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Secondary Section
Stage 8 ,
Subject: ICT
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Module : Website Authoring



Course outline

- 1 Introduction to website authoring
- 2 Understanding layers of web development
- 3 Creating a web page
- 4 Adding styles to a web page
- 5 Test and publish a website
- 6 Summary

Objectives

When you have completed this module, you should be able to :

- 1 Identify and describe the three web development layers
- 2 Understand the function of the content layer to enter the content and create the structure of the web page.
- 3 Understand the function of the presentation layer to display and format element within the web page
- 4 Understand the function of the behavior layer to add scripting languages to element within the web page
- 5 Use software tools to appropriately place the content on web page.
- 6 To use a software tool to create a navigation within a web page and between web page
- 7 Know how to publish a website
- 8 Test a website.

Before you start

You should:

- Have had some experience of using web browsers to access internet
- Have some basic understanding on URL and network protocol such as HTTP.

Introduction to Website Authoring

Keywords and terminologies.

- **Website authoring** simply is concerned with studying the process of writing(creating and designing) websites of different types.
- **Websites** : defines a collections of web pages that is identified by common domain name.
- WWW short for (**World Wide Web**): defines an information system that operates over the internet. It lets documents to be connected to another documents using hyperlinks, so that the user can search for information by moving from one document to another.
- **Syntax** : defines the rule that governs the ways words or statements of programming languages should be written.
- **CSS** short for Cascading style sheet. It is a styling language that allows you to control the layout and the look of your web page.
- **HTML** short for Hyper Text Transfer Protocol. It is a code that you use to create a web pages.
- **Webpage** : defines a single page in a website.
- **Source code** : the HTML code that is written to create a webpages.

Layers of web development

Web development involves three separate layers; Content layer, presentation layer and behavior layer respectively.

1 **Content layer**

The content or structure layer is an information that people see when they look at the web page. HTML is used here to structure web pages. Content can be: text, image, pointers to navigate around the web page.

2 **Presentation layer**

This layer refers to the style of the web pages, the layouts and formatting and how it is presented to its users. CSS is used to style the web pages.

3 **behavior layer**

This layer is also called scripting layer, refers to how web elements will behave when users interact with them. We use JavaScript to program the behavior of the web pages.

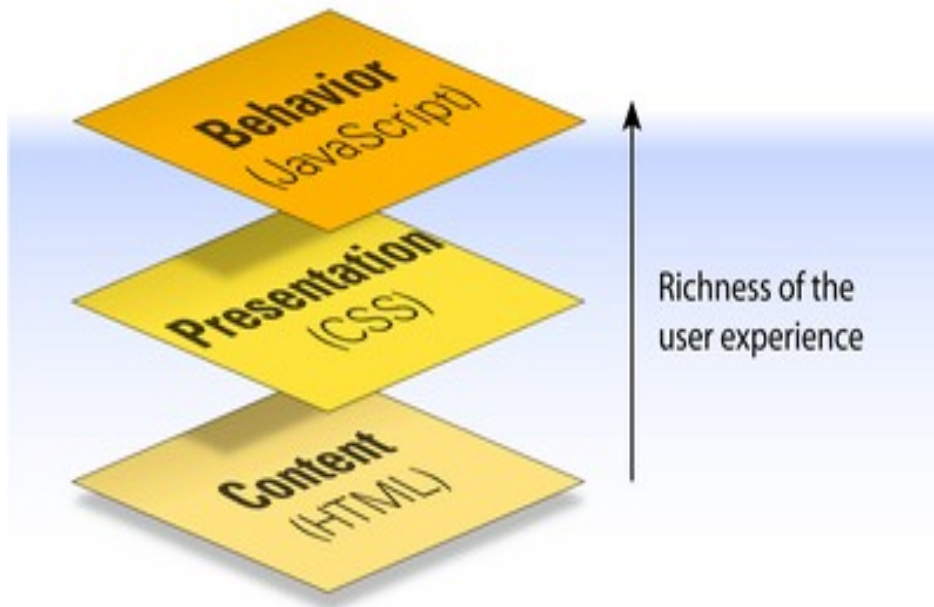


Figure 1: Web Development layers

Remark : While developing websites we start with content layer then presentation layer and finally behavior layer.

