WEBSITE DESIGN 1B

TUTOR

EMMANUEL NTIAMOAH

FREELANCE WEBSITE DEVELOPER

Next Lecture: Course Structure

COURSE STRUCTURE

ASSIGNMENT

QUIZZES

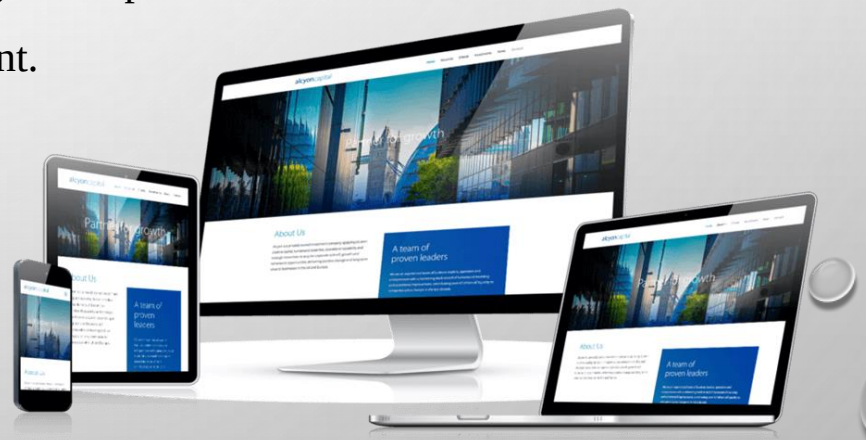
PROJECT WORK

Next Lecture: Introduction to Website Design

INTRODUCTION TO WEBSITE DESIGN

Web design encompasses many different skills and disciplines in the production and maintenance of websites. The different areas of web design include web graphic design, interface design, user experience design, and search engine optimization.

Often many individuals will work in teams covering different aspects of the design process, although some designers will cover them all. The term "web design" is normally used to describe the design process relating to the front-end (client side) design of a website including writing markup. Web design partially overlaps web engineering in the broader scope of web development.



LANGUAGES TO BE USED

PROGRAMMING LANGUAGES

1. HTML5
2. CSS3
3. JAVASCRIPT

Next Lecture: HTML Basics

HTML BASICS

- HTML stands for Hypertext Markup language. HTML is the basic building block of world wide web.
- Hypertext is text displayed on a computer or other electronic device with references to other text that the user can immediately access, usually by a mouse click or key press.
- Apart from text, hypertext may contain tables, lists, forms, images, and other presentational elements. It is an easy-to-use and flexible format to share information over the internet.
- Markup languages use sets of markup tags to characterize text elements within a document, which gives instructions to the web browsers on how the document should appear.

WHAT YOU CAN DO WITH HTML

- You can publish documents online with text, images, lists, tables, etc.
- You can access web resources such as images, videos or other html document via hyperlinks.
- You can create forms to collect user inputs like name, e-mail address, comments, etc.
- You can include images, videos, sound clips, flash movies, applications and other html documents directly inside an html document.
- You can create offline version of your website that work without internet.
- You can find the current location of your website's visitor.

Note: HTML As Described Earlier Is A Markup Language Not A Programming Language, Like Java, Ruby, PHP, Etc. You Need A Web Browser To View The HTML Pages. The Web Browsers Do Not Display The HTML Tags, But Uses The Tags To Interpret The Content Of The Web Pages.

Next Lecture: Development Environment

Development Environment

SET-UP Development Environment

Software installation

- Text editor (Bracket)
- Web Browser (Chrome or Monzilla)

Next Lecture: Creating HTML

CREATING HTML

- **Creating Your First HTML Document**

Step 1: Create a folder(name the folder coding).

Step 2: Right click on the coding folder and select “open with bracket project from the menu”.

Step 3: Create a new file and save it as “index.html”

