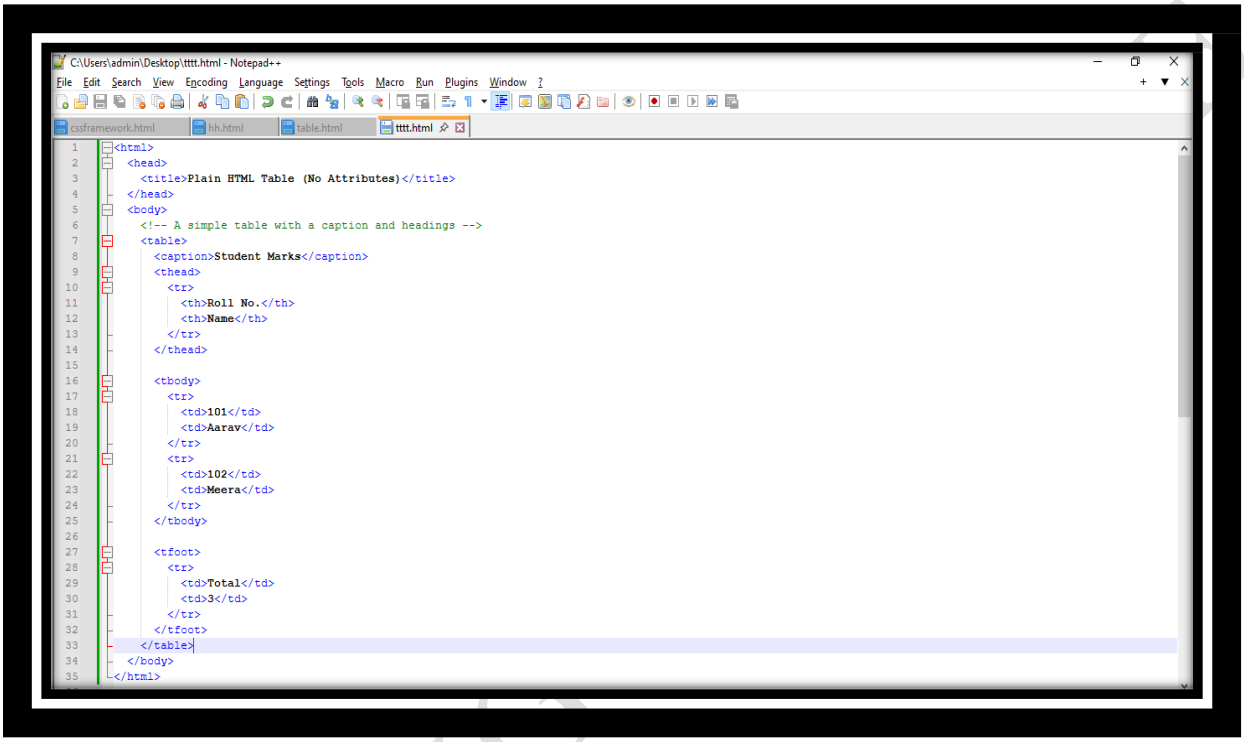
9. <th> → Table Header Cell (used for headings, shown in bold and centered by default).
10. <td> → Table Data Cell (used for normal data).



3.5.1 Attributes of table tag

Attributes of <table> Tag

The <table> tag can have different attributes to control the look of the table.
Some common attributes are:

- **border** → adds border around table and cells
- **cellpadding** → space between text and cell border
- **cellspacing** → space between two cells
- **height** and **width** → set size of table

3.5.2 Table Attributes

i. Border

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ii. Cellpadding
iii. Cellspacing
iv. Height
v. Width

3.5.2.1 Border

Used to display borders around the table.

```
<html>
    <head>
        <title>Table with border</title>
    </head>
    <body>
        <table border="2">
            <tr>
                <th>Name</th>
                <th>Marks</th>
            </tr>
            <tr>
                <td>Geeta</td>
                <td>95</td>
            </tr>
        </table>
    </body>
</html>
```



This will show a table with a **border size of 2**.

3.5.2.2 Cellpadding

Adds space **inside the cell** (between text and cell border).

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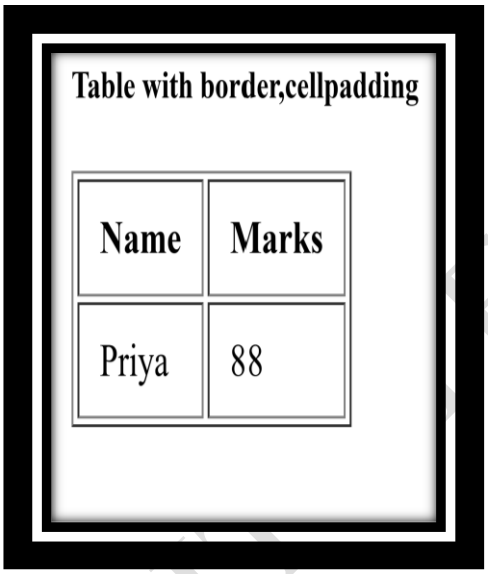
```html
<html>
    <head>
        <title>Table with border</title>
    </head>
    <body>
        <h3>Table with border,cellpadding</h3>
        <table border="1" cellpadding="10">
            <tr>
                <th>Name</th>
                <th>Marks</th>
            </tr>
            <tr>
                <td>Priya</td>
                <td>88</td>
            </tr>
        </table>
    </body>
</html>
```

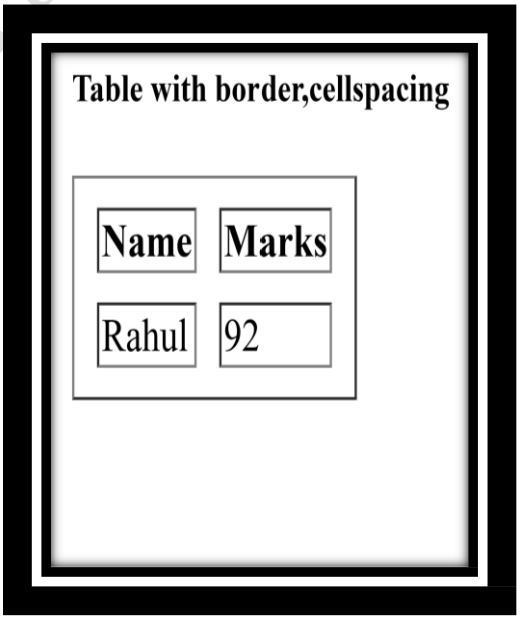


Here, text looks more spaced inside the cells.

3.5.2.3 Cellspacing

Adds space between two cells**.**

```html
<html>
    <head>
        <title>Table with border</title>
    </head>
    <body>
        <h5>Table with border,cellspacing</h5>
        <table border="1" cellspacing="10">
            <tr>
                <th>Name</th>
                <th>Marks</th>
            </tr>
            <tr>
                <td>Rahul</td>
                <td>92</td>
            </tr>
        </table>
    </body>
</html>
```



The cells will look separated from each other.

3.5.2.4 Height & Width

Used to set table's height and width.

```
<html>
    <head>
        <title>Table with border</title>
    </head>
    <body>
        <h5>Table with border,width,height</h5>
        <table border="1" width="400" height="200">
            <tr>
                <th>Name</th>
                <th>Marks</th>
            </tr>
            <tr>
                <td>Geeta</td>
                <td>95</td>
            </tr>
        </table>
    </body>
</html>
```

Table with border,width,height

Name	Marks
Geeta	95

The table will appear **wider and taller**.

3.5.2.5 Cell Width or Column Width

Meaning:

Cell width or column width is used to set the **size of a column** in a table.

Where to use:

- In <td> → it sets the width of a single cell.
- In <th> → it sets the width of the whole column (because heading applies to the column).

Example:-

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```html
<html>
    <head>
        <title>Table with border</title>
    </head>
    <body>
        <h5>Table with border cell width</h5>
        <table border="1">
          <tr>
            <th width="150">Name</th>
            <th width="100">Age</th>
            <th width="200">City</th>
          </tr>
          <tr>
            <td width="150">Geeta</td>
            <td width="100">33</td>
            <td width="200">Kaithal</td>
          </tr>
        </table>
    </body>
</html>
```

OUTPUT:-

Table with border

File C:/Users/Zed%20King/Desktop/nnnnm.html

Table with border cell width

Name	Age	City
Geeta	33	Kaithal

Important Points

1. Width is written in **pixels (px)** or in **percentage (%)**.
   Example: width="50%" → takes half of the table space.
2. If not given, the browser adjusts the width automatically.
3. Best for keeping columns **same size** in all rows.

3.5.3 <tr> (Table Row)

- <tr> defines a **row** in the table.

- Each row contains cells (<td> or <th>).

```
<tr>
<td>Geeta</td>
<td>95</td>
</tr>
```

3.5.4 <th> (Table Heading Cell)

- Defines **heading cell** (bold + centered by default).

```
<tr>
   <th>Name</th>
   <th>Marks</th>
</tr>
```

3.5.5 <td> (Table Data Cell)

- Defines **normal cell** in the table.

```
<tr>
   <td>Priya</td>
   <td>88</td>
</tr>
```

3.5.6 ROWSPAN and COLSPAN

ROWSPAN

Merges cells **vertically (up–down)**.

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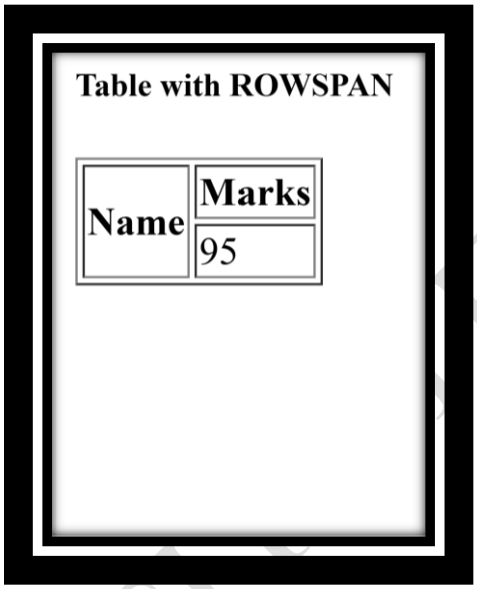
```html
<html>
    <head>
        <title>Table Example:</title>
    </head>
    <body>
        <h5>Table with ROWSPAN</h5>
        <table border="1">
            <tr>
                <th rowspan="2">Name</th>
                <th>Marks</th>
            </tr>
            <tr>
                <td>95</td>
            </tr>
        </table>
    </body>
</html>
```

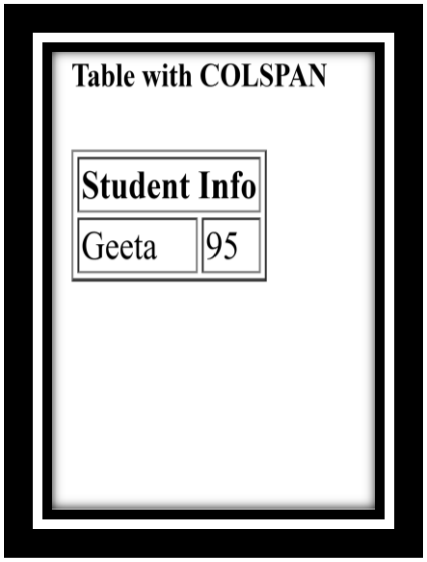


"Name" will cover **two rows**.

COLSPAN

Merges cells **horizontally (left–right)**.

