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Page No. 1

Assignment No. 1

Assignment Topic: HTML attributes & CSS preview

1. Explain HTML attributes & CSS previews?

A. HTML attributes are special words used within the opening tag of an HTML element. They provide additional information about HTML elements. HTML attributes are used to configure and adjust the element's behavior, appearance, or functionality in a variety of ways. Each attribute has a name and a value, formatted as `name="value"`. Attributes tell the browser how to render the element or how it should behave during user interactions.

Syntax:-

~~<tagname attribute-name="attribute-value"> content</tagname>~~

This HTML code demonstrates the use of the `src` attribute within the `` tag to display an image.

~~<!DOCTYPE html>~~

~~<html>~~

~~<head> <title> HTML img. src attribute </title>~~

~~</head>~~

~~<body>~~

~~~~

~~</body>~~

~~</html>~~

Components of Attribute :-

An HTML attribute consists of two primary components:

1. attribute-name: This is the name of the attribute,

Specifies what kind of additional information or property you are defining for the element. Common attribute names include href, src, class, id, etc.

2. attribute-value: The value is assigned to the attribute to define the specific setting or behaviour. It is always placed in quotes.

### CSS Preview:-

Webflow's style panel gives you a visual interface to design with the same CSS properties used across the web. With CSS preview, you can watch the code write itself as you make style changes on your site.

You can open CSS preview via the top bar of the 'Designer' by clicking the Webflow logo and choosing 'CSS preview' from the hamburger menu that appears on hover.

Online CSS editor allows you to edit CSS file at once with dynamic preview. The preview will show the exact line you're editing, and it will update as you type. If you want to show the entire file then move focus to the start or the end of the CSS text. When you have finished editing your CSS, be sure to validate the code with CSS validators.

| CSS Code                                          | Preview |
|---------------------------------------------------|---------|
| <pre>• red {     border: 1px solid black; }</pre> | Black   |
| <pre>• blue {     border: 2px solid blue; }</pre> | blue    |

Assignment No. 2

Assignment Topic: Dif between old HTML &amp; HTML 5

2. Explain the difference between old HTML & HTML 5?

A) HTML stands for Hyper Text Markup Language. It is used to design web pages using a markup language. HTML is a combination of Hypertext and Markup language. Hypertext defines the link between two web pages. A markup language is used to define the text document within the tag which defines the structure of web pages. This language is used to annotate text so that a machine can understand it and manipulate text accordingly.

Features of HTML:-

- It allows the creation of hyperlinks with the `<a>` tag, connecting different web pages.
- uses tags to mark elements and content, such as headings (`<h1>` to `<h6>`).
- It supports embedding images (`<img>`), videos and audio for multimedia content.
- It provides form elements like `<form>`, `<input>`, and `<button>` for user input and data submission.
- Semantic tags like `<article>`, `<section>`, and `<nav>` for better document structure and accessibility.

HTML 5 :-

It is the fifth and current version of HTML. It has improved the markup available for documents and has introduced application programming interface and

Document object model. It has introduced various new features like drag and drop, geo-location services, features of HTML5:-

- Introduced new semantic elements like `<header>`, `<footer>`, `<section>`, and `<article>` for improved structure.
- Enhances multimedia capabilities with native support for audio and video elements.
- Provides the local storage API, allowing web application to store data locally on the user's device.
- Enables websites to access a user's geographical location.
- uses SQL database to store data offline.

| HTML                                                                       | HTML 5                                                                                                               |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| It didn't support audio and video without the use of flash player support. | It supports audio and video controls with the use of <code>&lt;audio&gt;</code> and <code>&lt;video&gt;</code> tags. |
| It uses cookies to store temporary data.                                   | It uses SQL databases and application cache to store offline data.                                                   |
| Does not allow javascript to run in the browser.                           | Allows javascript to run in the background. This is possible due to JS web worker API in html5                       |

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vector graphics are possible in HTML with the help of various technologies such as VML, silver-light, flash, etc.

It does not allow drag and drop effects

Not possible to draw shapes like. circle, rectangle, triangle etc..

It works with all old browsers.

~~<HTML>, <Body>, and <Head> tags are mandatory while writing a HTML code.~~

vector graphics are additionally an integral part of HTML 5 like SVG and canvas.

It allows drag and drop effects.

HTML 5 allows to draw shapes like circle, rectangle etc..

It supported by all new browsers like firefox, mozilla, chrome, safari etc..

These tags can be omitted while writing HTML code.

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Assignment Topic : HTML coding conventions &amp; BR, WBR elements

3. Explain HTML coding conventions, BR & WBR elements?

A) HTML coding conventions:

web developers are often uncertain about the coding technique and syntax to use in HTML as HTML version changed from HTML to XHTML and finally HTML5. Although, HTML5 is far more flexible but sloppy in terms of code validation, the code itself is easier to understand. Since it supports bad coding, it is always a smart move to write HTML codes close to XHTML so that you do not need to rewrite the entire code in case new browsers or the newer version of the existing ones stopped supporting bad Coding standards. Here are few HTML coding conventions.

1. Always keep your code clean and well-formed with proper indentation

2. Always declare the document type as the first line in your document

3. use lowercase for element names.

4. Close all HTML elements even the empty tags like `<br/>`, `<br/>`, `<img/>`

5. use lowercase for attribute names

6. Always enclose attribute values with quotes.

7. Always add alt attribute to images.

8. Avoid long code lines

9. Do not add blank lines without a reason.

10. make the `<title>` element as meaningful as possible.

## br and wbr elements:-

br:- The `<br>` tag in HTML is used to create a line break in the text, causing the content that follows it to appear on a new line. It is a self-closing tag.