Step 4: Type some HTML code

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>A simple HTML document</title>
</head>
<body>
<p>Hello World!<p>
</body>
</html>
```

Step 5: Click on the live preview to see your new website.

Next Lecture: HTML Tags & Elements

HTML TAGS AND ELEMENTS

HTML is written in the form of HTML elements consisting of markup tags.

These markup tags are the fundamental characteristic of HTML.

Every markup tag is composed of a keyword, surrounded by angle brackets, such as <html>, <head>, <body>, <title>, , and so on.

HTML tags normally come in pairs like <html> and </html>.

The first tag in a pair is often called the opening tag (or start tag), and the second tag is called the closing tag (or end tag).

An opening tag and a closing tag are identical, except a slash (/) after the opening angle bracket of the closing tag,

to tell the browser that the command has been completed.

In between the start and end tags you can place appropriate contents.

For example, a paragraph, which is represented by the p element, would be written as:

This is a paragraph.

HTML ELEMENTS

- An HTML element is an individual component of an HTML document. It represents semantics of the webpage structure.

For example, the title element represents the title of the document.

Most HTML elements are written with a *start tag* (or opening tag) and an *end tag* (or closing tag), with content in between.

Elements can also contain attributes that defines its additional properties.

For example, a paragraph, which is represented by the p element, would be written as:

Note: All elements don't require the end tag or closing tag to be present. These are referred as *empty elements*, *self-closing elements* or *void elements*.

HTML TAGS VS ELEMENTS

- Technically, an HTML element is the collection of start tag, its attributes, an end tag and everything in between. On the other hand an HTML tag (either opening or closing) is used to mark the start or end of an element, as you can see in the above illustration.
- However, in common usage the terms html element and html tag are interchangeable. For simplicity's sake of this website, the terms "tag" and "element" are used to mean the same thing

EMPTY HTML ELEMENTS

Empty elements (also called self-closing or void elements) are not container tags — that means,

you can not write <hr>*some content*</hr> or
some content</br>.

A typical example of an empty element, is the
 element, which represents a line break.

Some other common empty elements are <img>, <input>, <link>, <meta>, <hr>, etc.

```
<p>This paragraph contains <br> a line break.</p>

<img src="images/sky.jpg" alt="Cloudy Sky">

<input type="text" name="username">
```

NESTING HTML ELEMENTS

Most HTML elements can contain any number of further elements (except empty elements)

which are in turn made up of tags, attributes, and content or other elements.

The following example shows some elements nested inside the <p> element.

```
<p>Here is some <b>bold</b> text.</p>
<p>Here is some <em>emphasized</em> text.</p>
<p>Here is some <mark>highlighted</mark> text.</p>
```

HTML tags should be nested in correct order. They must be closed in the inverse order of how they are defined,

that means the last tag opened must be closed first

```
<p><strong>These tags are nested properly.</strong></p>
```

Not

```
<p><strong>These tags are not nested properly.</p></strong>
```

WRITING COMMENTS IN HTML

Comments are usually added with the purpose of making the source code easier to understand.

It may help other developer (or you in the future when you edit the source code) to

understand what you were trying to do with the HTML.

Comments are not displayed in the browser.

An HTML comment begins with <!--, and ends with -->, as shown in the example below:

```
<!-- This is an HTML comment -->

<!-- This is a multi-line HTML comment that spans across more than one line -->

<p>This is a normal piece of text.</p>
```

Next Lecture: HTML Attributes

HTML ATTRIBUTES

What are Attributes

Attributes define additional characteristics or properties of the element such as width and height of an image.

Attributes are always specified in the start tag (or opening tag) and usually consists of name/value pairs like name="value".

Attribute values should always be enclosed in quotation marks.

Also, some attributes are required for certain elements.

For instance, an <img> tag must contain a src and alt attributes.

Let's take a look at some examples of the attributes usages:

<img src="images/smiley.png" width="30" height="30" alt="smiley">

google

<input type="text" value="john doe">

GENERAL PURPOSE ATTRIBUTES

There are some attributes, such as id, title, class, style, etc. that you can use on the majority of HTML elements.

The id Attribute

The id attribute is used to give a unique name or identifier to an element within a document. This makes it easier to select the element using CSS or JavaScript.

```
<input type="text" id="firstName"> <div id="container">Some content</div> <p id="infoText">This is a paragraph.</p>
```

The class Attribute

Like id attribute, the class attribute is also used to identify elements. But unlike id, the class attribute does not have to be unique in the document. This means you can apply the same class to multiple elements in a document, as shown in the following example:

```
<input type="text" class="highlight"> <div class="box highlight">Some content</div>
<p class="highlight">This is a paragraph.</p>
```

The style Attribute

The style attribute allows you to specify CSS styling rules such as color, font, border, etc. directly within the element.

```
<p style="color: blue;">This is a paragraph.</p> <img src="images/sky.jpg" style="width: 300px;" alt="Cloudy Sky">
<div style="border: 1px solid red;">Some content</div>
```

Next Lecture: Headings

HTML HEADINGS

Organizing Content with Headings

Headings help in defining the hierarchy and the structure of the web page content.

HTML offers six levels of heading tags, <h1> through <h6>; the higher the heading level number,

the greater its importance — therefore <h1> tag defines the most important heading,

whereas the <h6> tag defines the least important heading in the document.

By default, browsers display headings in larger and bolder font than normal text.

Also, <h1> headings are displayed in largest font, whereas <h6> headings are displayed in smallest font.

