Unit 1: Introduction to HTML

Block and Inline Elements

In HTML, elements can be classified into two main categories based on their display behavior: block-level elements and inline elements. Block-level elements typically start on a new line and take up the full width of their parent container. They can contain other block-level elements, as well as inline elements. Examples of block-level elements include , <p>, <h1>, <ul>, and <li>. Here is an example of a block-level element:

```
<div>
 <h1>This is a block-level element</h1>
 <p>It starts on a new line and takes up the full width of its parent container.
</p>
</div>
```

Inline elements, on the other hand, are contained within block-level elements and do not start on a new line. They only take up as much width as necessary to display their content. Examples of inline elements include , <a>, , and

Inline-block elements

These elements behave like inline elements in that they do not start on a new line, but they can be styled with width and height properties like block-level elements. Examples of inline-block elements include <input> and <button>. Understanding the display behavior of different HTML elements is important for creating well-structured and properly styled web pages. Here is an example of an inline element:

```
<p>This is a block-level element that contains an <strong>inline element</strong>.</p>
```

Presentation and Phrase Elements

In HTML, elements can be categorized into two main types based on their function and purpose: presentation elements and phrase elements. Presentation elements are used to define the structure and layout of a web page. They are used to group content together and apply styles such as colors, fonts, and spacing. Examples of presentation elements include , <section>, <nav>, <header>, and <footer>. Here is an example of a presentation element:

```
<div class="container">
 <header>
 <h1>My Web Page</h1>
 <nav>
 <ul>
 <li><a href="#">Home</a></li>
<li><a href="#">About</a></li>
 <li><a href="#">Contact</a></li>
 </ul>
 </nav>
 </header>
```

```
<section>
<h2>Welcome to my web page!</h2>
<p>This is some content that describes what my web page is all about.</p>
</section>
<footer>
<p>&copy; 2023 My Web Page</p>
</footer>
</div>
```

Phrase elements, on the other hand, are used to define specific phrases or pieces of content within a web page. They are used to add meaning and structure to the content of the page. Examples of phrase elements include , <a>, , , and . Here is an example of a phrase element:

```
<p>This is a paragraph that contains a <strong>strong</strong> phrase and an
<a href="#">anchor</a> phrase.</p>
```

Empty and Non-empty Elements

In HTML, elements can be categorized into two main types based on their content: empty elements and non-empty elements.

Empty elements, as the name suggests, do not have any content or text between their opening and closing tags. They are used to represent standalone content or to add attributes that modify the behavior or appearance of other elements. Examples of empty elements include
, <img>, <input>, and <meta>. Here is an example of an empty element: This is some text.
 This text will appear on a new line.

Non-empty elements, on the other hand, have content or text between their opening and closing tags. They are used to represent text, images, links, and other types of content on a web page. Examples of non-empty elements include , <h1>, <a>, <img>, and . Here is an example of a non-empty element: <h1>Welcome to my web page!</h1>

HTML character entities

HTML, character entities are used to represent special characters and symbols that cannot be entered directly using the keyboard or that may have a special meaning in HTML syntax. Character entities are represented by a special code or sequence of characters that the browser interprets as the intended character. Here are some common HTML character entities:

  - Non-breaking space

< - Less than symbol (<)

> - Greater than symbol (>)

& - Ampersand symbol (&)

" - Double quote symbol (")

' - Single quote symbol (')

© - Copyright symbol (©)

® - Registered trademark symbol (®)

€ - Euro currency symbol (€)

— - Em dash symbol (—)

To use a character entity in HTML, simply enter the code or sequence of characters in place of the special character or symbol. For example, to display a copyright symbol in HTML, you would use the © character entity: © 2023 My Company. All rights reserved. . This would display the copyright symbol (©) on the web page. Using character entities in HTML is important to ensure that special characters and symbols are displayed correctly and to avoid any issues with HTML syntax or formatting.