```
<!DOCTYPE html>
```

```
<html>
```

```
<body> <p> Dear Reader, <br> This is printed after a line  
break </p> </body>.
```

```
</html>
```

wbr:- The `<wbr>` tag in HTML stands for word break opportunity and it is used to define the position within the text which is treated as a line break by the browser. It is mostly used when the word is too long and there are chances that the browser may break lines at the wrong place for fitting the text. It also doesn't require closing tag.

### Example :-

```
<!DOCTYPE html>
```

```
<head>
```

```
<body> <h1> BCA HUB <h1>
```

```
  <h2> &lt;wbr&gt; tag </h2>
```

```
<p> BCA welcome to BCA HUB <wbr> BCA means  
Bachelor of computer Applications. </p>
```

```
</body>
```

```
</html>
```

Assignment No.: 4

Assignment Topic: Span element &amp; web page character references.

4. Explain span element & web page with character references

#### A. Span Element:-

The HTML `<span>` tag is an inline container that is used to group and apply styles or scripts to specific parts of text or elements within a document.

While it doesn't affect the layout or appearance on its own, it serves as a target for CSS styling and JavaScript interactions, making it ideal for customizing small portions of content without disrupting the flow of surrounding elements.

#### Syntax

```
<span> class = " " > some text </span>
```

#### Web page with character Reference :-

A web page with character references uses codes to represent characters that can't be typed directly into HTML. These codes are also known as character entities or entity codes.

Why use character references?

- To represent characters that are reserved in HTML, such as `<and>`
- To represent invisible characters, such as non-breaking spaces.

- To represent characters that are hard to type on a standard keyboard, such as © Examples of character references.
- To display a less than symbol, use the character reference, &lt; instead of the symbol itself
- To force the browser not to break up space-separated words when wrapping content, use the non-breaking space character entity reference, &nbsp;
- To display a double quotation mark, use the character entity reference, &quot;

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Assignment No. : 5

Assignment Topic : CSS & its types

Q. Explain CSS ? Explain its types ?

A. CSS overview :-

CSS is a language designed to simplify the process of making web pages presentable.

- It allows you to apply styles to HTML documents by prescribing colors, fonts, spacing, and positioning.
- The main advantages are the separation of content and styling, and the same CSS rules can be used across all pages and not have to be rewritten.
- HTML uses tags and CSS uses rule sets.
- CSS styles are applied to the HTML element using selectors.

CSS syntax :-

CSS consists of style rules that are interpreted by the browser and applied to the corresponding elements. A style rule set includes a selector and a declaration block.

- Selector : Target specific HTML elements to apply styles
- Declaration : Combination of a property and its corresponding value.

Example

P {

color: blue;

text-align: center; }

css declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces. In this example, all paragraph element will be centre-aligned, with a blue text color.

### Types of CSS :-

Cascading style sheets is used to style and layout of web pages, and controlling the appearance of HTML elements. CSS targets HTML elements and applies style rules to dictate their appearance.

Below are ten types of CSS :

#### 1. Inline CSS :-

Inline CSS involves applying styles directly to individual HTML elements using the style attribute. This method allows for specific styling of elements within the HTML document, overriding any external or internal styles.