```
<h1>Heading level 1</h1>
<h2>Heading level 2</h2>
<h3>Heading level 3</h3>
<h4>Heading level 4</h4>
<h5>Heading level 5</h5>
<h6>Heading level 6</h6>
```

IMPORTANCE OF HEADINGS

- HTML headings provide valuable information by highlighting important topics and the structure of the document,

  so optimize them carefully to improve user engagement.

- Don't use headings to make your text look BIG or bold.

  Use them only for highlighting the heading of your document and to show the document structure.

- Since search engines, such as Google, use headings to index the structure and content of the web pages so use them very wisely in your webpage.

- Use the <h1> headings as main headings of your web page, followed by the <h2> headings, then the less important <h3> headings, and so on.

Tip: Use the <h1> tag to mark the most important heading which is usually at the top of the page.

An HTML document generally should have exactly one <h1> heading, followed by the lower-level headings such as <h2>, <h3>, <h4>, and so on.

Next Lecture: Paragraphs

HTML PARAGRAPHS

Creating Paragraphs

Paragraph element is used to publish text on the web pages. Paragraphs are defined with the tag.

Paragraph tag is a very basic and typically the first tag you will need to publish your text on the web pages.

Here's an example:

This is a paragraph. This is another paragraph.

Note: Browsers built-in style sheets automatically create some space above and below the content of a paragraph (called margin), but you can override it using CSS.

Creating Line Breaks

The
 tag is used to insert a line break on the web page. Since the
 is an empty element, so there is no need of corresponding </br> tag.

This is a paragraph
 with line break. This is
another paragraph
 with line breaks.

Creating Horizontal Rules

You can use the <hr> tag to create horizontal rules or lines to visually separate content sections on a web page.

Like
, the <hr> tag is also an empty element. Here's an example:

This is a paragraph. <hr> This is another paragraph.

Next Lecture: Links

HTML LINKS

Creating links in HTML

- A link or hyperlink is a connection from one web resource to another. Links allow users to move seamlessly from one page to another, on any server anywhere in the world.
- A link has two ends, called anchors. The link starts at the source anchor and points to the destination anchor, which may be any web resource, for example, an image, an audio or video clip, a PDF file, an HTML document or an element within the document itself, and so on.

HTML LINK SYNTAX

Links are specified in HTML using the <a> tag.
A link or hyperlink could be a word, group of words, or image.

```
<a href="url">Link text</a>
```

Anything between the opening <a> tag and the closing tag becomes the part of the link that the user sees and clicks in a browser.
Here are some examples of the links

```
<a href="https://www.google.com/">Google Search</a>
<a href="https://www.tutorialrepublic.com/">Tutorial Republic</a>
<a href="images/kites.jpg">
   <img src="kites-thumb.jpg" alt="kites">
</a>
```

- The href attribute specifies the target of the link. Its value can be an absolute or relative URL.
- An absolute url is the url that includes every part of the url format, such as protocol,
- Host name, and path of the document, e.g., Https://www.Google.Com/,
- https://www.example.com/form.php, etc. While, relative urls are page-relative paths, e.g.,
- contact.html, images/smiley.png, and so on. A relative URL never includes the http:// or https:// prefix.

SETTING THE TARGETS FOR LINKS

The target attribute tells the browser where to open the linked document. There are four defined targets, and each target name starts with an underscore(_) character:

_blank — Opens the linked document in a new window or tab.

_parent — Opens the linked document in the parent window.

_self — Opens the linked document in the same window or tab as the source document. This is the default,

hence it is not necessary to explicitly specify this value.

_top — Opens the linked document in the full browser window.

```
<a href="/about-us.php" target="_top">About Us</a>
<a href="https://www.google.com/" target="_blank">Google</a>
<a href="images/sky.jpg" target="_parent"> <img src="sky-thumb.jpg" alt="Cloudy Sky"> </a>
```

CREATING DOWNLOAD LINKS

- You can also create the file download link in exactly the same fashion as placing text links. Just point the destination URL to the file you want to be available for download.
- In the following example we've created the download links for zip, pdf and jpg files.
- <A href="downloads/test.zip">download zip file
- download PDF file
- download image file

Note: when you click a link that points to a PDF or image file, the file is not downloaded to your hard drive directly. It will only open the file in your web browser. Further you can save or download it to your hard drive on a permanent basis.

Next Lecture: Text Formatting

HTML TEXT FORMATTING

Formatting Text with HTML

HTML provides several tags that you can use to make some text on your web pages to appear differently than normal text, for example, you can use the tag <b> to make the text bold, tag <i> to make the text italic, tag <mark> to highlight the text, tag

The following example demonstrates the most commonly used formatting tags in action.

Now, let's try this out to understand how these tags basically work:

```
<p>This is <b>bold text</b>.</p> <p>This is <strong>strongly important text</strong>.</p>
<p>This is <i>italic text</i>.</p> <p>This is <em>emphasized text</em>.</p>
<p>This is <mark>highlighted text</mark>.</p> <p>This is <code>computer code</code>.</p>
<p>This is <small>smaller text</small>.</p> <p>This is <sub>subscript</sub> and <sup>superscript</sup> text.</p>
<p>This is <del>deleted text</del>.</p> <p>This is <ins>inserted text</ins>.</p>
```

By default, the tag is typically rendered in the browser as <b>, whereas the tag is rendered as <i>.

However, there is a difference in the meaning of these tags.

Next Lecture: HTML Style

HTML STYLES

Styling HTML Elements

HTML is quite limited when it comes to the presentation of a web page. It was originally designed as a simple way of presenting information.

CSS (Cascading Style Sheets) was introduced in December 1996 by the World Wide Web Consortium (W3C) to provide a better way to style HTML elements.

With CSS, it becomes very easy to specify the things like, size and typeface for the fonts, colors for the text and backgrounds, alignment of the text and images, amount of space between the elements, border and outlines for the elements, and lots of other styling properties.

Adding Styles to HTML Elements

Style information can either be attached as a separate document or embedded in the HTML document itself.

These are the three methods of implementing styling information to an HTML document.

Inline styles — Using the style attribute in the HTML start tag.

Embedded style — Using the <style> element in the head section of the document.

External style sheet — Using the <link> element, pointing to an external CSS files.

Next Lecture: HTML Images

HTML IMAGES

Inserting Images into Web Pages

Images enhance visual appearance of the web pages by making them more interesting and colorful.

The <img> tag is used to insert images in the HTML documents. It is an empty element and contains attributes only.

The syntax of the <img> tag can be

given with: <img src="*url*" alt="*some_text*">

Each image must carry at least two attributes: the src attribute, and an alt attribute.

The src attribute tells the browser where to find the image. Its value is the URL of the image file.

Whereas, the alt attribute provides an alternative text for the image, if it is unavailable or cannot be displayed for some reason.

Its value should be a meaningful substitute for the image.

Setting the Width and Height of an Image

The width and height attributes are used to specify the width and height of an image.

The values of these attributes are interpreted in pixels by default.

```
<img src="kites.jpg" alt="Flying Kites" width="300" height="300">
<img src="sky.jpg" alt="Cloudy Sky" width="250" height="150">
<img src="balloons.jpg" alt="Balloons" width="200" height="200">
```

You can also use the style attribute to specify width and height for the images.

It prevents style sheets from changing the image size accidently, since inline style has the highest priority.

```
<img src="kites.jpg" alt="Flying Kites" style="width: 300px; height: 300px;">
<img src="sky.jpg" alt="Cloudy Sky" style="width: 250px; height: 150px;">
<img src="balloons.jpg" alt="Balloons" style="width: 200px; height: 200px;">
```

Note: It's a good practice to specify both the width and height attributes for an image,

so that browser can allocate that much of space for the image before it is downloaded.

Otherwise, image loading may cause distortion or flicker in your website layout.

Next Lecture: HTML Tables

HTML TABLES

Creating Tables in HTML

HTML table allows you to arrange data into rows and columns. They are commonly used to display tabular data like product listings, customer's details, financial reports, and so on.

You can create a table using the <table> element. Inside the <table> element, you can use the <tr> elements to create rows, and to create columns inside a row you can use the <td> elements. You can also define a cell as a header for a group of table cells using the <th> element.

Tables do not have any borders by default. You can use the CSS border property to add borders to the tables.

Also, table cells are sized just large enough to fit the contents by default. To add more space around the content in the table cells you can use the CSS padding property.

The following style rules add a 1-pixel border to the table and 10-pixels of padding to its cells.

