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Year 11

WEB AUTHORIZING

WEB AUTHORIZING: Web authoring is the practice of creating web documents using modern web authoring software and tools.

WEBSITE: A website is a collection of individual but related webpages that are usually stored together and hosted by a web server. These can be programmed or created using different languages including HTML, Sun Microsystems Java and Microsoft ASP. Webpages can include different objects such as text, images (including moving images) and sound. We are going to develop our webpages in HTML.

What is HTML?

HTML is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

A Simple HTML Document

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

Example Explained

- The `<!DOCTYPE html>` declaration defines this document to be HTML5
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the document
- The `<title>` element specifies a title for the document
- The `<body>` element contains the visible page content
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

HTML Tags

HTML tags are element names surrounded by angle brackets:

`<tagname>content goes here...</tagname>`

- HTML tags normally come **in pairs** like `<p>` and `</p>`
- The first tag in a pair is the **start tag**, the second tag is the **end tag**
- The end tag is written like the start tag, but with a **forward slash** inserted before the tag name

Tip: The start tag is also called the **opening tag**, and the end tag the **closing tag**.

HTML Page Structure

Below is a visualization of an HTML page structure:

```
<html>
<head>
<title>Page title</title>
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
</body>
</html>
```

Note: Only the content inside the `<body>` section (the white area above) is displayed in a browser.

The `<!DOCTYPE>` Declaration

The `<!DOCTYPE>` 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 `<!DOCTYPE>` declaration is not case sensitive.

How to Write HTML Codes Using Notepad

Web pages can be created and modified by using professional HTML editors.

However, for learning HTML we recommend a simple text editor like Notepad (PC) or TextEdit (Mac).

We believe using a simple text editor is a good way to learn HTML.

Follow the steps below to create your first web page with Notepad or TextEdit.

Step 1: Open Notepad (PC)

Windows 8 or later:

Open the **Start Screen** (the window symbol at the bottom left on your screen). Type **Notepad**.

Windows 7 or earlier:

Open **Start > Programs > Accessories > Notepad**

Step 2: Save the HTML Page

Save the file on your computer. Select **File > Save as** in the Notepad menu.

Name the file "**index.htm**" and set the encoding to **UTF-8** (which is the preferred encoding for HTML files).

Step 3: View the HTML Page in Your Browser

Open the saved HTML file in your favorite browser (double click on the file, or right-click - and choose "Open with").

HTML Basic Examples

HTML Documents

All HTML documents must start with a document type declaration: `<!DOCTYPE html>`.

The HTML document itself begins with `<html>` and ends with `</html>`.

The visible part of the HTML document is between `<body>` and `</body>`.

Example

```
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

HTML Headings

HTML headings are defined with the `<h1>` to `<h6>` tags.

`<h1>` defines the most important heading. `<h6>` defines the least important heading:

Example

```
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
```

HTML Paragraphs

HTML paragraphs are defined with the `<p>` tag:

Example

```
<p>This is a paragraph.</p>
```

HTML Links

HTML links are defined with the `<a>` tag:

Example

```
<a href="https://www.thamesvalleycollege.org">This is a link</a>
```

The link's destination is specified in the `href` attribute.

Attributes are used to provide additional information about HTML elements.

HTML Images

HTML images are defined with the `` tag.

The source file (`src`), alternative text (`alt`), `width`, and `height` are provided as attributes:

Example

```

```

HTML Buttons

HTML buttons are defined with the `<button>` tag:

Example

```
<button>Click me</button>
```

HTML Lists

HTML lists are defined with the `` (unordered/bullet list) or the `` (ordered/numbered list) tag, followed by `` tags (list items):

Example

```
<ul>
  <li>Coffee</li>
  <li>Tea</li>
</ul>
```

HTML Line Breaks

The HTML `
` element defines a **line break**. You use `
` if you want a line break (a new line) without starting a new paragraph. The `
` tag is an empty tag, which means that it has no end tag.

Example

```
<p>This is<br>a paragraph<br>with line breaks.</p>
```

HTML Styles

The HTML Style Attribute

Setting the style of an HTML element, can be done with the `style` attribute. The HTML `style` attribute has the following **syntax**:

```
<tagname style="property: value;">
```

The **property** is a CSS property. The **value** is a CSS value

HTML Background Color

The `background-color` property defines the background color for an HTML element.

This example sets the background color for a page to powderblue:

Example

```
<body style="background-color: powderblue;">
```

```
<h1>This is a heading</h1>
```

```
</body>
```

HTML Text Color

The `color` property defines the text color for an HTML element:

Example

```
<h1 style="color: blue;">This is a heading</h1>
```

HTML Fonts

The `font-family` property defines the font to be used for an HTML element:

Example

```
<h1 style="font-family: verdana;">This is a heading</h1>
```

HTML Text Size

The `font-size` property defines the text size for an HTML element:

Example

```
<h1 style="font-size:300%;">This is a heading</h1>
```

HTML Text Alignment

The `text-align` property defines the horizontal text alignment for an HTML element:

Example

```
<h1 style="text-align:center;">Centered Heading</h1>
```

HTML Text Formatting

HTML Formatting Elements

HTML also defines special **elements** for defining text with a special **meaning**.

HTML uses elements like `` and `<i>` for formatting output, like **bold** or *italic* text.

Formatting elements were designed to display special types of text:

- `` - Bold text
- `` - Important text
- `<i>` - Italic text
- `` - Emphasized text
- `<mark>` - Marked text
- `<small>` - Small text
- `` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text

HTML `` and `` Elements

The HTML `` element defines **bold** text, without any extra importance.

Example