HTML List, Table, Links

List

HTML provides three types of lists to structure information on a web page: ordered lists, unordered lists, and definition lists.

a. Ordered Lists:

Ordered lists are used to present a list of items in a specific order, such as steps in a recipe or a set of instructions. Each item in the list is numbered sequentially. In HTML, ordered lists are created using the <ol> element and each item in the list is enclosed within an <li> element. Here is an example of an ordered list in HTML:

```
<ol>
<li>Preheat the oven to 350°F.</li>
<li>Grease a 9x13-inch baking pan.</li>
<li>In a mixing bowl, combine the flour, sugar, and baking powder.</li>
<li>Add the milk, oil, egg, and vanilla extract, and mix until well combined.</li>
<li>Pour the batter into the prepared pan and bake for 30-35 minutes, or until a toothpick
inserted into the center comes out clean.</li>
</ol>
```

b. Unordered Lists:

Unordered lists are used to present a list of items in no specific order, such as a list of groceries or a list of tasks to do. Each item in the list is typically marked with a bullet or a similar symbol. In HTML, unordered lists are created using the <ul> element and each item in the list is enclosed within an <li> element. Here is an example of an unordered list in HTML:

```
<ul>
<li>Milk</li>
<li>Eggs</li>
<li>Bread</li>
<li>Butter</li>
<li>Cheese</li>
</ul>
```

Here are examples of each type of unordered list in HTML:

i. Bullet List:

Bullet lists are the default type of unordered list in HTML, and each item is marked with a small black circle.

ii. Circle List:

Circle lists use a larger circle instead of a bullet to mark each item.

iii. Square List:

Square lists use a square instead of a bullet to mark each item.

iv. Definition Lists:

Definition lists are used to present a list of terms and their definitions, such as a glossary of terms or a list of abbreviations. In HTML, definition lists are created using the <dl> element, and each term is enclosed within a <dt> element and each definition is enclosed within a <dd> element. Here is an example of a definition list in HTML:

```
<dl>
 <dt>HTML</dt>
 <dd>Hypertext Markup Language -
the standard markup language used to
create web pages.</dd>
 <dt>CSS</dt>
 <dd>Cascading Style Sheets - a style
sheet language used for describing the
presentation of a document written in
HTML or XML.</dd>
 <dt>JavaScript</dt>
 <dd>A programming language used
to create interactive effects within web
browsers.</dd>
</dl>.
```

Table

In HTML, tables are used to display data in rows and columns. Tables are useful for presenting data in a structured format and can be used for a variety of purposes, such as displaying product information, financial data, or schedules. Here is an example of a simple table in HTML

```
<table>
 <thead>
 <tr>
 <th>Product Name</th>
 <th>Price</th>
```

```
 <tr>
<th>Stock</th>
 </tr>
 </thead>
 <tbody>
 <tr>
 <td>Widget</td>
 <td>$10.00</td>
 <td>50</td>
 </tr>
<tr>
 <td>Gadget</td>
 <td>$25.00</td>
 <td>25</td>
 </tr>
```

Links

In HTML, links are used to connect one web page to another. Links can be used to navigate within the same website or to connect to external websites. Links are created using the <a> element in HTML, and they can be customized with additional attributes and styles.

a. Internal Links:

Internal links are used to connect to another page within the same website. To create an internal link, you need to specify the URL of the page you want to link to, which is usually a relative URL. Here is an example of an internal link in HTML:
About Us. In this example, clicking on the link will take the user to the "about.html" page within the same website.

b. External Links:

External links are used to connect to a page on a different website. To create an external link, you need to specify the full URL of the page you want to link to, which includes the protocol (such as http:// or https://) and the domain name. Here is an example of an external link in HTML: Visit Example.com. In this example, clicking on the link will take the user to the "https://www.example.com" website.

1.7 Multimedia Contents (Image, Audio, Video and YouTube Player)

Multimedia content such as images, audio, and video can enhance the user experience and make web pages more engaging and interactive. In HTML, multimedia content can be added to a web page using different elements and attributes.

a. Images:

Images can be added to a web page using the <img> element. The src attribute is used to specify the URL of the image, and the alt attribute is used to provide a description of the image for users who cannot see the image. Here is an example of an image in HTML: <img src="image.jpg" alt="A beautiful landscape">

b. Audio:

Audio can be added to a web page using the <audio> element. The src attribute is used to specify the URL of the audio file, and the <source> element can be used to provide multiple sources for the audio file in different formats. Here is an example of audio in HTML: <audio controls>

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

<source src="audio.ogg" type="audio/ogg">

Your browser does not support the audio element.

