CRAFT knowledge

HTML Fundamental

What is HTML?

- HTML stands for Hyper Text Markup Language
- HTML is the standard markup language for creating Web pages
- HTML describes the structure of a Web page

A Simple HTML Document

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

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>

<body>

</body>

</html>
```

The <!DOCTYPE html> declaration defines that this document is an HTML5 document. declaration represents the document type, and helps browsers to display web pages correctly. It must only appear once, at the top of the page (before any HTML tags).

The <html> element is the root element of an HTML page

The <head> element contains meta information about the HTML page

The <title> element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)

The <body> element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.

The <h1> element defines a large heading

The <p> element defines a paragraph

Metadata

additional important information about a document in a variety of ways.

The META elements can be used to include name/value pairs describing properties of the HTML document, such as author, expiry date, a list of keywords, document author etc.

The **<meta>** tag is used to provide such additional information. This tag is an empty element and so does not have a closing tag but it carries information within its attributes.

You can include one or more meta tags in your document based on what information you want to keep in your document but in general,

meta tags do not impact physical appearance of the document so from appearance point of view, it does not matter if you include them or not.

HTML Elements

An HTML element is defined by a start tag, some content, and an end tag.

<tagname>Content goes here...</tagname>

<h1> </h1>

<img> </img>

<a>

HTML Attributes

All HTML elements can have **attributes**

Attributes provide **additional information** about elements

Attributes are always specified in **the start tag**

Attributes usually come in name/value pairs like: **name="value"**

The width and height Attributes

The <img> tag should also contain the width and height attributes, which specify the width and height of the image (in pixels):

```
<img src="img_girl.jpg" width="500" height="600">
```

The style Attribute

The style attribute is used to add styles to an element, such as color, font, size, and more.

Example

```
<p style="color:red;">This is a red paragraph.</p>
```

```
<p style="color:red;">This is a red paragraph.</p>
```

HTML Class Attribute

The HTML class attribute is used to specify a single or multiple class names for an HTML element. The class name can be used by CSS and JavaScript to do some tasks for HTML elements.

You can use this class in CSS with a specific class, write a period (.) character, followed by the name of the class for selecting elements.

```
<h1 class="headings">This is first heading</h1>
```

HTML Id Attribute

The **id attribute** is used to specify the unique ID for an element of the HTML document. It allocates the unique identifier which is used by the **CSS** and the **JavaScript** for performing certain tasks.

we can easily select an element with the specific id by using the # symbol followed by id.

Note: JavaScript can access an element with the given ID by using the getElementById() method.

HTML Anchor Element

The **HTML anchor tag** defines *a hyperlink that links one page to another page*. It can create hyperlink to other web page as well as files, location, or any URL. The "href" attribute is the most important attribute of the HTML a tag. and which links to destination page or URL.

The href attribute is used to define the address of the file to be linked.

 Link Text

HTML Image

HTML img tag is used to display image on the web page.

HTML img tag is an empty tag that contains attributes only, closing tags are not used in HTML image element.

```
<img src="good_morning.jpg" alt="Good Morning Friends"/>
```

HTML Table

HTML table tag is used to display data in tabular form (row * column). There can be many columns in a row.

```
    <table>
        <tr><th>First_Name</th><th>Last_Name</th><th>Marks</th></tr>
        <tr><td>Sonoo</td><td>Jaiswal</td><td>60</td></tr>
        <tr><td>James</td><td>William</td><td>80</td></tr>
        <tr><td>Swati</td><td>Sironi</td><td>82</td></tr>
        <tr><td>Chetna</td><td>Singh</td><td>72</td></tr>
       </table>
```

<table> It defines a table.

<tr> It defines a row in a table

<th> It defines a header cell in a table.

<td> It defines a cell in a table.

Html block and Inline element

Every HTML element has a default display value, depending on what type of element it is.

Block-level Elements

A block-level element always starts on a new line, and the browsers automatically add some space (a margin) before and after the element.

A block-level element always takes up the full width available (stretches out to the left and right as far as it can).

Two commonly used block elements are: <p> and .

ere are two display values: block and inline.

Inline Elements

An inline element does not start on a new line.

An inline element only takes up as much width as necessary.

This is a element inside a paragraph.

Note: An inline element cannot contain a block-level element!

HTML Lists

HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists:

1. Ordered List or Numbered List (ol)
2. Unordered List or Bulleted List (ul)

HTML Ordered List or Numbered List

In the ordered HTML lists, all the list items are marked with numbers by default. It is known as numbered list also. The ordered list starts with <ol> tag and the list items start with <li> tag.