```
<p style = "color : #009900;  
font-size : 50px;  
font-style : italic;  
text-align : center;">
```

Inline CSS

</p>

#### 2. Internal or Embedded CSS :-

Internal or Embedded CSS is defined within the HTML documents <style> element. It applies style to specified HTML elements. The CSS rule set should be within the HTML file in the head section i.e. the CSS is embedded within the <style> tag

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inside the head section of the HTML file:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      main {
        text-align: center;
        .GFG {
          color: #009900;
          font-size: 50px;
          font-weight: bold;
        }
        .geeks {
          font-style: bold;
          font-size: 20px;
        }
      }
    </style>
  </head>
  <body>
    <div class="main">
      <div class="GFG">Internal CSS </div>
      <div class="geeks">
        Implementation of internal css </div>
      </div> </body>
    </html>
```

### 3. External CSS:-

External CSS contains separate CSS files that contain only style properties with the help of tag attribute. CSS property is written in a separate file with a

- .css extension and should be linked to the HTML document using a link tag. It means that, for each element, style can be set only once. and will be applied across web pages.

HTML CSS

body {

background-color: powderblue;

• main { text-align: center; }

GFG {

color: # 009900;

Font-size: 50px;

Font-weight: bold;

}

# geekrs {

Font-style: bold;

font-size: 20px;

}

Assignment No. 6

Assignment Topic: Text &amp; border properties &amp; HSL and HSLA values.

Q. Explain the text properties & border properties, HSL & HSLA values for color?

A. CSS Text formatting allows you to control the visual presentation of text on a webpage. From changing fonts to adjusting spacing and alignment, CSS provides powerful properties to enhance the readability and aesthetic of text.

- CSS lets you adjust font properties, text-alignment, spacing, and decorations.
- It helps in creating visually appealing text and improving the user experience.
- Various text-related properties can be combined to achieve unique text styles and layouts.

- `<html>`

- `<head>`

- `<style>`

- `initials {`

- `font-size: 40px;`

- `font-weight: bold;`

- `color: #4CAF50;`

- `text-transform: uppercase;`

- `font-family: Arial, sans-serif;`

- `}`

- `</style>`

- `</head>`

- <body>
- <p class="initials">A·B.</p>
- </body>
- </html>

In this example

- Font size: The text size is set to 10px, making it large and prominent.
- Font weight: The text is bold, making it stand out more.
- Color: The text color is set to a green shade, giving it a fresh look.
- Text transform: The text is converted to uppercase, so the letters appear in capital letters.
- Font family: The text uses Arial, which is a sans-serif font, for a clean, modern appearance.
- CSS text formatting properties
- These are the following text formatting properties.

| Property              | Description                                                                 |
|-----------------------|-----------------------------------------------------------------------------|
| text-color            | set the color of the text using color name, hex value, or RGB value.        |
| text-align            | specifies horizontal alignment of text in a block or table-cell element.    |
| text-align-last       | sets alignment of last lines occurring in an element.                       |
| text-decoration       | Decorates text content.                                                     |
| text-decoration-color | sets color of text decorations like Overline, underline, and line-throughs. |

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### Border properties:-

Border in CSS are used to create a visible outline around an element. They can be customized in terms of

- width : The thickness of the border.
- style : The appearance of the border.
- color : The color of the border.

### CSS Border property

|       |            |            |              |           |
|-------|------------|------------|--------------|-----------|
| Solid | Dashed Red | 1rem solid | thick double | 4mm Ridge |
|-------|------------|------------|--------------|-----------|

This is box

border: 3px solid;

COPY

Solid : A continuous line with solid borders.

#### Syntax:-

element {

border: 1px solid black; }

#### Example

<html>

<head>

<style>

\* simple-border {

```
border: 2px solid black;
padding: 20px;
text-align: center;
?
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div class="simple-border"> This div has a simple black border. </div>
```

```
</body>
```

```
</html>
```

property

border-style

Description

Determines the type of border.

border-width

Sets the width of the border.

border-color

Specifies the border color.

border-radius

Creates rounded corners for elements.

HSL and HSLA Values for color:-

HSL stands for hue, saturation, and lightness.

HSLA color values are an extension of HSL with an Alpha channel.

HSL color values:-

In HTML, a color can be specified using hue, saturation, and lightness in the form:

hsl(hue, saturation, lightness)

Hue is a degree on the color wheel from 0 to 360, 0 is red, 120 is green, and 240 is blue.

Saturation is a percentage value. 0% means a shade of gray, and 100% is the full color.

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Lightness is also a percentage. Value - 0% is black, and 100% is white.