```html
<html>
    <head>
        <title>Table Example:</title>
    </head>
    <body>
        <h5>Table with COLSPAN</h5>
        <table border="1">
            <tr>
                <th colspan="2">Student Info</th>
            </tr>
            <tr>
                <td>Geeta</td>
                <td>95</td>
            </tr>
        </table>
    </body>
</html>
```



"Student Info" will cover **two columns**.

Tags Used in Table:

Tag	Easy Meaning
<table>	Makes a table.
<tr>	Makes a row (horizontal line).
<th>	Table heading cell (text becomes **bold + center** automatically).
<td>	Normal data cell.
<caption>	Title of the table (shows on top).
<thead>	Group of heading rows.
<tbody>	Group of body rows.
<tfoot>	Group of footer rows.

Key Points (Exam Point of View):

1. <table> → for creating table.
2. <tr> → row.
3. <th> → heading (bold + center).
4. <td> → normal data.
5. <caption> → table title.
6. By default, no border is shown.

Explanation of Attributes

- **border="2"** → Sets thickness of table border.
- **cellpadding="10"** → Adds spacing *inside* cells (between content & border).
- **cellspacing="5"** → Adds spacing *between* cells.
- **width="700" / height="300"** → Sets total table size.
- **align="center"** → Aligns table horizontally on page.
- **bgcolor="#f0f8ff"** → Sets background color for the table.

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- **height="60"** (inside <tr>) → Sets height of that row.
- **width="100", width="300"** → Sets width of specific columns.
- **align="center" | "left" | "right"** → Aligns text inside a cell horizontally.
- **valign="top" | "middle" | "bottom"** → Aligns text inside a cell vertically.
- **bgcolor (inside <td> or <tr>)** → Sets background color for specific rows/cells.

Common Attributes of <table>

Attribute	Meaning
border	Adds border around table and cells. Example: border="1"
cellpadding	Space **inside a cell** (between text and border).
cellspacing	Space **between two cells**.
width	Sets table width (in % or px).
height	Sets table height.
align	Aligns table (left, right, center).
bgcolor	Sets background color of table.
bordercolor	Sets border color.

Attributes for <tr>, <th>, <td>:-

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Tag	Attribute	Meaning
<tr>	bgcolor	Row background color
<th>, <td>	colspan	Merge cells horizontally
<th>, <td>	rowspan	Merge cells vertically
<th>, <td>	align	Align text (left, right, center)
<th>, <td>	valign	Vertical align (top, middle, bottom)

Key Points for Exam:

1. **border** → shows border.
2. **cellpadding** → space inside cell.
3. **cellspacing** → space between cells.
4. **colspan / rowspan** → merge cells.
5. **align / valign** → text alignment.
6. **bgcolor / bordercolor** → colors.

3.5.7 Lists

HTML lists are mainly:

- → Ordered (numbers)
- → Unordered (bullets)
- <dl> → Description (term + meaning)
- Nested lists → list inside another list

1. Ordered List (<ol>)

- Shows items in **numbered order** (1, 2, 3…).
- Tag: <ol> (ordered list).
- Items inside: <li> (list item).

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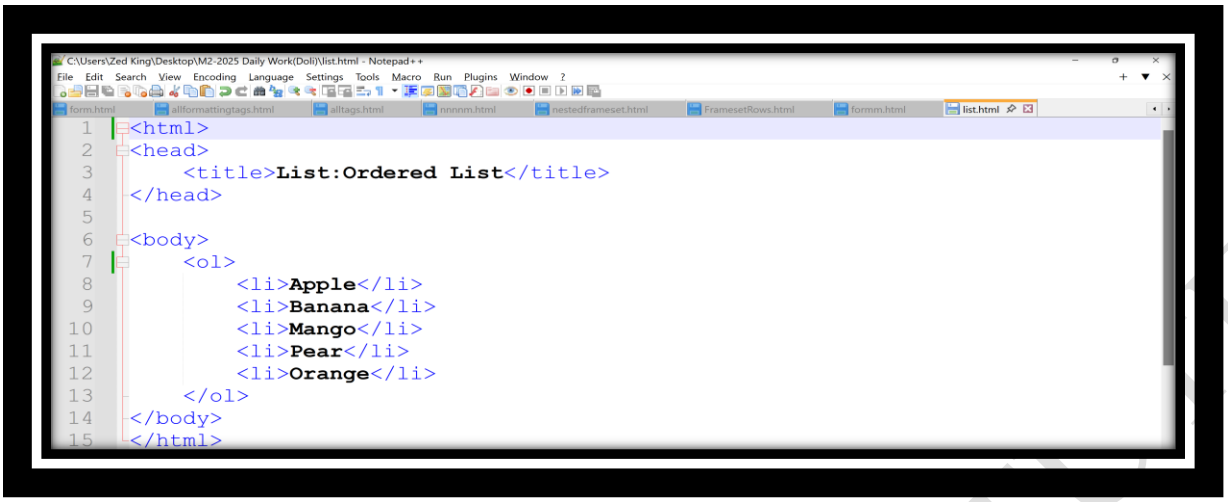
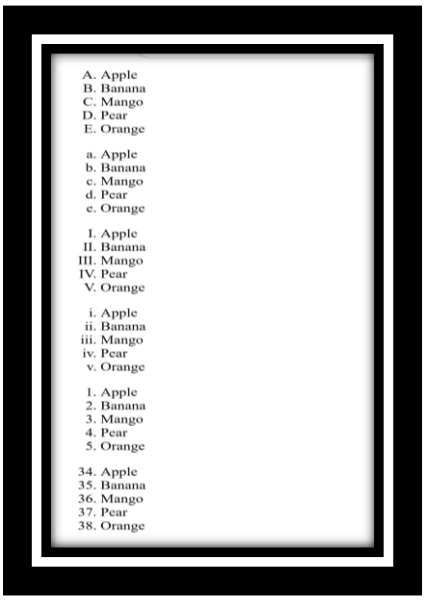


Attributes of <ol> (Ordered List)

1. type

- Defines the **numbering style**.
- Values:
  - "1" → Default numbers (1, 2, 3…)
  - "A" → Capital letters (A, B, C…)
  - "a" → Small letters (a, b, c…)
  - "I" → Roman numerals uppercase (I, II, III…)
  - "i" → Roman numerals lowercase (i, ii, iii…)





2. Unordered List (<ul>)

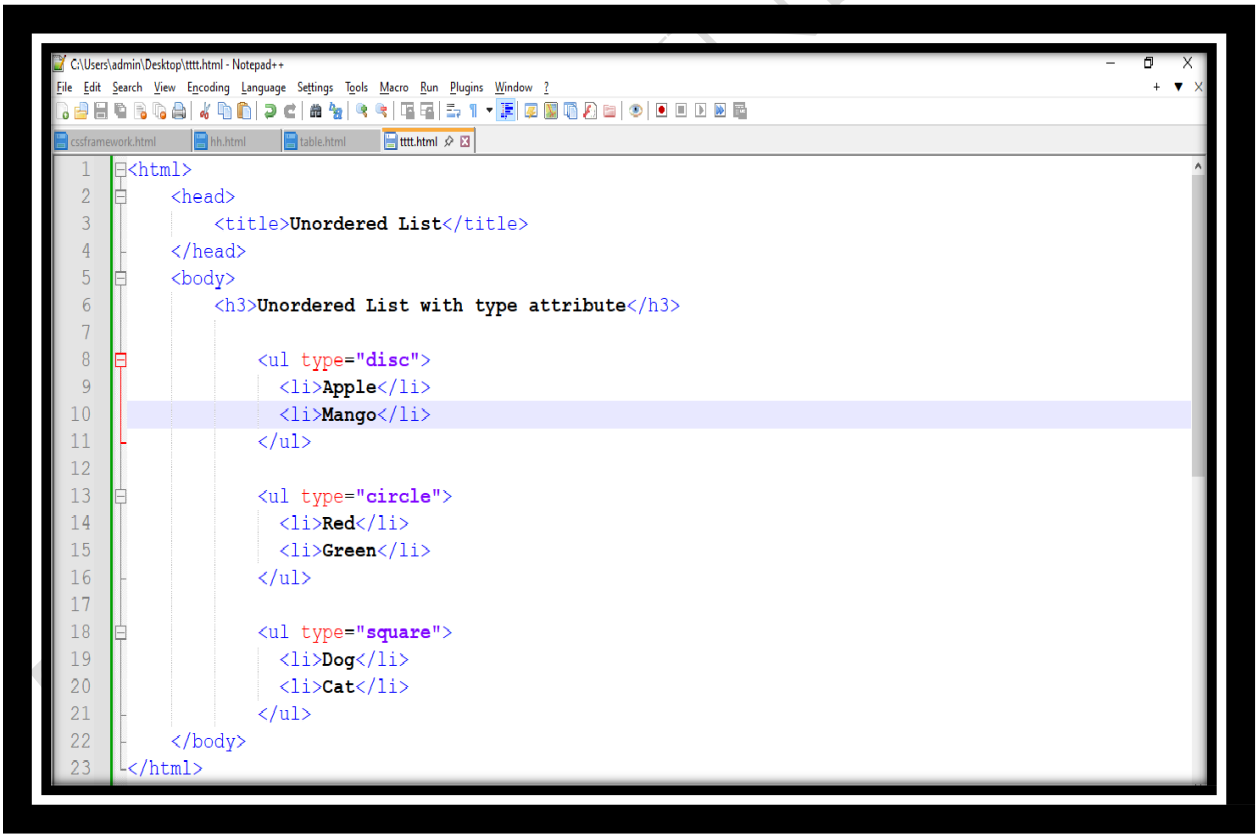
- Shows items with **bullets (•)**.
- Tag: <ul> (unordered list).
- Items inside: <li>.

Attributes of <ul> (Unordered List)

1. type:-

- Defines the **bullet style**.
- Values:
  - "disc" → ● (default solid circle)
  - "circle" → ○ (hollow circle)
  - "square" → ■ (solid square)

Example:



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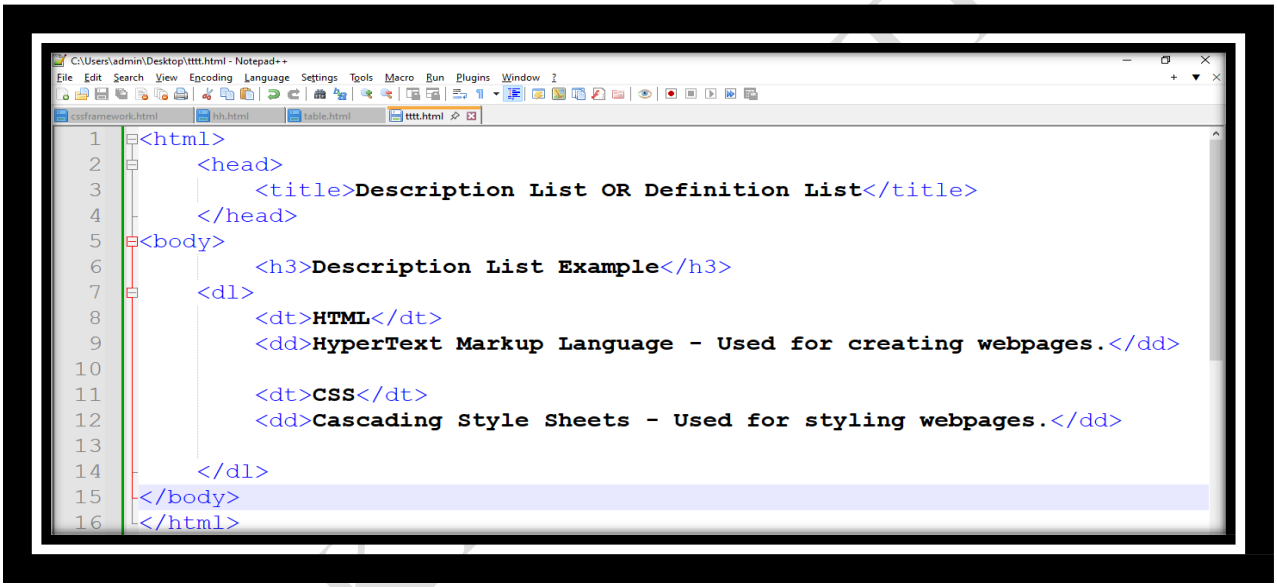
3. Attributes of Description List (<dl>)

- Used for **terms and their descriptions** (like dictionary style).
- Tags:
  - <dl> → description list
  - <dt> → term (word)
  - <dd> → description (meaning)

For <dl> (Description List):

- No special attributes (only <dt> + <dd>).

Example:



4. Nested List (List inside another list)

- We can mix ordered & unordered lists.

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Example:

```
<html>
<head>
  <title>Nested List Example</title>
</head>
<body>
  <h2>Nested List Example</h2>

  <ul>
    <li>Fruits
      <ul>
        <li>Apple</li>
        <li>Mango</li>
        <li>Banana</li>
      </ul>
    </li>
    <li>Vegetables
      <ul>
        <li>Potato</li>
        <li>Carrot</li>
        <li>Onion</li>
      </ul>
    </li>
    <li>Dairy
      <ul>
        <li>Milk</li>
        <li>Cheese</li>
        <li>Butter</li>
      </ul>
    </li>
  </ul>

</body>
</html>
```

Nested List Example

- Fruits
  - Apple
  - Mango
  - Banana
- Vegetables
  - Potato
  - Carrot
  - Onion
- Dairy
  - Milk
  - Cheese
  - Butter

Comparison of List Attributes in HTML

List Type	Attributes	Values / Usage	Example
** (Ordered List)**	**type**	1 (default numbers) A (A, B, C...) a (a, b, c...) I (I, II, III...) i (i, ii, iii...)	<ol type="A"> ...
	start	Any integer → defines starting number/letter	<ol start="5"> ...
	reversed	Boolean (just write reversed) → numbers shown in reverse order	<ol reversed> ...

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3.6 Forms

What is a Form

- A form is used to **collect input from users** on a webpage.
- Example: login form, sign-up form, search box, feedback form.

Form Tag <form> Attributes

- **action** → where the form data will go (server file or URL).
- **method** → how the data will be sent:
  - GET → data shown in the URL (less secure, small data).
  - POST → data not shown in URL (more secure, large data).
- **enctype** → encoding type (used for file uploads).
- **target** → where to display response (_self, _blank).
- **name/id** → unique identity of the form.

Form Controls (Elements inside the form)

- <input> → different types of fields.
- <textarea> → multi-line text (comments).
- <select> + <option> → drop-down list.
- <label> → name/description of input field.
- <button> → clickable button.
- <fieldset> + <legend> → group related fields.

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Types of <input>

- text → one-line text input
- password → hidden characters input
- radio → choose only one option
- checkbox → choose many options
- submit → send the form
- reset → clear the form
- file → upload file
- HTML5 inputs: email, url, number, date, color, range, search

Form Validation (Checking input before sending)

- required → must fill this field
- type="email" → must be a valid email
- min, max → set number limits
- pattern → set rules with regex

Accessibility & Best Practice

- Always use <label> with inputs for better user experience.

Difference Between GET and POST

- **GET** → Fast, data visible in URL, less secure.
- **POST** → Secure, data hidden, can send large data.

```
<html>
    <head>
        <title>Form in HTML:</title>
    </head>
    <body>
        <form>
            <fieldset>

                <legend>Login Form:</legend>
                <label>Username:
                    <input type="text">
                </label><br><br>


                <label>Password:
                    <input type="password" >
                </label><br><br>

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

            </fieldset>
        </form>
    </body>
</html>
```



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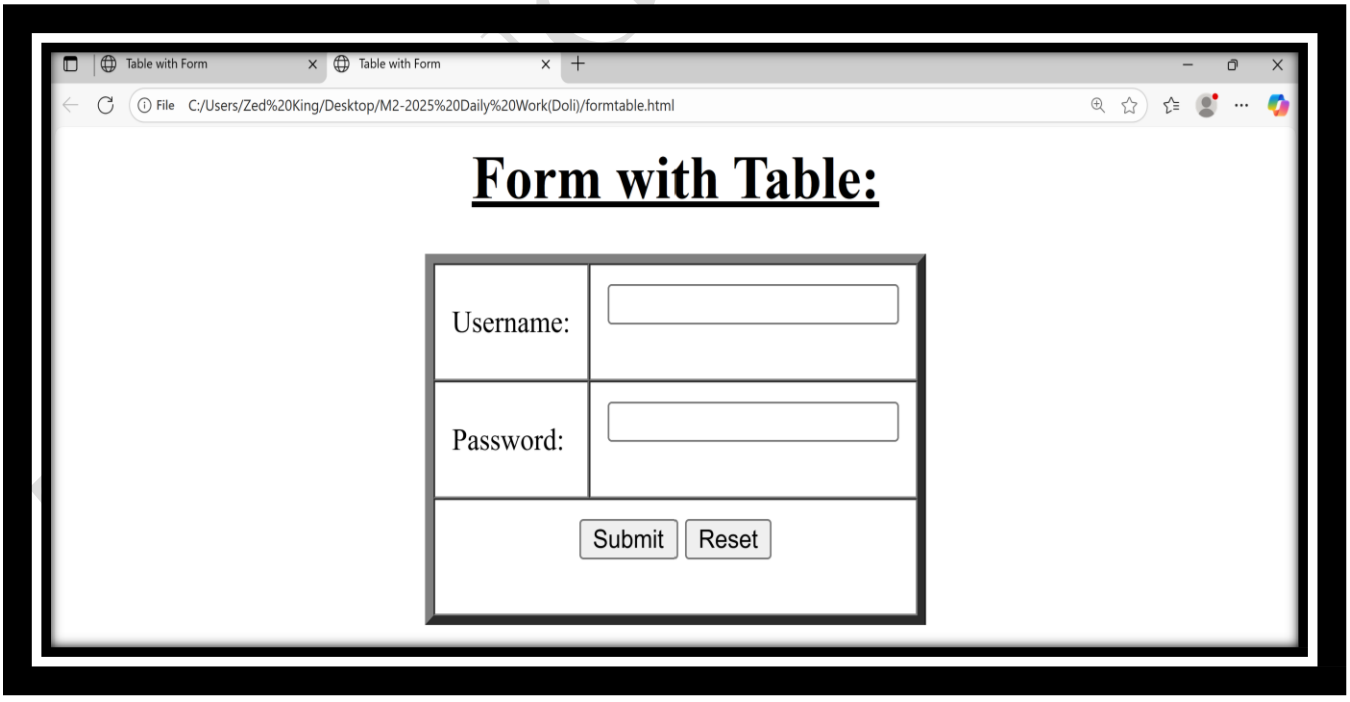
Form With Table:-

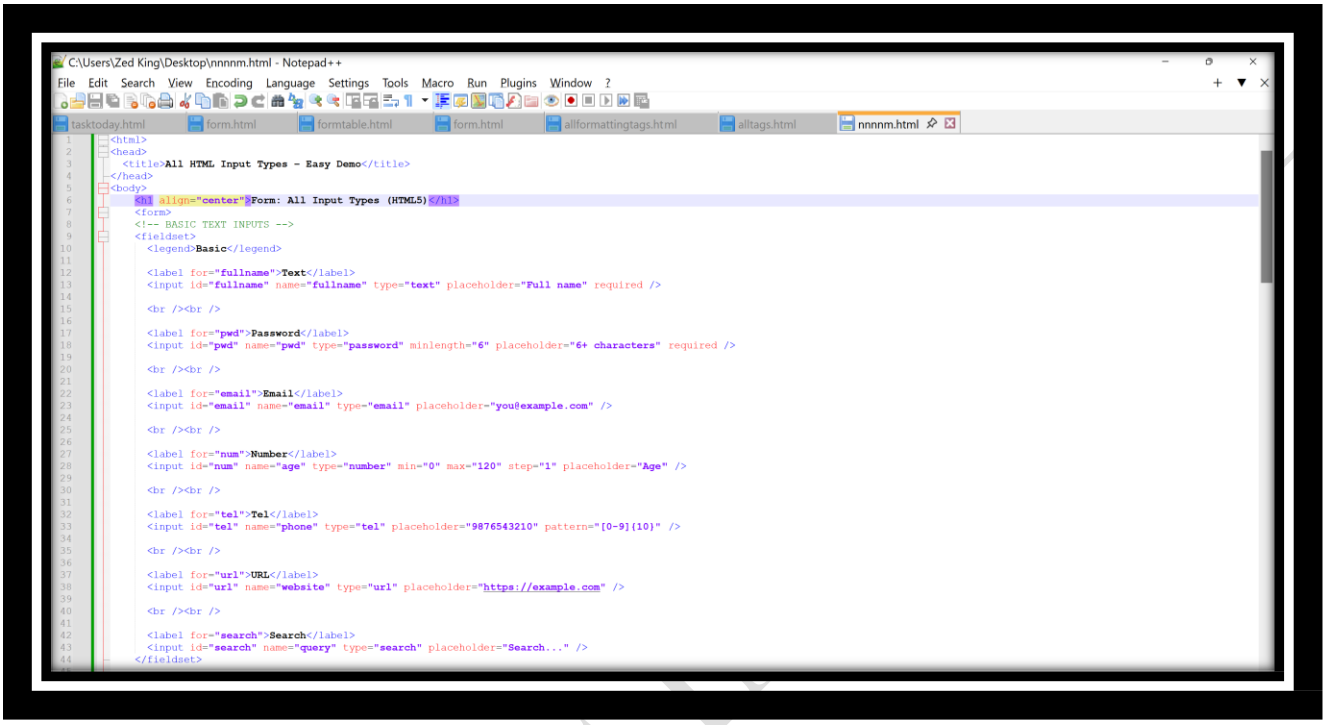
```html
<html>
    <head>
        <title>Table with Form</title>
    </head>
    <body>
            <h1 align="center" ><u>Form with Table:</u></h1>
            <table  align="center" border="5" cellspacing="0" cellpadding="10" >