```
    <ol>
        <li>Aries</li>
        <li>Bingo</li>
        <li>Leo</li>
```

```
            <li>Oracle</li>
        </ol>
```

HTML Unordered List or Bulleted List

In HTML Unordered list, all the list items are marked with bullets. It is also known as bulleted list also. The Unordered list starts with <ul> tag and list items start with the <li> tag.

```
      <ul>
            <li>Aries</li>
            <li>Bingo</li>
            <li>Leo</li>
            <li>Oracle</li>
        </ul>
```

HTML Iframes

An inline frame is used to embed another document within the current HTML document.

Syntax

The HTML <iframe> tag specifies an inline frame.

Iframe - Set Height and Width

Use the height and width attributes to specify the size of the iframe.

The height and width are specified in pixels by default:

Example

```
<iframe src="demo_iframe.htm" height="200" width="300"
        title="Iframe Example">
    </iframe>
```

The HTML <iframe> tag specifies an inline frame

The src attribute defines the URL of the page to embed

Always include a title attribute (for screen readers)

The height and width attributes specify the size of the iframe

HTML Div Tag

The **HTML tag** is used *to group the large section of HTML elements together*.

the tag is just like a container unit which is used to encapsulate other page elements and divides the HTML documents into sections.

The div tag is generally used by web developers to group HTML elements together and apply CSS styles to many elements at once.

HTML tag

HTML tag is used as a generic container of inline elements. It is used for styling purpose to the grouped inline elements (using class and id attribute or inline style).

The tag can be useful for the following task:

- To change the language of a part of the text.
- To change the color, font, background of a part of text using CSS
- To apply the scripts to the particular part of the text.

HTML Layouts

HTML layouts provide a way to arrange web pages in well-mannered, well-structured, and in responsive form or we can say that HTML layout specifies a way in which the web pages can be arranged. Web-page layout works with arrangement of visual elements of an HTML document.

Every website has a specific layout to display content in a specific manner.

Following are different HTML5 elements which are used to define the different parts of a webpage.

- <header>: It is used to define a header for a document or a section.
- <nav>: It is used to define a container for navigation links
- <section>: It is used to define a section in a document

- <article>: It is used to define an independent self-contained article
- <aside>: It is used to define content aside from the content (like a sidebar)
- <footer>: It is used to define a footer for a document or a section

HTML <header>

The <header> element is used to create header section of web pages. The header contains the introductory content, heading element, logo or icon for the webpage, and authorship information.

```
<header style="background-color: #303030;  height: 80px; width: 100%">
    <h1 style="font-size: 30px; color: white;text-align: center; padding top: 15px;">Welcome to MyFirstWebpage</h1>
        </header>
```

HTML <nav>

The <nav> elements is a container for the main block of navigation links. It can contain links for the same page or for other pages.

HTML <section>

HTML <section> elements represent a separate section of a web page which contains related element grouped together. It can contain: text, images, tables, videos, etc.

HTML <article>

The HTML <article> tag is used to contain a self-contained article such as big story, huge article, etc.

Example:

```
  <article style="width: 100%; border:2px solid black; background-color: #fff0f5;">
        <h2>History of Computer</h2>
        <p>Write your content here for the history of computer</p>
```

```
    </article>
```

HTML <aside>

HTML <aside> define aside content related to primary content. The <aside> content must be related to the primary content. It can function as side bar for the main content of web page.

Example:

```
  <aside style="background-color:#e6e6fa">
        <h2>Sidebar information</h2>
        <p>This conatins information which will represent like a side bar for a
webpage</p>
    </aside>
```

HTML <footer>

HTML <footer> element defines the footer for that document or web page. It mostly contains information about author, copyright, other links, etc.

Example:

```
<footer style="background-color: #f0f8ff; width: 100%; text-align: center;">
           <h3>Footer Example</h3>
           <p>© Copyright 2018-2020. </p>
  </footer>
```

HTML Forms

An HTML form is used to collect user input. The user input is most often sent to a server for processing.

The <form> Element

The HTML <form> element is used to create an HTML form for user input:

<form>
.
form elements
.
</form>

The <form> element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

The <input> Element

The HTML <input> element is the most used form element.

An <input> element can be displayed in many ways, depending on the type attribute.

Here are the different input types you can use in HTML:

```
<input type="text">
<input type="number">
<input type="email">
<input type="password">
<input type="file">
<input type="checkbox">
<input type="radio">
<input type="button">
```

The <label> Element

The <label> element defines a label for several form elements.

The <label> element is useful for screen-reader users, because the screen-reader will read out loud the label when the user focus on the input element.

The <label> element also help users who have difficulty clicking on very small regions (such as radio buttons or checkboxes) - because when the user clicks the text within the <label> element, it toggles the radio button/checkbox.

The for attribute of the <label> tag should be equal to the id attribute of the <input> element to bind them together.

The <select> Element

The <select> element defines a drop-down list:

Example

```
<label for="cars">Choose a car:</label>
    <select id="cars" name="cars">
      <option value="volvo">Volvo</option>
      <option value="saab">Saab</option>
      <option value="fiat">Fiat</option>
      <option value="audi">Audi</option>
    </select>
```

The <option> elements defines an option that can be selected.

By default, the first item in the drop-down list is selected.

To define a pre-selected option, add the selected attribute to the option:

The <textarea> Element

The <textarea> element defines a multi-line input field (a text area):

Example

```
    <textarea name="message" rows="10" cols="30">
        The cat was playing in the garden.
    </textarea>
```

The rows attribute specifies the visible number of lines in a text area.

The cols attribute specifies the visible width of a text area.

The <button> Element

The <button> element defines a clickable button:

Example

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

The <fieldset> and <legend> Elements

The <fieldset> element is used to group related data in a form.

The <legend> element defines a caption for the <fieldset> element.

Example

```
<form action="/action_page.php">
          <fieldset>
              <legend>Personalia:</legend>
              <label for="fname">First name:</label><br>
              <input type="text" id="fname" name="fname" value="John"><br>
              <label for="lname">Last name:</label><br>
              <input type="text" id="lname" name="lname" value="Doe"><br><br>
              <input type="submit" value="Submit">
          </fieldset>
      </form>
```

Radio Button Control

The radio button is used to select one option from multiple options. It is used for selection of gender, quiz questions etc.

If you use one name for all the radio buttons, only one radio button can be selected at a time.

Using radio buttons for multiple options, you can only choose a single option at a time.

```
<form>
          <label for="gender">Gender: </label>
          <input type="radio" id="gender" name="gender" value="male" />Male
          <input type="radio" id="gender" name="gender" value="female" />Female
<br/>
      </form>
```

Checkbox Control

The checkbox control is used to check multiple options from given checkboxes.

```
<form>
    Hobby:<br>
    <input type="checkbox" id="cricket" name="cricket" value="cricket" />
    <label for="cricket">Cricket</label> <br>
    <input type="checkbox" id="football" name="football" value="football" />
    <label for="football">Football</label> <br>
    <input type="checkbox" id="hockey" name="hockey" value="hockey" />
    <label for="hockey">Hockey</label>
</form>
```

HTML Input Attributes

1. The value Attribute

The input value attribute specifies an initial value for an input field:

2. The disabled Attribute

The input disabled attribute specifies that an input field should be disabled.

3. The size Attribute

The input size attribute specifies the visible width, in characters, of an input field.

The default value for size is 20.

> **Note:** The size attribute works with the following input types: text, search, tel, url, email, and password.

4. The maxlength Attribute

The input maxlength attribute specifies the maximum number of characters allowed in an input field.

Note: When a maxlength is set, the input field will not accept more than the specified number of characters. However, this attribute does not provide any feedback. So, if you want to alert the user, you must write JavaScript code.

5. The min and max Attributes

The input min and max attributes specify the minimum and maximum values for an input field.

The min and max attributes work with the following input types: number, range, date, datetime-local, month, time and week.

Tip: Use the max and min attributes together to create a range of legal values.

6. The multiple Attribute

The input multiple attribute specifies that the user is allowed to enter more than one value in an input field.

The multiple attribute works with the following input types: email, and file.

7. The placeholder Attribute

The input placeholder attribute specifies a short hint that describes the expected value of an input field (a sample value or a short description of the expected format).

The short hint is displayed in the input field before the user enters a value.

The placeholder attribute works with the following input types: text, search, url, tel, email, and password.

8. The required Attribute

The input required attribute specifies that an input field must be filled out before submitting the form.

The required attribute works with the following input types: text, search, url, tel, email, password, date pickers, number, checkbox, radio, and file.

9. The height and width Attributes

The input height and width attributes specify the height and width of an <input type="image"> element.