```
<b>This text is bold</b>
```

The HTML `` element defines **strong** text, with added semantic "strong" importance.

Example

```
<strong>This text is strong</strong>
```

HTML `<i>` and `` Elements

The HTML `<i>` element defines *italic* text, without any extra importance.

Example

```
<i>This text is italic</i>
```

The HTML `` element defines *emphasized* text, with added semantic importance.

Example

```
<em>This text is emphasized</em>
```

Note: Browsers display `` as ``, and `` as `<i>`. However, there is a difference in the meaning of these tags: `` and `<i>` defines bold and italic text, but `` and `` means that the text is "important".

HTML Colors

HTML colors are specified using predefined color names, or RGB, HEX, HSL, RGBA, HSLA values.

Color Names

In HTML, a color can be specified by using a color name:

For example: Tomato, Orange, DodgerBlue, MediumSeaGreen, Gray, SlateBlue, Violet, LightGray

HTML supports 140 standard color names.

Background Color

You can set the background color for HTML elements:

Hello World

Example

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
```

Text Color

You can set the color of text:

Example

```
<h1 style="color:Tomato;">Hello World</h1>
```

Border Color

You can set the color of border

Example

```
<h1 style="border:2px solid Tomato;">Hello World</h1>
```

Color Values

In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values:

RGB Value

In HTML, a color can be specified as an RGB value, using this formula: **rgb(*red, green, blue*)**

Each parameter (red, green, and blue) defines the intensity of the color between 0 and 255.

HEX Value

In HTML, a color can be specified using a hexadecimal value in the form:

#rrggbb

Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

HSL Value

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

Hsl (*hue, saturation, lightness*)

HSLA Value

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 (*hue, saturation, lightness, alpha*)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

Example

Hsla (9, 100%, 64%, 0)

Styling HTML with CSS

CSS stands for **C**ascading **S**tyle **S**heets.

CSS describes **how HTML elements are to be displayed on screen, paper, or in other media.**

CSS **saves a lot of work.** It can control the layout of multiple web pages all at once.

CSS can be added to HTML elements in 3 ways:

- **Inline** - by using the style attribute in HTML elements

- **Internal** - by using a `<style>` element in the `<head>` section
- **External** - by using an external CSS file

The most common way to add CSS, is to keep the styles in separate CSS files. However, here we will use inline and internal styling, because this is easier to demonstrate, and easier for you to try it yourself.

Inline CSS

An inline CSS is used to apply a unique style to a single HTML element.

An inline CSS uses the style attribute of an HTML element.

This example sets the text color of the `<h1>` element to blue:

Example

```
<h1 style="color:blue;">This is a Blue Heading</h1>
```

Internal CSS

An internal CSS is used to define a style for a single HTML page.

An internal CSS is defined in the `<head>` section of an HTML page, within a `<style>` element:

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1 {color: blue;}
p {color: red;}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

External CSS

An external style sheet is used to define the style for many HTML pages.

With an external style sheet, you can change the look of an entire web site, by changing one file!

To use an external style sheet, add a link to it in the `<head>` section of the HTML page:

Example

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

```
<head>
  <link rel="stylesheet" href="styles.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

An external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a .css extension.

Here is how the "styles.css" looks:

```
body {
  background-color: powderblue;
}
h1 {
  color: blue;
}
p {
  color: red;
}
```

CSS Fonts

The CSS `color` property defines the text color to be used.

The CSS `font-family` property defines the font to be used.

The CSS `font-size` property defines the text size to be used.

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
  color: blue;
  font-family: verdana;
  font-size: 300%;
}
p {
  color: red;
  font-family: courier;
  font-size: 160%;
}
</style>
</head>
<body>
```

```
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
```

```
</body>
</html>
```

CSS Border

The CSS `border` property defines a border around an HTML element:

Example

```
p {
  border: 1px solid powderblue;
}
```

CSS Padding

The CSS `padding` property defines a padding (space) between the text and the border:

Example

```
p {
  border: 1px solid powderblue;
  padding: 30px;
}
```

CSS Margin

The CSS `margin` property defines a margin (space) outside the border:

Example

```
p {
  border: 1px solid powderblue;
  margin: 50px;
}
```

The id Attribute

To define a specific style for one special element, add an `id` attribute to the element:

```
<p id="p01">I am different</p>
```

then define a style for the element with the specific id:

Example

```
#p01 {
  color: blue;
}
```

Note: The id of an element should be unique within a page, so the id selector is used to select one unique element!

The class Attribute

To define a style for special types of elements, add a `class` attribute to the element:

`<p class="error">I am different</p>`

then define a style for the elements with the specific class:

Example

```
p.error {  
    color: red;  
}
```

External References

External style sheets can be referenced with a full URL or with a path relative to the current web page.

This example uses a full URL to link to a style sheet:

Example

```
<link rel="stylesheet" href="https://www.thamesvalleycollege.org/html/styles.css">
```

This example links to a style sheet located in the html folder on the current web site:

Example

```
<link rel="stylesheet" href="/html/styles.css">
```

This example links to a style sheet located in the same folder as the current page:

Example

```
<link rel="stylesheet" href="styles.css">
```

ANSWER THE FOLLOWING QUESTIONS BELOW

1. Explain the difference between the `` tag and `` tag.
2. Write a short note on Cascading Style Sheet (CSS).
3. Mention four types of web authoring software you know.