            <tr>
                <td>Username:</td>
                <td><input type="text" ><br><br></td>
            </tr>

            <tr>
                <td>Password:</td>
                <td><input type="password" ><br><br></td>
            </tr>

            <tr>
                <td colspan="2" align="center"><input type="submit">
                <input type="reset"><br><br></td>
            </tr>
    </table>
</body>
</html>
```

OUTPUT:-

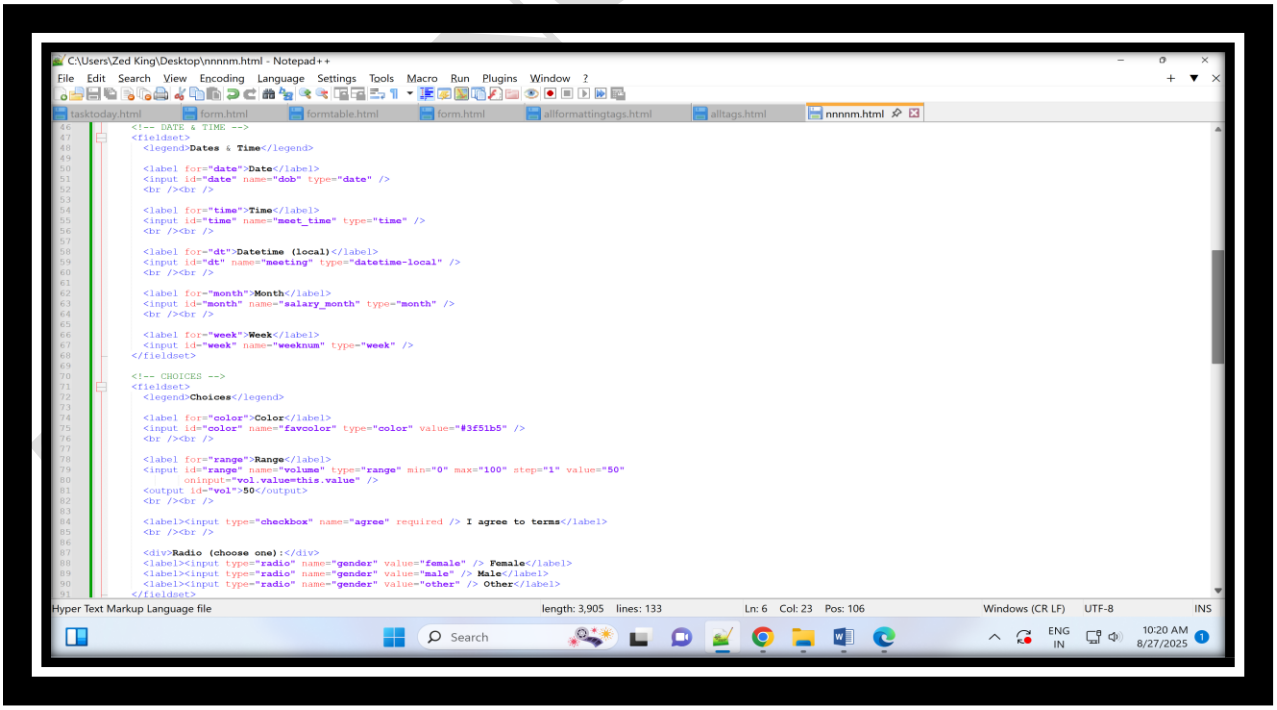


Complete Form with All Input Types:-

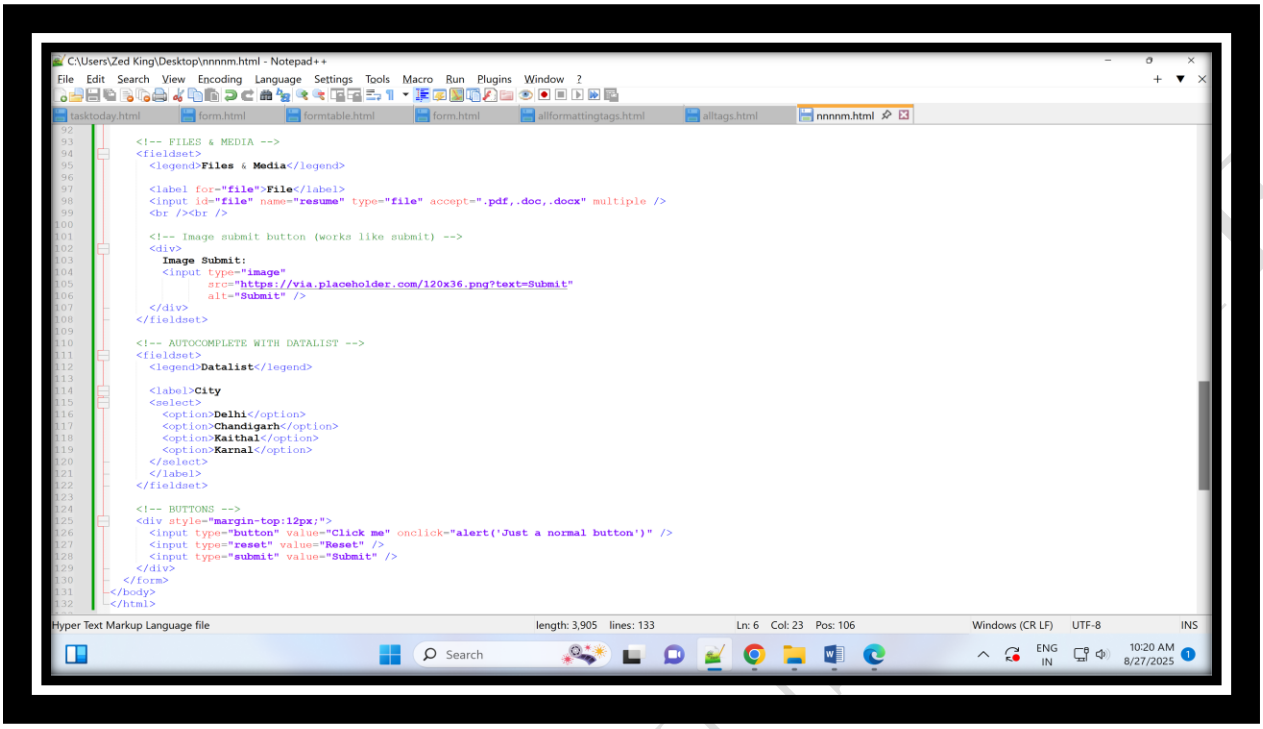
Part-1



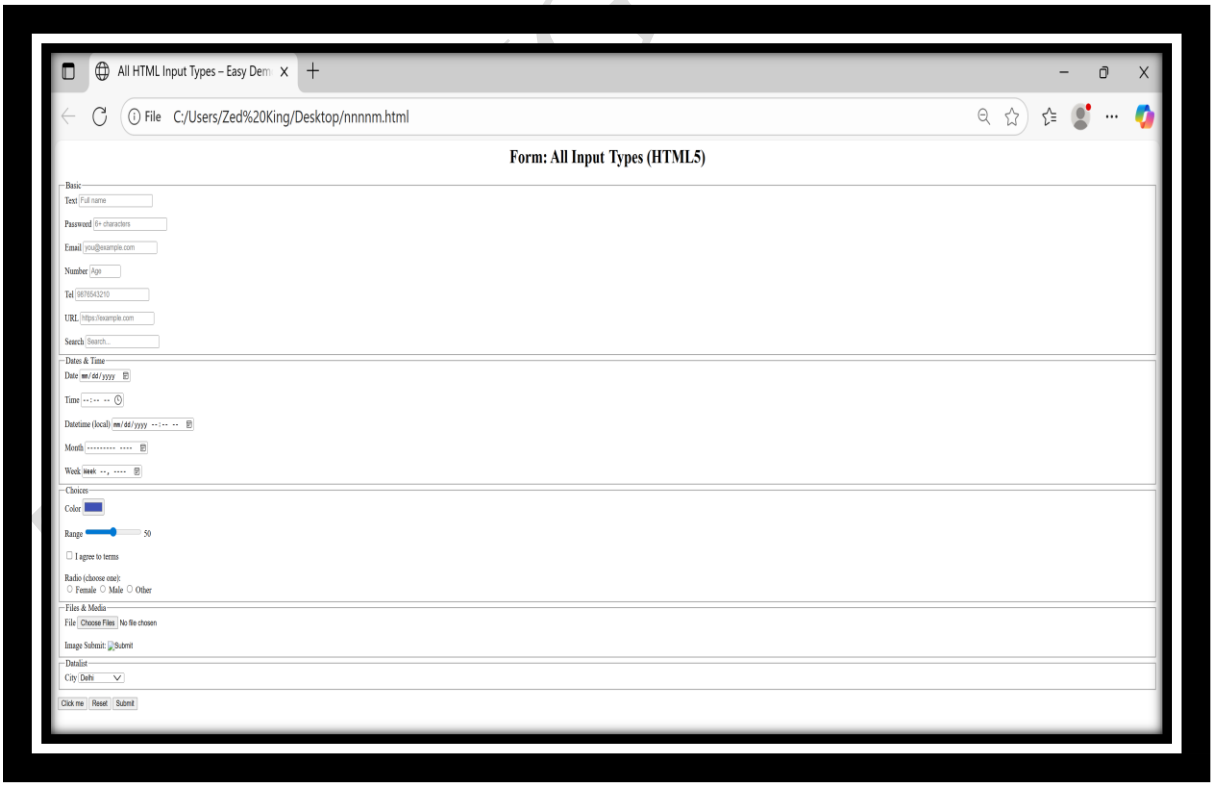
Part-2



Part-3



OUTPUT:-



3.6 Forms

- The <form> tag is used to collect user input.
- Data inside the form is sent to a server when submitted.

Basic Syntax:

```
<form action="server_file" method="post">
        <!-- form elements here -->
</form>
```

3.6.1 Form Elements

1. **<form>** – Main container.
    - **Attributes**:
        - action → URL of file that will handle the form data.
        - method → how data is sent (get / post).
        - enctype → encoding type (used with file upload).
        - autocomplete → on/off (save previous input or not).
2. **<input>** – Most common element for taking input.
    - It changes behavior with the type attribute.
3. **<label>** – Provides a name/description for inputs.
4. **<textarea>** – Multi-line text input (comments, messages).
5. **<select> + <option>** – Dropdown menu.
6. **<button>** – Button (submit / reset / custom).
7. **<fieldset> + <legend>** – Group related form elements.
8. **<datalist>** – Provides autocomplete suggestions.

3.6.2 All Important <input> Types

Input Type	Example	Description
text	<input type="text">	Single-line text (name, username).
password	<input type="password">	Text hidden by dots/stars.

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Input Type	Example	Description
email	<input type="email">	Input must be in email format.
number	<input type="number">	Only numbers allowed (can set min/max/step).
tel	<input type="tel">	Telephone number.
url	<input type="url">	Must be a valid website link.
search	<input type="search">	Search box style input.
date	<input type="date">	Date selector.
time	<input type="time">	Time selector.
datetime-local	<input type="datetime-local">	Date + time selector (no timezone).
month	<input type="month">	Month selector.
week	<input type="week">	Week selector.
color	<input type="color">	Color picker.
range	<input type="range" min="0" max="100">	Slider (choose number range).
checkbox	<input type="checkbox">	Multiple choice selection.
radio	<input type="radio">	Choose only one from group.
file	<input type="file">	Upload file(s).
hidden	<input type="hidden">	Invisible, stores extra data.
image	<input type="image" src="btn.png">	Submit button with image.
button	<input type="button" value="Click">	Normal button (JS actions).
reset	<input type="reset">	Resets form fields.
submit	<input type="submit">	Sends form data.

3.6.2.1 Attributes Description (Common Attributes of <input>)

Attribute	Example	Description
name	<input name="username">	Unique name to identify input.

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Attribute	Example	Description
value	<input type="text" value="default">	Default/pre-filled value.
placeholder	<input placeholder="Enter name">	Hint text inside box.
required	<input required>	Makes field compulsory.
readonly	<input readonly>	Cannot be edited but visible.
disabled	<input disabled>	Cannot be used or submitted.
min / max	<input type="number" min="1" max="10">	Set minimum & maximum values.
step	<input type="number" step="2">	Defines step size (like 2,4,6…).
pattern	<input pattern="[0-9]{10}">	Regular expression for validation.
checked	<input type="radio" checked>	Pre-selected option.
multiple	<input type="file" multiple>	Allows selecting multiple files.
size	<input type="text" size="20">	Width of text input.
maxlength	<input type="text" maxlength="10">	Max number of characters.
autofocus	<input autofocus>	Cursor automatically in field on page load.
autocomplete	<input autocomplete="off">	Disable browser suggestions.

Common Form Elements

Element	Description
<form>	Creates a form
<input>	Input field (text, radio, checkbox, etc.)
<label>	Label for input
<textarea>	Multi-line text input
<select>	Drop-down list
<option>	Option in a select
<button>	Button (submit, reset, normal)
<fieldset>	Groups related elements
<legend>	Caption for fieldset
<datalist>	List of predefined options

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<output>	Displays result of calculation

3. <input> Types in HTML

Type	**Description (English)**
text	Single-line text input
password	Password input
email	Email input
number	Numeric input
radio	Radio button (one choice)
checkbox	Checkbox (multiple choice)
submit	Submit button
reset	Reset form values
button	General button
date	Date selector
file	File upload
color	Color picker
range	Range slider
tel	Telephone input
url	Website URL input
hidden	Hidden input (not visible)

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3.7 Frames: Frameset, Nested Frames

Frames in HTML

- **Frames** are used to divide the browser window into multiple sections, each section can load a different HTML page.
- In early HTML (HTML 4.01), frames were common, but in **HTML5 frames/frameset are removed** (now we use **CSS + <iframe>** instead).
- Still, you may see them in **old exam questions** like O Level.

<frameset> Tag

- Instead of <body>, we use <frameset> when creating frames.
- <frameset> defines how to divide the screen into **rows** or **columns**.
- Inside <frameset>, we use the <frame> tag to load pages.

Attributes of <frame>

- **src** → which file to display.
- **name** → give a name (used to open links inside this frame).
- **scrolling** → "yes", "no", "auto" (control scrollbars).
- **noresize** → prevents resizing of frame.
- **border** → show/hide border.

Example:

```
<frame src="menu.html" name="menu" scrolling="auto" noresize>
```

Nested Frames

- **Nested frames** mean putting one <frameset> inside another.
- First divide into rows/columns, then inside one frame, divide further.

Example:

```
<html>
<head>
  <title>Nested Frames Example</title>
</head>
<frameset rows="20%,80%">
  <frame src="header.html">

  <!-- Nested frameset inside second row -->
  <frameset cols="30%,70%">
    <frame src="menu.html">
    <frame src="content.html">
  </frameset>

</frameset>
</html>
```

Layout:

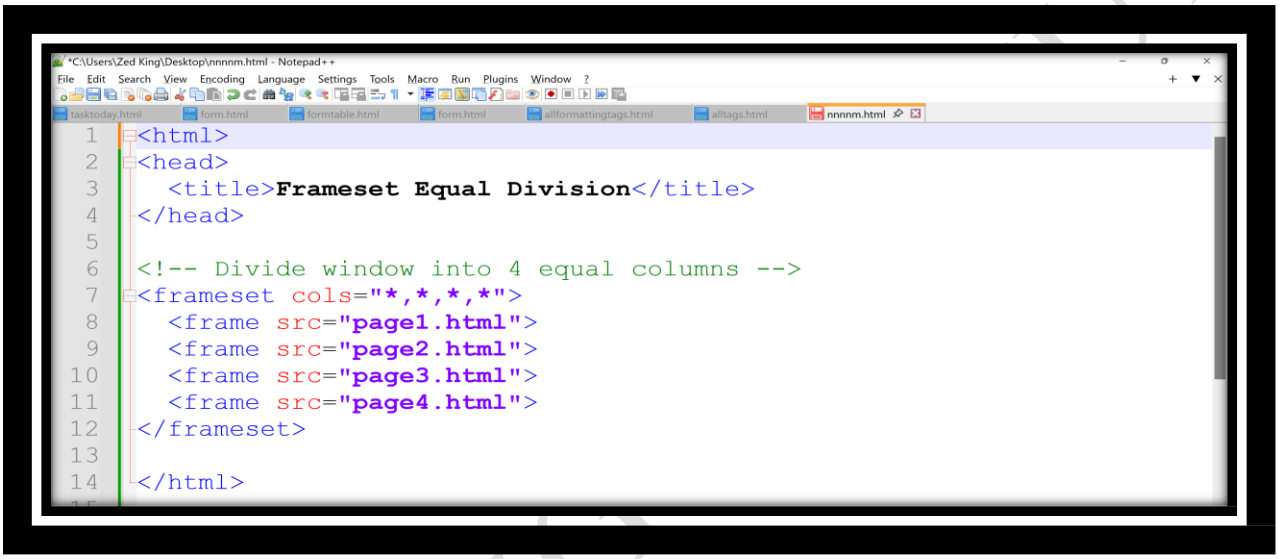
- Top 20% = header.html
- Bottom 80% divided into:
  - Left = menu.html
  - Right = content.html

Important Points

- <frameset> **replaces** <**body**> (you cannot use both together).
- Frames are **not supported in HTML5**.
- Modern alternative = <iframe> (inline frame).

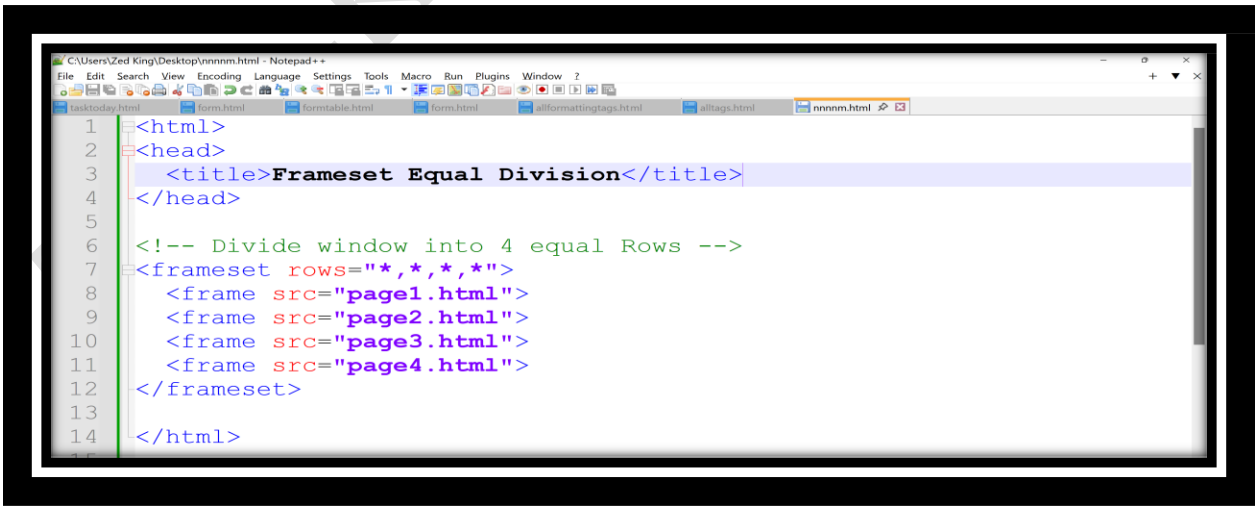
3.7.1 Creating Vertical Columns

Along y-axis:-



3.7.2 Creating Horizontal Rows

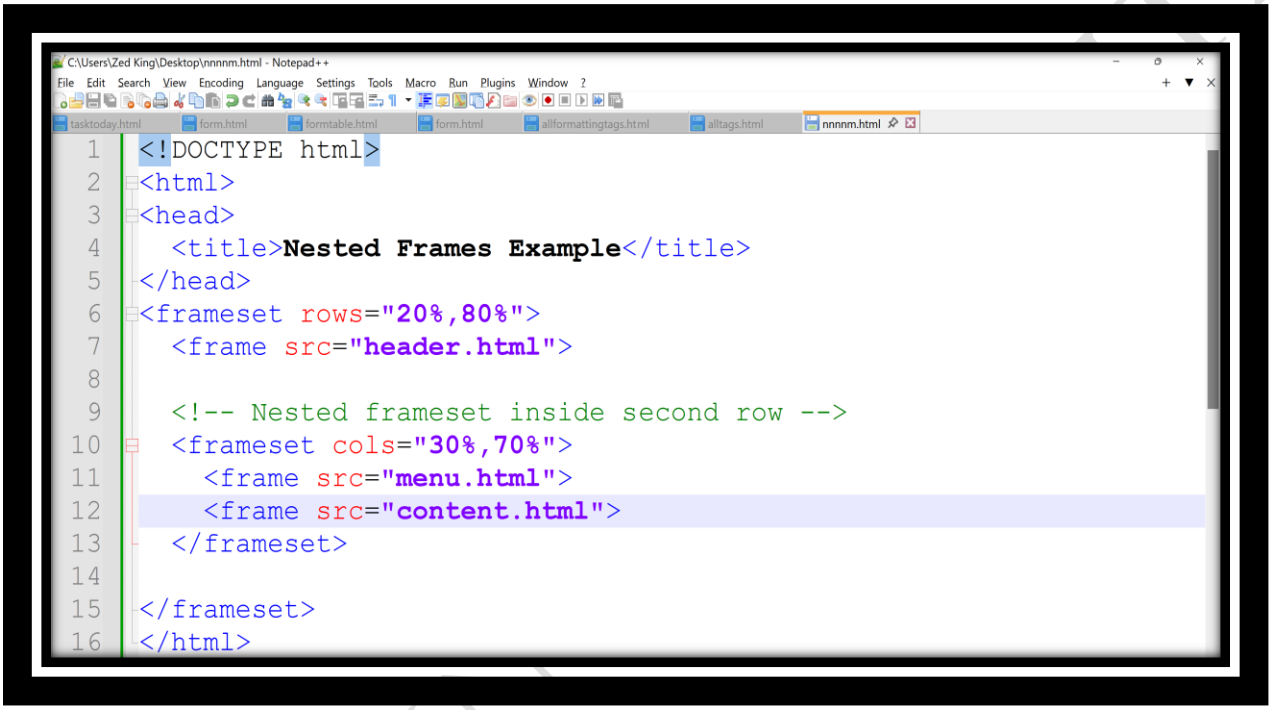
Along x-axis:-



3.7.3 Mixing Columns and Rows

Along(x-axis + y-axis):-

Rows + Columns



3.8 Nested Frames

Rows + Columns = Nested Frames

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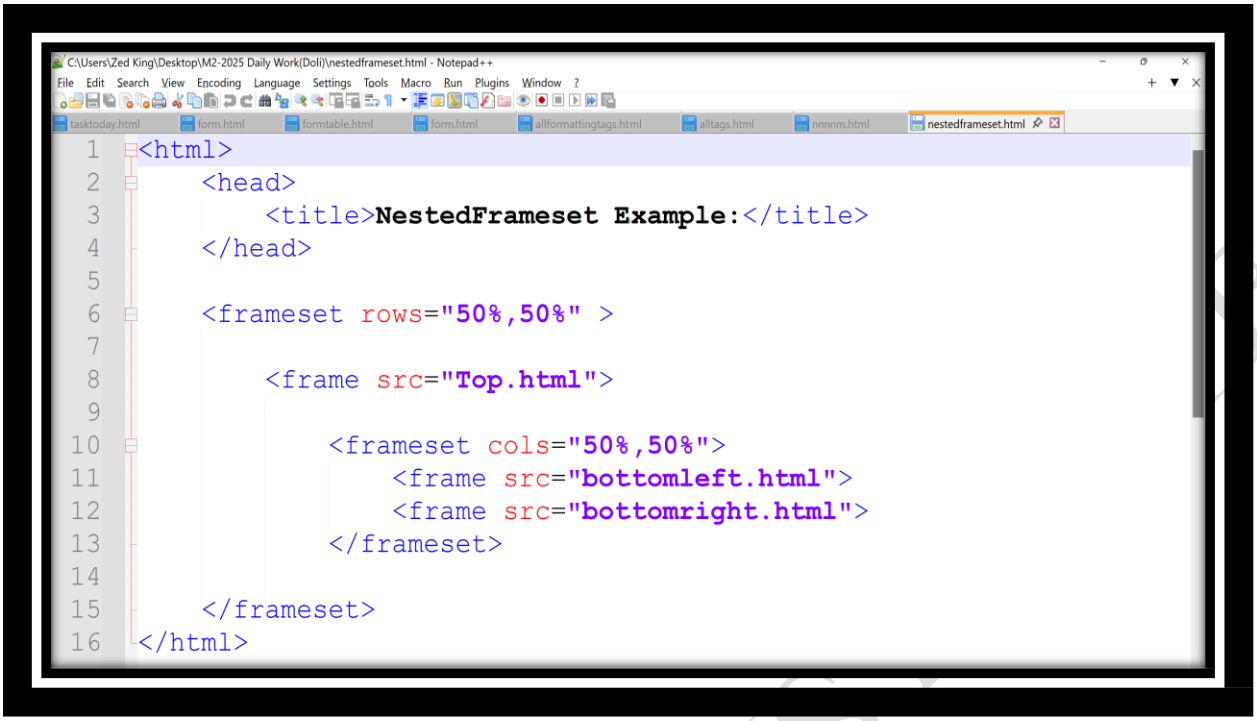

3.8.1 Targeting Frames with Links

Target Attribute in HTML Links

- In HTML, the <a> (anchor) tag is used to create hyperlinks.
- The target attribute specifies **where to open the linked document**.
- It can open in the **same window, new window, parent frame, top window**, or in a **named frame**.

Syntax