Experiment by mixing the HSL values below:

$hsl(0, 100\%, 50\%)$

HSLA color values:-

HSLA color values are an extension of HSL color values, with an alpha channel which specifies the opacity for a color. An HSLA color value is specified with:

$hsla(\text{hue}, \text{saturation}, \text{lightness}, \text{alpha})$

The alpha parameter is a number between 0.0 and 1.0

Experiment by mixing the HSLA values below:

<!DOCTYPE html>

<html>

<body>

<h1 style="background-color: hsl(0, 100%, 50%);> hsl(0, 100%, 50%)</h1>

<h1 style="background-color: hsl(0, 80%, 50%);> hsl(0, 80%, 50%)</h1>

<h1 style="background-color: hsl(0, 60%, 50%);> hsl(0, 60%, 50%)</h1>

<h1 style="background-color: hsl(0, 40%, 50%);> hsl(0, 40%, 50%)</h1>

<h1 style="background-color: hsl(0, 20%, 50%);>

`hsl(0, 20%, 50%) </h1>`

`<h1 style="background-color: hsl(0, 0%, 50%);">`

`hsl(0, 0%, 50%) </h1>`

`<p> with HSL colors, less saturation mean less color.  
0% completely gray. </p>`

`</body>`

`</html>`

Assignment No. 7

Assignment Topic: CSS Inheritance.

Q. Explain the CSS inheritance?

A. CSS Inheritance :-

CSS inheritance is when a CSS property value flows down from a parent element to one or more of its child elements. That should sound familiar. It parallels the inheritance of genetic characteristics from a biological parent to a child. Some CSS properties are inheritable, and some are not. To determine whether a particular CSS property is inheritable, go to Mozilla's list of CSS keywords at <https://developer.mozilla.org/en-US/docs/Web/CSS/Reference> and click on the property you're interested in. Here are the ones that are inheritable:

\* Color

\* font (and all of its more granular properties, like  
font-size)

\* line-height

\* list-style

\* text-align

\* text-transform

To explain CSS inheritance, we'll refer once again to the Mozilla's list web page. Specifically, we'll refer to this aside element:

```
aside {
```

```
border: thin dashed red;
```

```

color: red;
background-color: white;
float: right;
width: 200px;
padding: 10px;
margin: 5px;
}

```

In this rule, the only inheritable CSS property is color. If you specify papaya whip for a body element's color, all the elements inside the body container would inherit that color. That would cause that browser to use that color when displaying all the text within this web page. So for the manager's list web page, the red color gets inherited by the h3 element that is a child of the aside element. Inheritance is blocked for an inheritance property when an element explicitly specifies a new value for that property. In other words, if a parent element and its child element have two different CSS rules with the same property specified, then the child element's property-value pair gets applied to the child element. Formally, we say that the child element's property-value pair overrides the inherited property-value pair. So, for the manager's list web page, if color: blue; was specified for the h3 element inside the aside element, then the browser would display blue text for the h3 element.

Assignment No. 8

Assignment Topic: svg image elements.

8. How to implement SVG image elements with in a web page?

A. SVG is the most popular type of vector graphics format, and that's the format we'll focus on. SVG stands for Scalable Vector Graphics. SVG files use a filename extension of .svg, but after compression, the resulting compressed file has an extension of .svgz.

As mentioned, one of the primary benefits of the SVG format over bitmap image formats is that there's no degradation when an SVG file is resized. To see what we're talking about,

- study FIGURE. The two pictures at the top show that what happens when a PNG file and an SVG file.

In addition to enabling accurate resizing, the SVG format provides several other benefits over the bitmap image format. SVG files tend to be smaller, and that leads to faster web page downloads. An SVG file's formulas are built with SVG code, and as with HTML code, you can use JavaScript to dynamically manipulate any of the elements in the SVG file's code. You'll learn how to use "JavaScript" to manipulate the elements in an HTML page.

At that point, you'll be ready to learn on your own how to use JavaScript to manipulate SVG files as well. With the ability to manipulate such files, you will then be able to animate your SVG images.

Unfortunately, the SVG format is not perfect. It does not lend itself well to accurately displaying most photographs. Most photographs have lots of different colors and lines, and it's difficult for formulas to describe all of that complexity. The SVG format is not supported by older browsers, but this is becoming a non-issue, as all current and fairly recent browsers do support the SVG format.

Another drawback is that there are relatively few pre-built SVG files to choose from.

Because it can be very difficult to find freely available SVG files that fit your needs, as a web developer, you might want to install an SVG editor tool and create your own SVG file.

### Displaying an SVG file with an img element:

There are several techniques for using SVG to display an image in a web page. If you already have an SVG file, the easiest way to display it is to use the standard

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img element with a src attribute that specifies the SVG file's name.

Displaying an SVG code fragment with an `svg` element:

If you want to use `SVG` to display an image in a web page, but you don't have an `SVG` file, you can embed `SVG` code within `an svg element`. Figure shows a voting stickers web.