CREATING A WEB PAGE

Different ways of Creating a web page

To summarize a web page can be created in three main ways.

- 1 **Using CMS:** refers to using an online software application or a set of tools and capabilities, that allows you to create, manage and deliver content via digital channels. For example WordPress, Joomla and Drupal

Remark: By using CMS to create a website, it manages everything for you, such as design, layouts, navigation and so on.

- 2 **Using HTML:** HTML short for Hyper Text Markup Language . It defines the meaning and structure of web content.

Remark: It is a must to know HTML Tags to code each page of your website.

- 3 **Using software application programs:** refers to using an offline website development system/software that allows Web pages to be visually created like a desktop publishing program.

Remark : A Web authoring program generates the required HTML and JavaScript, and users can switch back and forth between the rendered pages and the code

Factors to consider when deciding the appropriate method to be used in creating website.

Consider these key points to select the best method:

- Your level of computer skills especially programming skills
- status of your website, whether it will be dynamic or static.
- The size of the website you need to build
- The time require to complete the development phase.

The best method to create a website is to use HTML and any other programming language such as JavaScript.

Advantage:

Because It gives you the greatest autonomy over designs and functionality you can build into your website.

Disadvantage:

This method requires you to have high degree of computer skills than if you choose CMS or web authoring package to build your website.

Creating a website with HTML

Keywords to know

Tag : is keywords which defines how web browser will format and display the content. It is usually enclosed by '<>'

HTML TAGS

An HTML tag is a tag name surrounded by < and > brackets. Here's an example:

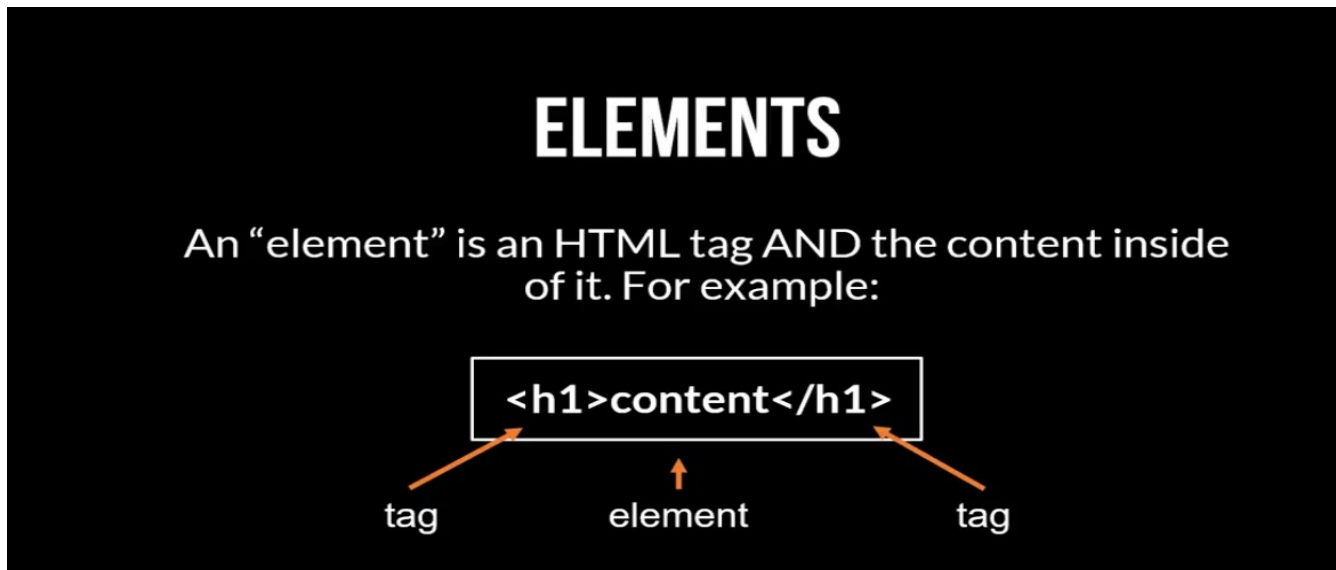
<body>

HTML TAGS

Normally, HTML tags consist of an opening tag and a closing tag, like so:

<p> and </p>

Element : An HTML element is defined by a start tag, some content, and an end tag. It is a combination of opening and closing tag.