```
<a href="URL" target="value">Link Text</a>
```

Target Attribute Values

1. **_self (default)**
   - Opens the link in the **same frame or window** where the link is clicked.

```
<a href="page1.html" target="_self">Open in Same Window</a>
```

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2. **_blank**
   - Opens the link in a **new tab or new window**.

```
<a href="page2.html" target="_blank">Open in New Tab</a>
```

3. **_top**
   - Opens the link in the **entire window**, removing all frames.
   - Used in framesets to break out of frames.

```
<a href="page3.html" target="_top">Open in Full Window</a>
```

4. **_parent**
   - Opens the link in the **parent frame** (one level up in nested frames).

```
<a href="page4.html" target="_parent">Open in Parent Frame</a>
```

5. **Custom Frame Name**
   - If you give a <frame> or <iframe> a name, the link can open in that frame.

```
<a href="page5.html" target="contentFrame">Open in Right Frame</a>
```

Use of Target with Frames

- In **frameset layout**, you can assign name to a frame and use target="frameName" in links.
- This allows menu links in one frame to display content in another frame.

Important Points

- Default target is _self.
- _blank is mostly used for **external links** so that the main page stays open.
- In modern HTML5, frameset is obsolete, but target still works with <a> and <iframe>.

Example with TargetFrames

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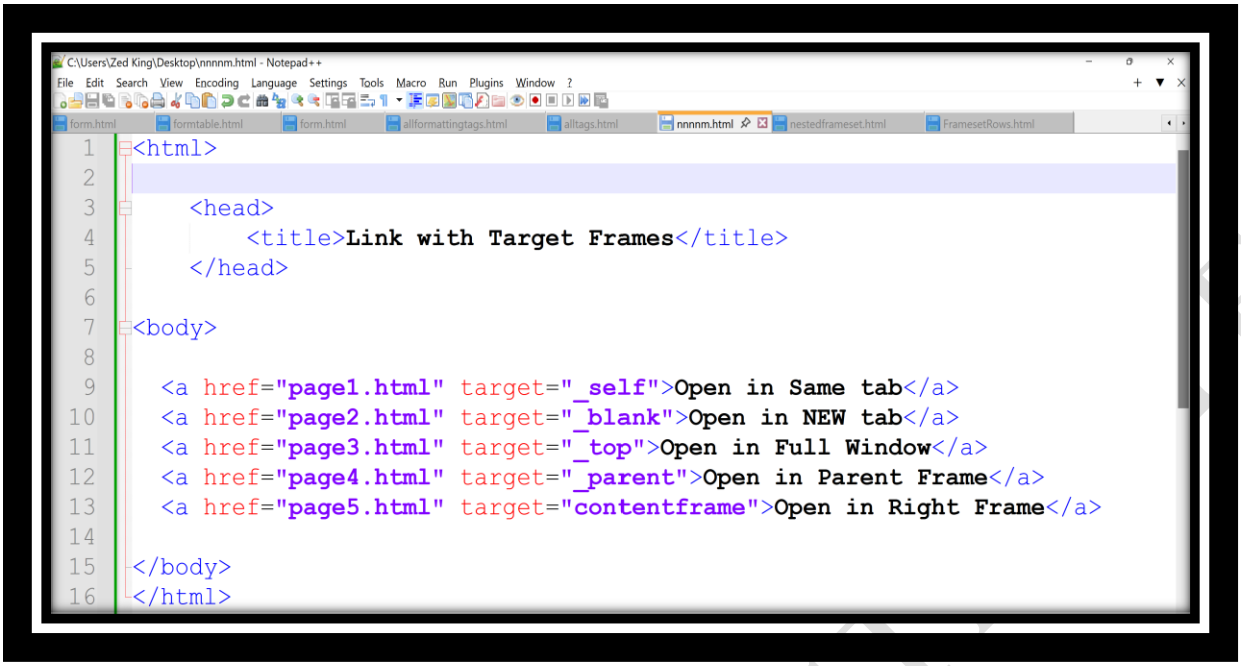

Summary:

- **_self** → same frame (default)
- **_blank** → new tab/window
- **_top** → entire window (break frames)
- **_parent** → parent frame
- **frameName** → opens in that named frame

3.9 Introduction of HTML 5

Introduction of HTML5

- New semantic tags: <header>, <footer>, <section>, <article>, <aside>, <nav>.
- Multimedia: <audio>, <video>.
- Form features: new input types (email, url, date).
- Graphics: <canvas>, <svg>.

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3.9.1 HTML 5 New Elements

HTML5 New Elements

1. Section Tag
2. Nav Tag
3. Article Tag
4. Aside Tag
5. Audio Tag
6. Video Tag
7. Header Tag
8. Footer Tag

1. Structural Elements (for webpage layout)

- <header> → Top section of page (title, logo, menu).
- <nav> → Navigation links (menu, navbar).
- <section> → A part/section of content.
- <article> → Independent article or blog post.
- <aside> → Sidebar content (ads, related links).
- <footer> → Bottom part (copyright, contact info).

Example:

```
<html>
    <head>
      <title>HTML5 Layout</title>
    </head>
    <body>
      <header>
        <h1>My Website</h1>
      </header>

      <nav>
        <a href="#">Home</a> |
        <a href="#">About</a> |
        <a href="#">Contact</a>
      </nav>

      <section>
        <article>
          <h2>My First Blog</h2>
          <p>This is an article in HTML5.</p>
        </article>
      </section>

