TR-102

MASTERING THE SEMANTIC WEB

DAY-3

❖ Semantic Tags in HTML

Semantic tags in HTML provide meaning to the content enclosed within them, making it clear what role the content plays in the web page. These tags not only help search engines and assistive technologies understand the structure and importance of the content but also enhance the readability and maintainability of the code.

➢ Common Semantic Tags

- **<header> tag**

Defines the header section of a document or a section, typically containing introductory content or navigational links.

Example:

```
<header>
  <h1>My Website</h1>
  <nav>
    <ul>
      <li><a href="#home">Home</a></li>
      <li><a href="#about">About</a></li>
      <li><a href="#contact">Contact</a></li>
    </ul>
  </nav>
</header>
```

- **<main> tag**

Represents the main content of the document, where the central content resides.

Example:

```
<main>

  <h2>Main Content</h2>

  <p>This is the main content of the page.</p>

</main>
```

- **<section> tag**

  Defines a section in a document, used for grouping related content.

Example:

```
<section>
  <h2>About Us</h2>
  <p>Information about our company</p>
</section>
```

- **<footer> tag**

  Defines the footer for a document or section, typically containing metadata or links to related content.

Example:

```
<footer>
  <p>&copy; 2024 My Website</p>
  <nav>
    <ul>
      <li><a href="#privacy">Privacy Policy</a></li>
      <li><a href="#terms">Terms of Service</a></li>
    </ul>
  </nav>
</footer>
```

- **<figure> and <figcaption> tag**

  The <figure> tag specifies content, such as images, illustrations, diagrams, or code snippets, while <figcaption> provides a caption for that content.

Example:

```
<figure>
   <img src="image.jpg" alt="Description of image">
   <figcaption>Caption for the image</figcaption>
</figure>
```

➢ Benefits of Semantic Tags

- **Improved Accessibility**: Assistive technologies can better navigate and interpret the content, providing a better experience for users with disabilities.
- **SEO Optimization**: Search engines can more accurately understand the structure and content of the page, potentially improving search rankings.
- **Code Readability**: Semantic tags make the HTML code more understandable and maintainable for developers.

❖ Navigation bar in HTML

➢ What is a navigation bar?

- A navigation bar (or navbar) in HTML is a section of a website that contains links to other parts of the site or different web pages.
- It serves as a guide for users, allowing them to navigate through the website easily.
- The navigation bar is typically placed at the top or side of a web page and can be styled in various ways using CSS to enhance the user experience.

➢ Basic Syntax

```
<nav>
   <ul>
      <li><a href="#home">Home</a></li>
      <li><a href="#about">About</a></li>
      <li><a href="#services">Services</a></li>
      <li><a href="#contact">Contact</a></li>
   </ul>
</nav>
```

❖ :hover in CSS

- The :hover pseudo-class in CSS is used to apply styles to an element when the user hovers over it with a mouse or other pointing device.
- This can be used to create interactive and visually engaging effects, such as changing colors, showing additional information, or modifying the element's appearance.

➢ Basic Syntax

The syntax for the :hover pseudo-class is straightforward:

```
selector:hover {
  /* CSS properties */
}
```

➢ Example Usage

- **Button hover effect**

```
<style>
    .button {
      background-color: #4CAF50;
      border: none;
      color: white;
      padding: 15px 32px;
      text-align: center;
      text-decoration: none;
      display: inline-block;
      font-size: 16px;
      margin: 4px 2px;
      cursor: pointer;
      transition: background-color 0.3s;
    }
    .button:hover {
      background-color: #45a049;
```

```
}
</style>
```

❖ Margin and Padding in CSS

➢ What is Margin?

- Margin is the space outside the border of an element. It creates space between the element and its surrounding elements.
- Margins can be used to position elements and create breathing room on a webpage.

➢ Margin Properties

- **margin-top:** Sets the top margin of an element.
- **margin-right:** Sets the right margin of an element.
- **margin-bottom:** Sets the bottom margin of an element.
- **margin-left:** Sets the left margin of an element.

➢ Shorthand Property

You can set all four margins at once using the shorthand property.

margin: top right bottom left;

➢ What is Padding?

- Padding is the space inside the border of an element, between the content and the border.
- Padding increases the size of the element's box and creates space between the content and the border.

➢ Padding Properties

- **padding-top:** Sets the top padding of an element.
- **padding-right:** Sets the right padding of an element.
- **padding-bottom:** Sets the bottom padding of an element.
- **padding-left:** Sets the left padding of an element.

➢ Shorthand Property

You can set all four padding values at once using the shorthand property.

padding: top right bottom left;

❖ Fluid Layout in CSS

- The fluid concept in CSS, also known as fluid design or liquid layout, involves creating a web page layout that adjusts and adapts to different screen sizes and resolutions.

This approach ensures that a website is flexible and user-friendly across various devices, from desktops to smartphones.

➢ Key elements of fluid design

- **Percentage-Based Widths:** Using percentage units instead of fixed pixel units for widths allows elements to resize based on the parent container or viewport size.
- **Relative Units**: Utilizing relative units like em, rem, and vw/vh (viewport width/height) helps maintain proportions and scalability.
- **Flexible Images**: Images that resize within their containing elements ensure that visual content scales appropriately with the layout.
- **Media Queries**: CSS media queries allow for the application of different styles based on the device's characteristics, such as width, height, or orientation.