Syntax for HTML element

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

WORKING ENVIRONMENT SETUP AND FIRST WEB PAGE

Tools required in creating web pages (websites)

- 1 **Text Editor** : defines a software application that is used in programming activities to write codes such as HTML , CSS . JavaScript, and so on. Visual studio code will be used in this course
- 2 **Browser** : a software program that helps us in accessing internet simply displaying websites(set of web pages). We will use Google chrome in this course.

Activity 1:

Create a web page entitled “firstPage.html” to display helllo world as a message.

Saving HTML document

To save a file as web page or simply html document follow these steps:

In your visual studio code:

- 1 click on file menu
- 2 click on save as
- 3 type the meaning full filename and add .html or .htm as file extension
- 4 click save.




Remark: The term **file extension** mentioned upward refers to the suffix at the end of a filename that indicates what type of file it is.

For example : .txt .html .xlsx .mp3 .mp4 .mpg

Therefore the suffix for HTML document is **.html or .htm**

ADDING TABLES HTML DOCUMENT

HTML tables allow web developers / creators to arrange data into rows and columns.



Create Tables in HTML

Columnu 1	Columnu 2	Columnu 3
Row 1 Cell 1	Row 1 Cell 2	Row 1 Cell 3
	Row 2 Cell 2	Row 2 Cell 3
Row 3 Cell 1		

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Figure 2: html tables

Creating tables in HTML

Table should be placed between body element, in order to be displayed

1. **<table> </table>** : Table element is used to set to create a table
2. **<tr></tr>** : Table row (tr) is used to create a row in created table
3. **<th></th>** : Table heading (th) is used to create a heading in table
4. **<td></td>**: Table data (td) is used to create a table data

Remark : border attribute should be used to add borders to your table.

```
<!DOCTYPE html>
<html lang="en">
<head>
|   <title>My table </title>
</head>
<body>
|   <table>
|   |   <tr>
|   |   |   <th>Company</th>
|   |   |   <th>Contact</th>
|   |   |   <th>Country</th>
|   |   </tr>
|   |   <tr>
|   |   |   <td>Alfreds Futterkiste</td>
|   |   |   <td>Maria Anders</td>
|   |   |   <td>Germany</td>
|   |   </tr>
|   |   <tr>
|   |   |   <td>Centro comercial Moctezuma</td>
|   |   |   <td>Francisco Chang</td>
|   |   |   <td>Mexico</td>
|   |   </tr>
|   </table>
</body>
</html>
```

HTML table attribute

An attribute in HTML it is an additional information about HTML elements.

For-example : setting table borders to 5. <table **border**='5'></table>. Border on this table tag is called an attribute.

ADDING IMAGES, SOUND , VIDEOS IN HTML DOCUMENT IN HTML

Adding image

**** defines a tag which is used to add image to your web page

src : defines an attribute which specifies where your image is stored it is short for source.

Alt : short for alternative, it is used to display an alternative message in case the web page fails to display an image

width: it is used to specify the width of image

height: it is an attribute which is used to specify the height on an image.

Adding Sound

<audio> : tag which is used to add audio file to the web page.

<audio control>

<source src="songs.mpeg-4" type="audio/mpeg">

</audio>

Adding Video

```
<video width="320" height="240" controls>  
  <source src="movie.mp4" type="video/mp4">  
</video>
```

Remark: controls is an attribute which is used to add play button and functionalities that can be added to audio or video player.

USING STYLE SHEET

3 Methods of adding styles:

- 1 **Inline styling:** Applies unique styles to single HTML document, using style attribute
For-example : `<h1 style=" color: pink"> this is a pink heading </h1>`
- 2 **Embedded stylesheet(internal stylesheets):** All css styles should be placed in the head of html document, in between `<style>` `</style>` tags
For-example : `<style> h1{color: pink} </styles>`
- 3 **External stylesheets:** separate file linked to an HTML web page that contain all css styles.

Remark : Css file must be created by using .css as a File extension.