Q. Explain position on image? To cover a web page background with an image?

A. The position of an image in CSS, properties like object-position and float are used to control the placement of an image within its container using object-position property:-

The object-position property in CSS is used to set the position of an image within its container when using the object-fit property. It allows you to adjust how the image is displayed inside the box by specifying the alignment in terms of x and y co-ordinates.

Syntax:-

~~object-position: <x-position> <y-position>;~~

Property values:-

x-position: The horizontal alignment

y-position: The vertical alignment

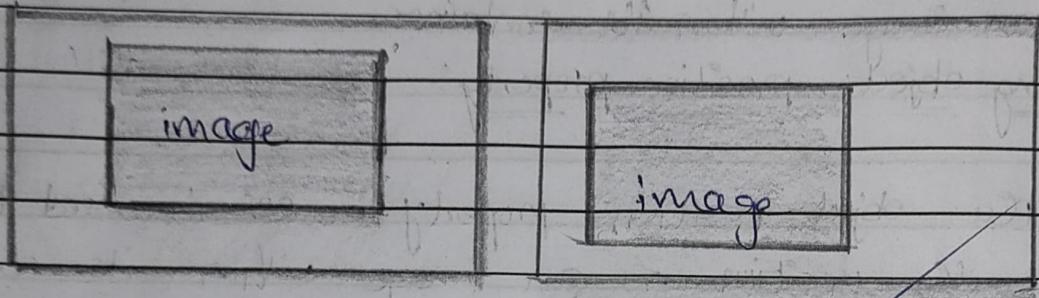
<html> ~~object-position~~ property </html>



style = "width: 50px; height: 200px;"

```
object-fit: none; object-position: center top;  
border: 2px solid black;"/>  
<img src = "any image url"  
style = "width: 500px; height: 200px;  
object-fit: none; object-position: 50px 30px;  
border: 2px solid black;"/>
```

Output:-



10. Explain button controls with an event handler & DOM?

#### A. Button controls with an event handler.

Java Script Event are actions or occurrences that happen in the browser. They can be triggered by various user interactions or by the browser itself.

<html>

<script>

```
function my func() {
```

```
document. getElementById(
```

```
"gfg"). innerHTML = "Greets for Geeks";
```

```
}
```

</script>

<body>

<button onclick = "my func()> click me </button>

< p id = "gfg"></p>

</body>

</html>

- The onclick attribute in the <button> calls the my func() function when clicked.
- The my func() function updates the <p> element with id = "gfg" by setting its innerHTML to "Greets for Geeks".
- Initially, the <p> is empty, and its content changes dynamically on button click.

Event types :-

Java script support a variety of event types.  
Common categories include:

• Mouse Events:

click, dblclick, mousemove, mouseover,  
mouseout

• Keyboard Events:-

keydown, keypress, keyup

• Form Events:

submit, change, focus, blur

• Window Events:

load, resize, scroll

Common java script Events.Event attributeDescription

onclick

Triggered when an element is clicked.

onmouseover

Fired when the mouse pointer moves over an element

on

onmouseout

occurs when the mouse pointer leaves an element.

onkeydown

Fired when a key is pressed down

onkeyup

fired when a key is released

onchange

Triggered when the value of an input element changes.

onload

Occurs when a page has finished loading.

onsubmit

Fired when a form is submitted.

onfocus

Occurs when an element gets focus.

onblur

Fired when an element loses focus.

### DOM (Document Object Model):-

The HTML DOM is a programming interface that represents the structure of a web page in a way that programming languages like JavaScript can understand and manipulate.

The DOM, or Document Object Model, is a programming interface for web documents. It represents the structure of a document as a tree of objects, where each object corresponds to a part of the document, such as element, attributes, and text. The DOM provides a way for programs to manipulate the structure, style, and content of web documents dynamically.

## Key points about the DOM:-

### • Tree Structure:

The DOM represent an HTML or XML document as a tree structure, with each node in the tree corresponding to an object in the document.

### • Object:

Each element, attribute, and piece of text in the document is represented by a specific object in the DOM. These objects can be manipulated using programming languages like JavaScript.

### • Dynamic Interaction:-

The DOM enables dynamic interactions with web pages; JavaScript can be used to access, modify, and update the content and structure of a document in real time, allowing for interactive and responsive user interface.

### • Platform-Neutral:

The DOM is platform-neutral, meaning that it provides a standardized way to access and manipulate document content regardless of the underlying operating system or browser.

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- Event Handling :-

~~The DOM allows the registration of event handlers, enabling developers to respond to user actions and update the document accordingly.~~

