

Exercise 3. HTML 5 and Cascading Style Sheets, Types of CSS

- a. Write a HTML program, that makes use of `<article>`, `<aside>`, `<figure>`, `<figcaption>`, `<footer>`, `<header>`, `<main>`, `<nav>`, `<section>`, `<div>`, `` tags.

1. `<article>`

Purpose:

Represents a **self-contained** piece of content that can stand alone and be independently distributed.
Examples: Blog post, news article, forum post.

```
html

<article>
  <h2>My Travel Experience</h2>
  <p>I visited Paris last summer. It was amazing!</p>
</article>
```

2. `<aside>`

Purpose:

Contains **indirectly related** content, often placed as a sidebar.
Examples: Related links, advertisements, author bio.

Example:

```
html

<aside>
  <h3>About the Author</h3>
  <p>John is a travel blogger from New York.</p>
</aside>
```

3. `<figure>`

Purpose:

Groups **media content** (image, diagram, code snippet) with its caption.

Example:

```
<figure>
  
  <figcaption>Snowy mountains in Switzerland</figcaption>
</figure>
```

4. **<footer>**

Purpose:

Represents a **footer** for a section or whole page.
Can contain: copyright, contact info, related links.

Example:

```
<footer>
  <p>&copy; 2025 My Website</p>
</footer>
```

5. **<header>**

Purpose:

Represents an **introductory content** or heading for a section/page.
Often contains: logo, title, navigation.

```
<header>
  <h1>My Blog</h1>
  <p>Sharing my thoughts and stories</p>
</header>
```

6. <main>

Purpose:

Represents the **main content area** unique to the page.

There should be only **one** <main> per page.

```
<main>
  <article>...</article>
</main>
```

7. <nav>

Purpose:

Contains **navigation links**.

Examples: menus, table of contents, site maps.

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

8. <section>

Purpose:

Groups **related content** within a document.

Should have a heading.

```
<section>
  <h2>Services</h2>
  <p>We provide web design and development services.</p>
</section>
```

9.<div>

Purpose:

A **generic container** for grouping content when no semantic element fits.
Usually used for styling or scripting.

Example:

```
<div class="container">
  <p>This content is inside a div.</p>
</div>
```

10.

Purpose:

An **inline container** used to style or manipulate part of text.

Example:

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

- <header> for page and article headers
- <nav> for navigation
- <main> as main content container
- <article> for a standalone content block
- <section> for grouping article content
- <figure> & <figcaption> for an image and caption
- <aside> for side info
- <div> could be added for generic grouping if needed
- for inline text styling or metadata
- <footer> for both article and page footers

Program

```
<!DOCTYPE html>
<html>
  <head>
```

```
<meta charset="UTF-8">
<title>Semantic HTML Example</title>
</head>
<body>
<header>
    <h1>My Simple Website</h1>
    <nav>
        <a href="home.html">Home</a> | 
        <a href="about.html">About</a> | 
        <a href="contact.html">Contact</a>
    </nav>
</header>

<main>
    <article>
        <header>
            <h2>Article Title</h2>
            <span>Posted on: August 11, 2025</span>
        </header>
        <section>
            <p>This is the main content of the article. HTML5 semantic tags help structure a webpage.</p>
        </section>
        <figure>
            
            <figcaption>Sample image with a caption.</figcaption>
        </figure>
    </article>
</main>
```

```

<footer>
    <span>Developed by student name (Roll No.)</span>
</footer>
</article>

<aside>
    <h3>Related Information</h3>
    <p>This is some additional content related to the RGM College.</p>
</aside>
</main>

<footer>
    <p>&copy; 2025 My Simple Website</p>
</footer>
</body>
</html>

```

b. Write a HTML program, to embed audio and video into HTML web page.

1. `<audio>` Tag

- **Purpose:** Embeds audio into a web page.
- **Attributes:**
 - `controls` → shows play, pause, and volume buttons.
 - `autoplay` → starts playing automatically (often blocked until user interaction).
 - `loop` → restarts audio after it finishes.
 - `muted` → starts with volume muted.
- **Inside `<audio>`:**
 - `<source>` → specifies audio file location & format.

- o type attribute → tells the browser the audio format (e.g., audio/mpeg, audio/ogg).

2. <video> Tag

- **Purpose:** Embeds video into a web page.
- **Attributes:**
 - o controls → play/pause, seek bar, volume.
 - o width & height → size of video.
 - o autoplay, loop, muted → similar to <audio>.
 - o poster → image displayed before the video plays.
- **Inside <video>:**
 - o <source> → video file + format (video/mp4, video/webm).

Why Multiple <source> Tags?

Different browsers support different media formats:

- **MP3 / MP4** → widely supported (Chrome, Edge, Safari).
- **Ogg / WebM** → supported in Firefox, some open-source browsers.
Including multiple ensures **maximum compatibility**.

Program

```
<!DOCTYPE html>

<html>
  <head>
    <meta charset="UTF-8">
    <title>Embed Audio and Video</title>
  </head>
  <body>
    <h1>Embedding Audio and Video in HTML</h1>
    <!-- Audio Example -->
    <section>
      <h2>Audio Example</h2>
      <audio controls>
```

```
<source src="sample-audio.mp3" type="audio/mpeg">
<source src="sample-audio.ogg" type="audio/ogg">
Your browser does not support the audio element.

</audio>
</section>
```

```
<!-- Video Example -->
<section>
<h2>Video Example</h2>
<video controls width="480" height="270">
<source src="sample-video.mp4" type="video/mp4">
<source src="sample-video.webm" type="video/webm">
Your browser does not support the video element.

</video>
</section>
</body>
</html>
```