For-example : mystyles.css

`<link>` tag should be used to add external CSS file to your website.

`<link rel="stylesheet" type="text/css" href="mystyles.css">`

Remark: It should be placed in a heading section.

CREATING CSS CODE

CSS is linked to the presentation layer in web development.

CSS rule set consists of selector and declaration :

```
h1 { color: blue; font-size: 12px; }
```

h1: **selector**

color,font-size: **property**

blue, 12px: **value**

Remark :

1. everything inside {} is a declaration
2. Selector : Term that tell the browser which HTML elements should be selected to have the CSS property values inside the rule applied to them

Using ID and Class attribute when styling

We use:

ID attribute when we need to style only one element. Applying unique styles to one element.

For-example : `<h1 id="myHeading"></h1>` :

myHeading is an elements id which will be used as selector when styling this heading element.

Class attribute when we need to add styles to elements that are grouped together. A group of elements to which styles can be applied.

For-example : `<div class="mysection">`

```
<p> computer</p>
<h2> laptop</h2>
<h1> tablet</h1>
</div>
```

mysection is a class name referring to the group of 3 elements grouped together and ready to share same styles , paragraph, h2 and h1 respectively.

Paths

A path is a unique location of a file on your computer or server.



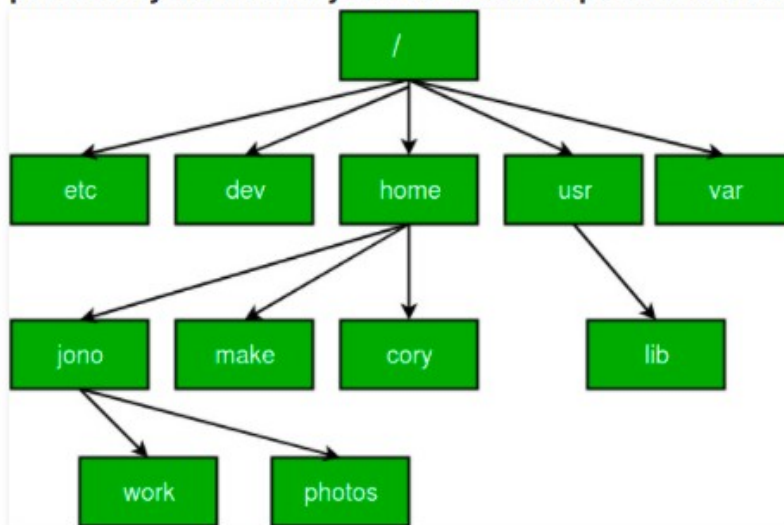
Figure 3: path example

2 types of path :

Relative path: a path that is related to the current directory (folder).

Relative path is defined as the path related to the present working directory (pwd). It starts at your current directory and **never starts with a /**.

To be more specific let's take a look on the below figure in which if we are looking for photos then absolute path for it will be provided as `/home/jono/photos` but assuming that we are already present in jono directory then the relative path for the same can be written as simple `photos`.



Absolute path : a path that is related to the root directory(folder). Webpath is an example of absolute path.



Test and publish a website

Testing a your website is the last stage before making your website go live. The following are required when publishing a website.

- 1 **Domain name** : A domain name refers to your website address. This is what users type in a browser's search bar to directly access your website. A domain name is unique and cannot be shared between different sites.
- 2 **Server (hosting space)** : Web hosting definition. When a hosting provider allocates space on a web server for a website to store its file
- 3 **Ftp clients:** A File Transfer Protocol client (FTP client) is a software utility that establishes a connection between a host computer and a remote server ,FTP Client encapsulates all the functionality necessary to store and retrieve files from an FTP server

CREATING A TEST PLAN FOR A WEBSITE.

Any test plan should test the following 3 aspects :

- 1 **Functionality :** Does the websites work as you wanted it to work ? ,
Do all the links , hyperlink and anchor works ? , can you look at every
page, document or file that you have included?
- 2 **Usability:** Does the index page or homepage load first when you open
a website?, can you get all the other pages in the site from every
page ? , can you get back from every page without using the browser's
back button?
- 3 **Effectiveness :** Does the site present all the relevant information in the
best format, how quickly do the multimedia objects load?