```
table, th, td { border: 1px solid black; } th, td { padding: 10px; }
```

Next Lecture: HTML List

HTML LISTS

Working with HTML lists

- HTML lists are used to present list of information in well formed and semantic way. There are three different types of list in HTML and each one has a specific purpose and meaning.
- **Unordered list** — used to create a list of related items, in no particular order.
- **Ordered list** — used to create a list of related items, in a specific order.
- **Description list** — used to create a list of terms and their descriptions.

HTML Unordered Lists

An unordered list created using the <ul> element, and each list item starts with the <li> element.
The list items in unordered lists are marked with bullets. Here's an example:

```
<ul> <li>Chocolate Cake</li> <li>Black Forest Cake</li> <li>Pineapple Cake</li> </ul>
```

You can also change the bullet type in your unordered list using the CSS list-style-type property.
The following style rule changes the type of bullet from the default *disc* to *square*:

```
ul { list-style-type: square; }
```

HTML Ordered Lists

An ordered list created using the <ol> element, and each list item starts with the <li> element. Ordered lists are used when the order of the list's items is important.
The list items in an ordered list are marked with numbers. Here's an example:

```
<ol> <li>Fasten your seatbelt</li> <li>Starts the car's engine</li> <li>Look around and go</li> </ol>
```

The numbering of items in an ordered list typically starts with 1.

However, if you want to change that you can use the start attribute, as shown in the following example:

```
<ol start="10"> <li>Mix ingredients</li> <li>Bake in oven for an hour</li> <li>Allow to stand for ten minutes</li> </ol>
```

Like unordered list, you can also use the CSS list-style-type property to change the numbering type in an ordered list.
The following style rule changes the marker type to roman numbers.

```
ol { list-style-type: upper-roman; }
```

Next Lecture: HTML Forms

HTML FORMS

What is HTML Form

HTML Forms are required to collect different kinds of user inputs, such as contact details like name, email address, phone numbers, or details like credit card information, etc.

Forms contain special elements called controls like inputbox, checkboxes, radio-buttons, submit buttons, etc.
Users generally complete a form by modifying its controls e.g. entering text, selecting items, etc. and submitting this form to a web server for further processing.

The <form> tag is used to create an HTML form. Here's a simple example of a login form:

```
<form>
    <label>Username:</label>
    <input type="text>
    <label>Password:</label>
    <input type="password“>
    <input type="submit" value="Submit">
</form>
```

Input Element

This is the most commonly used element within HTML forms.

It allows you to specify various types of user input fields, depending on the type attribute.

An input element can be of type

text field, password field, checkbox, radio button, submit button, reset button, file select box, textarea, Select box, color, date,

email, number, range, tel, time

Demo: Create a registration form using these input types.

Next Lecture: HTML Audio

HTML5 AUDIO

Embedding Audio in HTML Document

Inserting audio onto a web page was not easy before, because web browsers did not have a uniform standard for defining embedded media files like audio.

In this chapter we'll demonstrates some of the many ways to embed sound in your webpage,
from the use of a simple link to the use of the latest HTML5 <audio> element.

Using the HTML5 audio Element

The newly introduced HTML5 <audio> element provides a standard way to embed audio in web pages. However, the audio element is relatively new but it works in most of the modern web browsers.

The following example simply inserts an audio into the HTML5 document, using the browser default set of controls, with one source defined by the src attribute.

```
<audio controls="controls" src="media/birds.mp3"> Your browser does not support the HTML5 Audio element. </audio>
<audio controls="controls"> <source src="media/birds.mp3" type="audio/mpeg">
<source src="media/birds.ogg" type="audio/ogg"> Your browser does not support the HTML5 Audio element. </audio>
```

Next Lecture: HTML Video

HTML5 VIDEO

Using the HTML5 video Element

The newly introduced HTML5 <video> element provides a standard way to embed video in web pages. However, the video element is relatively new, but it works in most of the modern web browsers.

The following example simply inserts a video into the HTML document, using the browser default set of controls, with one source defined by the src attribute.

```
<video controls="controls" src="media/shuttle.mp4"> Your browser does not support the HTML5 Video element. </video>
<video controls="controls"> <source src="media/shuttle.mp4" type="video/mp4">
<source src="media/shuttle.ogv" type="video/ogg"> Your browser does not support the HTML5 Video element. </video>
```

Embedding the YouTube Videos

This is the easiest and popular way to embed videos files in the web pages.

Just upload the video on YouTube and insert HTML code to display that video in your web page.

Next Lecture: Capstone Project 1 and Assignment

CAPSTONE PROJECT 1

Create a website for a travel & tour company.

- Website should be at least 3 pages.
- Use html with little style attributes.

Assignment

Create a website for a restaurant with delivery service

- Website should be at least 5 pages.
- Use html with little style attributes.