      <aside>
        <p>Related Links</p>
      </aside>

      <footer>
        <p>&copy; 2025 Geeta</p>
      </footer>
</body>
</html>
```



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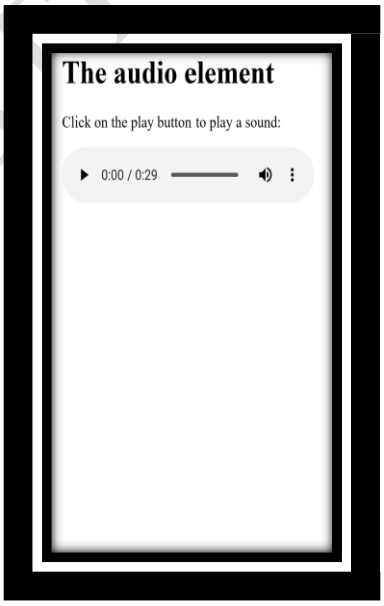
2. **Multimedia Elements**

- <audio> → To add sound/music.
- <video> → To add video.
- <canvas> → For graphics & drawings.
- <svg> → Scalable Vector Graphics (shapes, charts).

Example:-

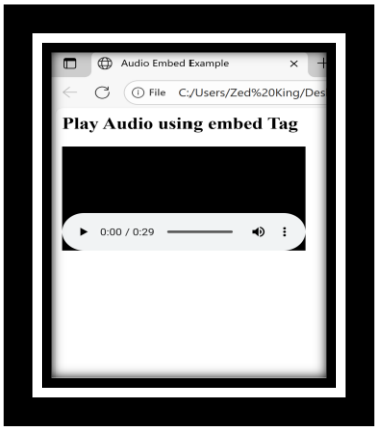
<audio controls>
<source src="song.mp3" type="audio/mpeg">
</audio>

```
<html>
    <head>
        <title>Audio Example:</title>
    </head>
    <body>
            <h1>The audio element</h1>
            <p>Click on the play button to play a sound:</p>
        <audio controls>
            <source src="myaudio.mp3"
                    type="audio/mp3">
        </audio>
    </body>
</html>
```



OR

```
<html>
    <head>
    <title>Audio Embed Example</title>
    </head>
    <body>
        <h2>Play Audio using embed Tag</h2>
    <embed      src="myaudio.mp3"
                type="audio/mp3"
                width="50%"
                height="50%" >
    </embed>
    </body>
</html>
```



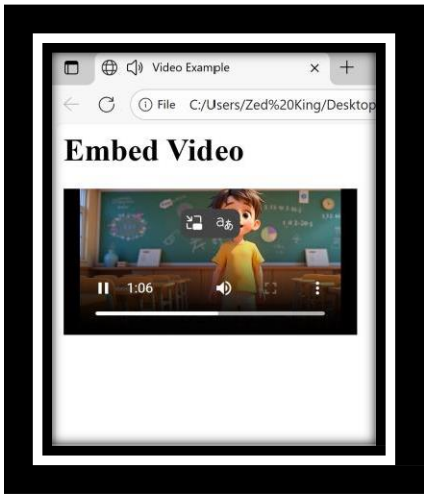
Example:-

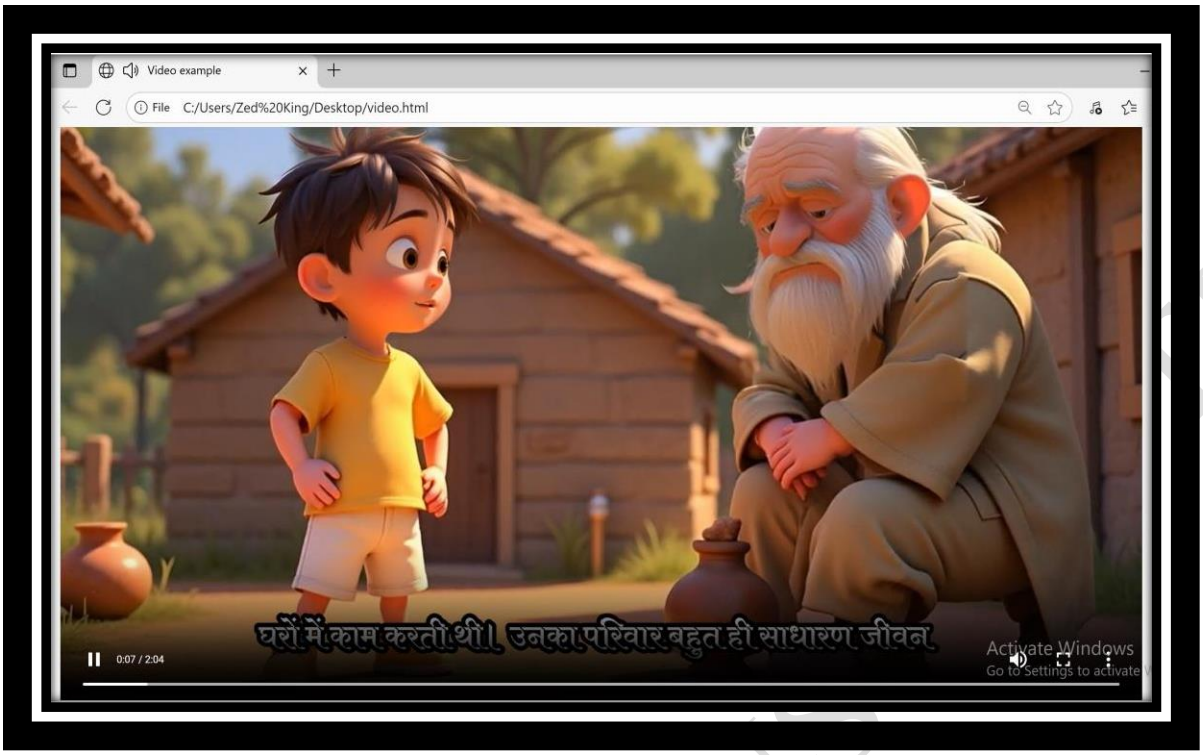
```
<video controls width="300">
<source src="movie.mp4" type="video/mp4">
</video>
```

```
<html>
    <head>
        <title>Video example</title>
    </head>
    <body>
        <video controls>
            <source src="myvideo.mp4"
                    type="video/mp4">
        </video>
    </body>
</html>
```

OR