</audio>.

c. Video:

Video can be added to a web page using the <video> element. The src attribute is used to specify the URL of the video file, and the <source> element can be used to provide multiple sources for the video file in different formats. The controls attribute adds a set of controls to the video player, such as play, pause, and volume. Here is an example of video in HTML: <video controls width="640" height="360">

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

<source src="video.ogg" type="video/ogg">

Your browser does not support the video element.

</video>.

To embed a YouTube video player in a web page, you can use the YouTube embedded player code provided by YouTube. Here are the steps to add a YouTube video player to your web page:

b. Go to the YouTube video you want to embed.

c. Click on the Share button below the video.

d. Click on the Embed button.

e. Copy the embed code provided by YouTube.

f. The embed code will look something like this:

Form Elements

In HTML, the <form> element is used to create a form on a web page that allows users to submit data to a server. Forms are commonly used for a variety of purposes, such as login forms, contact forms, registration forms, and search forms. Sure, here are examples of HTML form input types:

a. Text Input:

A text input is used for single-line input of text. Here is an example:

<label for="username">Username:</label>

<input type="text" id="username"

name="username">.

b. Password Input:

A password input is similar to a text input, but the characters are not displayed on the screen. Here is an example:

```
 <label for="password">Password:</label>

<input type="password" id="password"  name="password">
```

c. File Input:

A file input allows users to select and upload files from their device. Here is an example:

```
<label for="file">Select a file:</label>

<input type="file" id="file" name="file">.
```

d. Radio Buttons:

Radio buttons are used when the user needs to select one option from a group of options. Here is an example:

```
<label for="option1">Option 1:</label>

<input type="radio" id="option1" name="option"

 value="1">

<label for="option2">Option 2:</label>

<input type="radio" id="option2" name="option"

value="2">.
```

e. Checkboxes:

Checkboxes are used when the user needs to select one or more options from a group of options. Here is an example:

```
<label for="option1">Option 1:</label>

<input type="checkbox" id="option1" name="option1" value="1">

<label for="option2">Option 2:</label>

<input type="checkbox" id="option2" name="option2" value="2">.
```

f. Textarea:

Textarea is used for multi-line input of text. Here is an example:

```
<label for="message">Message:</label>

<textarea id="message" name="message"></textarea>.
```

g. Hidden Input:

A hidden input is used to store data that the user does not need to see or modify. Here is an example:

```
 <label for="country">Country:</label>

<select id="country" name="country">

 <option value="us">United States</option>

 <option value="ca">Canada</option>

 <option value="mx">Mexico</option>
```

</select>.

i. Button:

A button is used to trigger an action on the web page, such as submitting a form or navigating to another page. Here is an example:

<button type="submit">Submit</button>.

j. Date Input:

A date input allows the user to select a date from a calendar. Here is an example:
<label for="birthdate">Birthdate:</label>

<input type="date" id="birthdate" name="birthdate">
k. Email Input:

An email input allows the user to enter an email address. Here is an example: <label for="email">Email:</label>

<input type="email" id="email" name="email">.

l. Color Input:

A color input allows the user to select a color using a color picker. Here is an example:

<label for="color">Color:</label>

<input type="color" id="color" name="color" value="#ff0000">.

m. Time Input:

A time input allows the user to select a time using a time picker. Here is an example:

<label for="time">Time:</label>

<input type="time" id="time" name="time" value="12:00">

n. Number Input:

A number input allows the user to enter a number. Here is an example:

<label for="quantity">Quantity:</label>

<input type="number" id="quantity" name="quantity" min="1" max="10" value="1">

o. Search Input:

A search input allows the user to search for a keyword. Here is an example:

<label for="search">Search:</label>

<input type="search" id="search" name="search">

p. Tel Input:

A tel input allows the user to enter a telephone number. Here is an example:

<label for="phone">Phone:</label>

<input type="tel" id="phone" name="phone">.