```
<html>
    <head>
        <title>Video Example</title>
    </head>
    <body>
        <h1>Embed Video</h1>
        <embed      src="myvideo.mp4"
                    type="video/mp4"
                    width="%"
                    height="%">
        </embed>
    </body>
</html>
```





3. **Form Elements**

- <datalist> → Suggest options while typing (use select tag with options).
- <output> → Shows calculation/result.
- New input types: email, number, radio button, date, time, month, week, datetime, range, color, checkbox, file etc.



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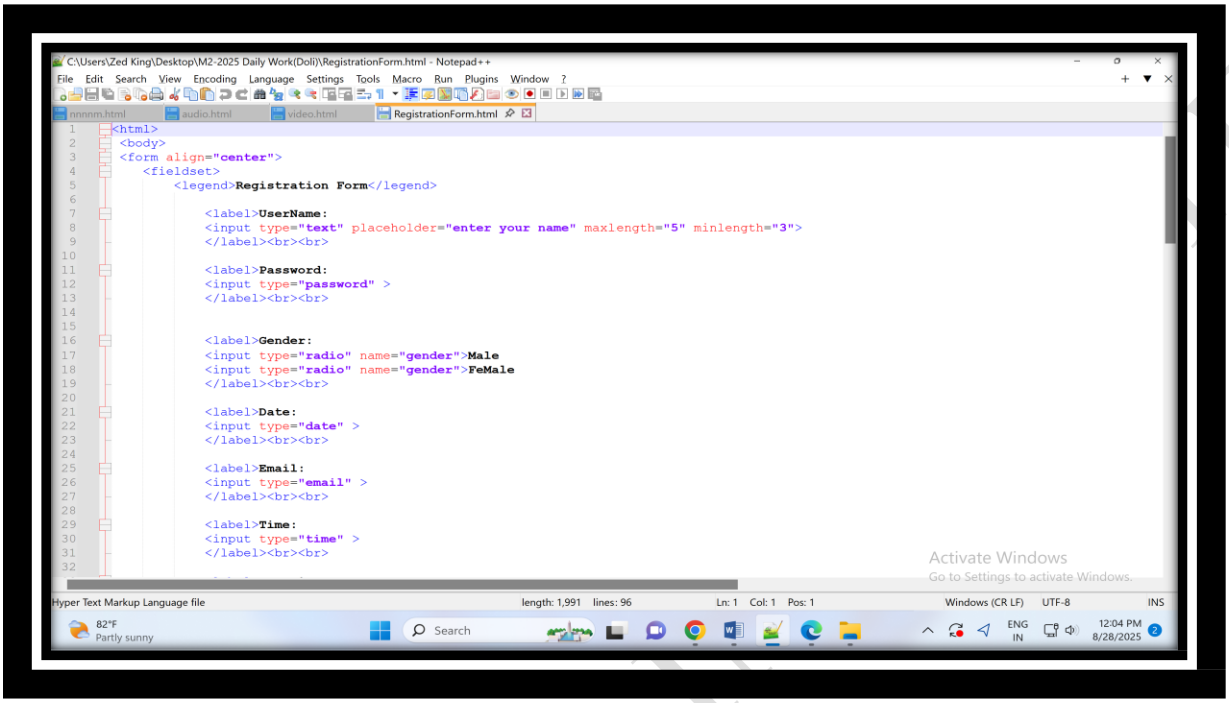
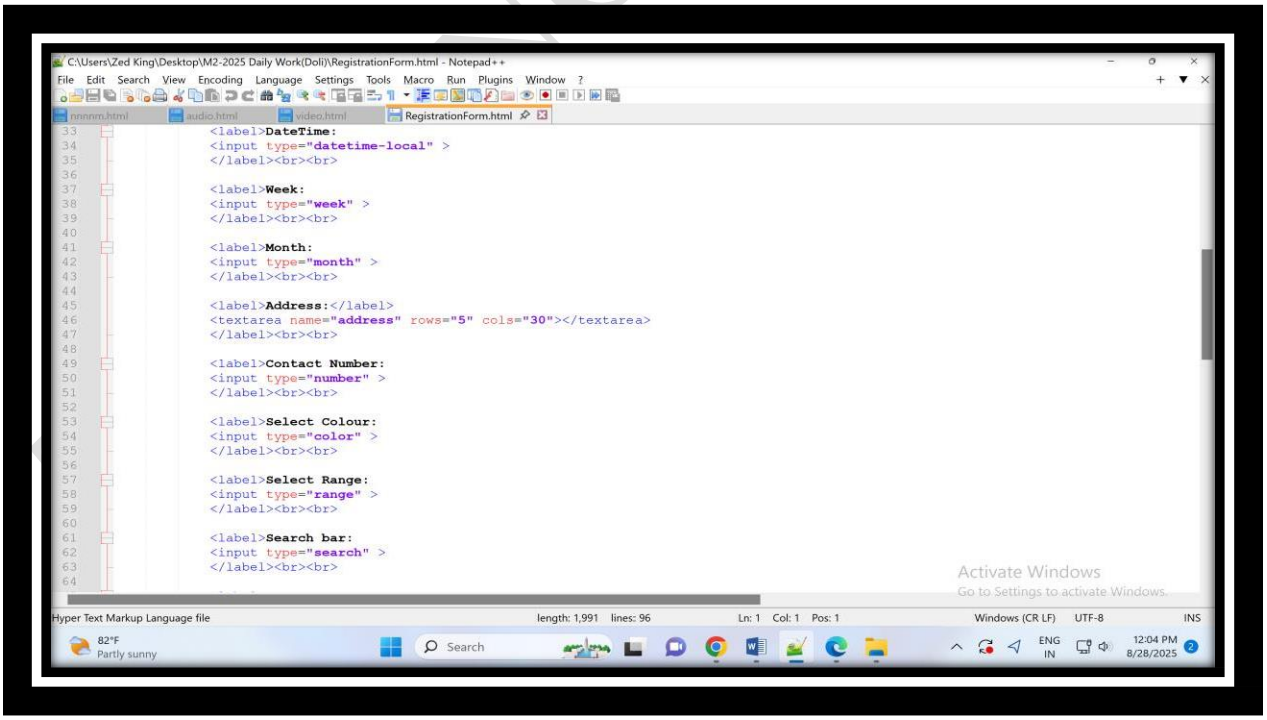
Example:

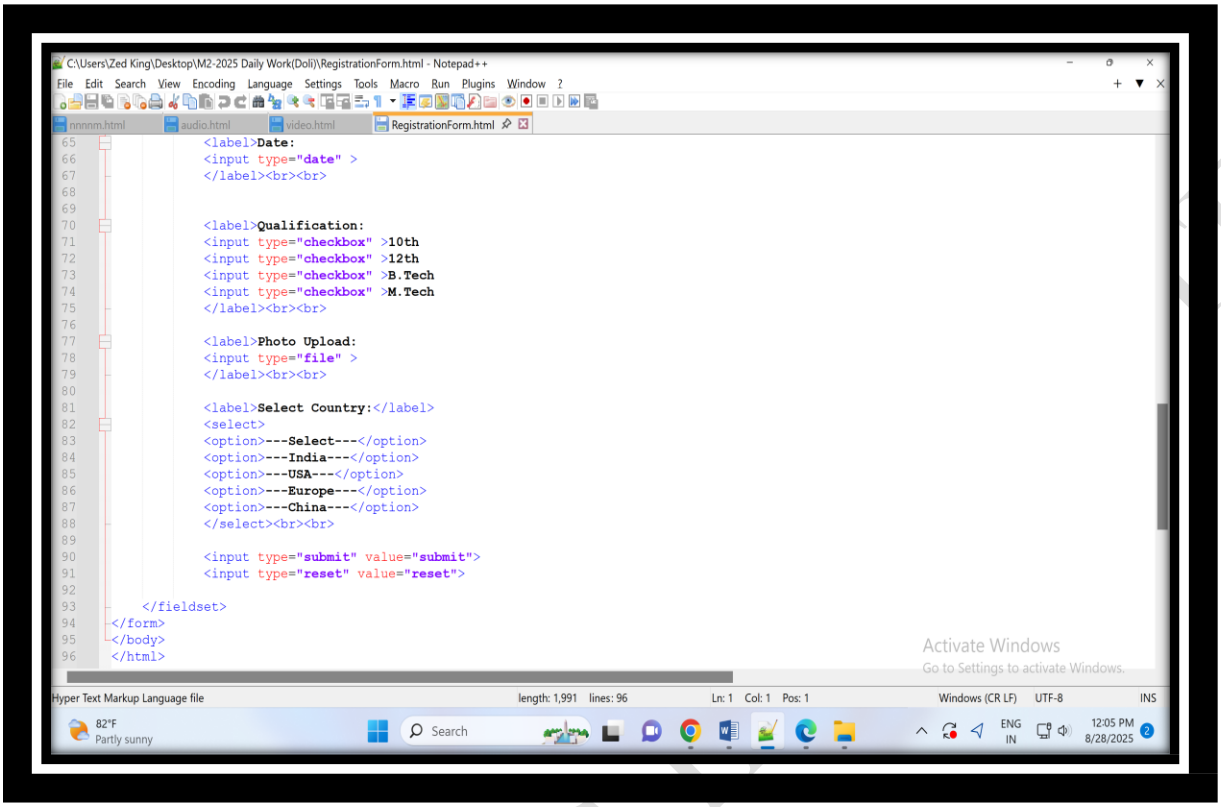
Part-1



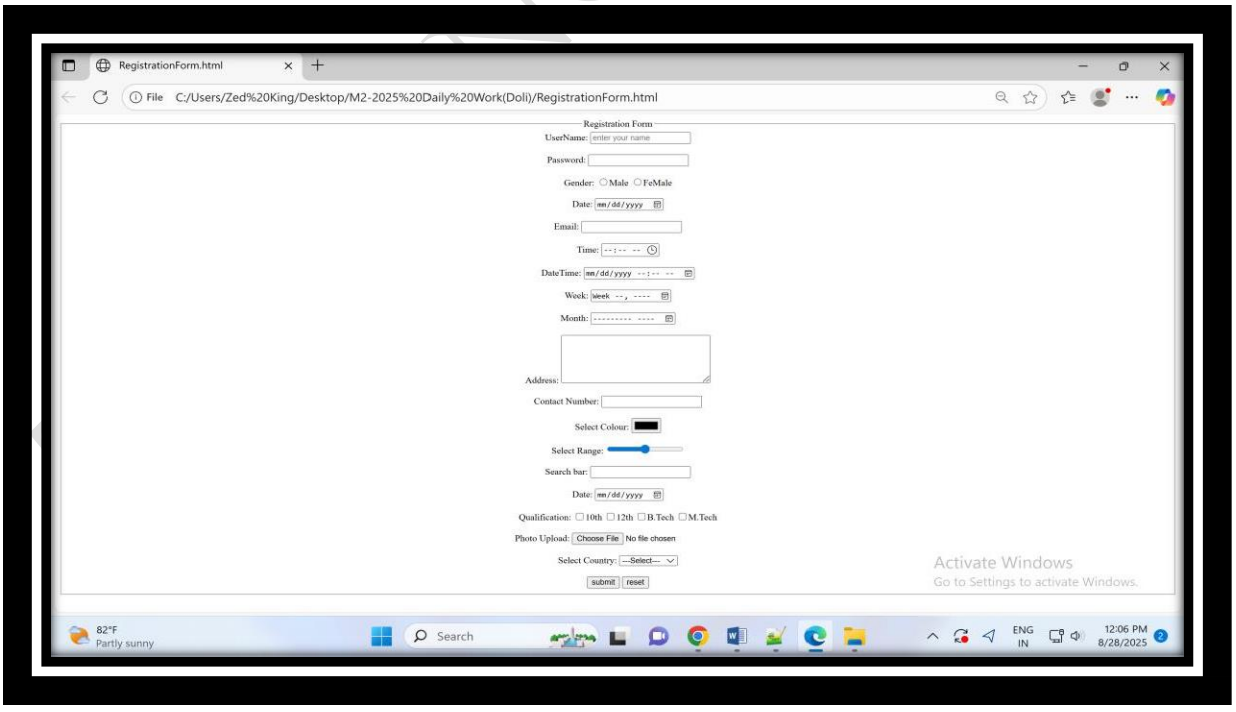
Part-2



Part-3



OUTPUT:-



Summary (Easy to Remember):-

- **Layout:** <header>, <nav>, <section>, <article>, <aside>, <footer>
- **Media:** <audio>, <video>, <canvas>, <svg>
- **Forms:** <datalist>, <output>, new input types(radio button, date, time, month, week, datetime, range, color, checkbox, file)

3.9.2 HTML 5 Form Validation

- Input types: email, url, number, date, range.
- Attributes:
  - required → field must be filled
  - pattern → date, email validation
  - min, max, maxlength, placeholder

Example:

```
<html>
<head>
    <title>Form in HTML with required:</title>
</head>
<body>
<form>
    <fieldset>
        <legend>Login Form:</legend>

            <label>Username:
            <input type="text" required>
            </label><br><br>

            <label>Password:
            <input type="password" required>
            </label><br><br>

            <label>EMAIL ID:
            <input type="email" required >
            </label><br><br>


            <input type="submit">
            <input type="reset">
            </label>

    </fieldset>
</form>
</body>
</HTML>
```

OUTPUT:-



Iframe in HTML

- **Iframe** stands for **Inline Frame**.
- It is used to embed another HTML page or external web content (like YouTube video, Google Maps, Ads, or another website) inside a web page.
- **Tag: <iframe> … </iframe>**
- It behaves like a window inside your page that loads a separate document.

Basic Syntax of iframe

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



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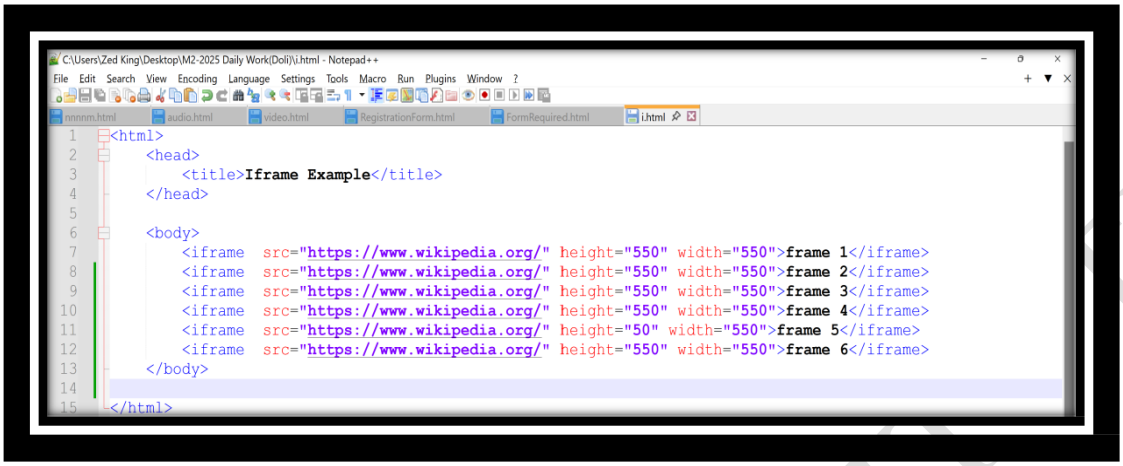
Example:-



Attributes of iframe

Attribute	Description	Example
src	URL of the page/document to embed	<iframe src="page.html"></iframe>
width	Width of the frame (px or %)	<iframe width="500"></iframe>
height	Height of the frame (px or %)	<iframe height="400"></iframe>
title	Accessibility title for screen readers	<iframe title="Example"></iframe>
name	Assigns a name to iframe (used with links & forms)	<iframe name="myFrame"></iframe>
frameborder (deprecated)	Border around frame (0 or 1)	<iframe frameborder="0"></iframe>
allowfullscreen	Allows video/fullscreen content	<iframe allowfullscreen></iframe>

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