**EED PRACTICAL GUIDE**

**PREPARED BY**

**FACILITATOR’S NAME: AUGUSTINE CHIDIEBERE ONUORA (M.SC)**

**SKILL/TRADE GROUP:**

**WEBSITE DESIGN AND DEVELOPMENT**

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**TOPIC: HTML, CSS AND JAVASCRIPT**

**HTML**

In this topic, various component of HTML are discussed to design a web page. The basic structure for an HTML page is shown below.

* + - Entries inside the /< . . . /> are known as tags. Most of the tags has an opening and closing e.g. <head> (opening head) and </head> (closing head). Some of the tags do not have closing tags e.g. <!DOCTYPE

. . . > and <br />. We need to write the HTML codes inside the tags.

* + - The comments are written between ‘<!–’ and ‘–>’.
    - Here Line 1 gives the details of the ‘HTML version’ to the web-browser. The ‘html’ tells it is version 5.
    - The ‘head’ tag (Lines 3-5) contains the header related tags e.g. ‘title for the page’ and ‘links for the css files’ etc.
    - The ‘body’ tag (7-11) contains the actual HTML code which is displayed on the web-browser. Also, we add all the JavaScript related codes just before the closing body tag (</body>).

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*<!DOCTYPE html><!--tells browser above the html version-->*

<html> *<!--beginning of the html document-->*

<head>

*<!--header related tags e.g. title, links etc.-->*

</head>

<body>

*<!--actual html document here-->*

*<!--add JavaScript files here-->*

</body>

</html>

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**First code**

In below code, the message “Hello World” is displayed on the HTML page. The[Fig.1.1is](#_bookmark4) the resultant HTML page.

* + - The title (Line 4) appears on the top of the browser.
    - The tag <h1> is called ‘header’ tag, which has the larger size than the normal text (see the size of ‘Hello World!’).
    - The tag <p> is called the ‘paragraph’ tag, which can be used to write the paragraphs.

Fig. 1.1: First code

<head>

<title>HTML Tutorial</title>

</head>

<body>

<h1> Hello World! </h1>

<p> This is the first HTML code </p>

</body>

</html>

**Basic tags**

* + - TheT[able1.1](#_bookmark6)shows the list of tags which are required for writing the basic ‘HTML’ codes i.e. without any style e.g. bold, italics and numbering etc.

Table 1.1: List of basic tags

|  |  |  |
| --- | --- | --- |
| Tag | Description | Example |
| h1, . . . , h6 | Header tag h1 to h6 | <h2> Hi </h2> |
| p | paragraphs (Line changes at the end) | <p> Hi </p> |
| span | No line change after span | <span>Hi</span> Bye. |
| div | make division between contents | <div> . . . </div> |
| a | hyperlink | see[Section1.9](#_bookmark22) |
| center | Move content to center | <center> Hi </center> |
| br | Line break (no closing tag) | <br /> or <br> |
| hr | horizontal line (no closing tag) | <hr /> or <hr> |
| pre | preserve formatting | <pre> . . . . </pre> |
| table | insert table | see[Section1.5](#_bookmark12) |

* + - Let’s see the example of each of these tags,

**Note:** All the new codes are added below the previous codes in the ‘body’ tag. Therefore only newly added codes are shown in the tutorial.

<h2> Heading 2 </h2>

<h6> Heading 6 </h6>

<p> This is paragraph </p>

<span> This is span.</span>

<span> The 'br' tag is used after span to break the line </span>

<br/>

<divstyle="color:blue;">

The 'div' tag can be used for formatting the tags inside it at once using 'style' and 'classes'␣

˓*→*etc.

<p> This paragraph is inside the 'div' tag </p>

<span> This span is inside the 'div' tag </span>

<br/>

</div>

<center>

<h3> Heading 3 is centered</h3>

<p><span> Centered span inside the paragraph.</span><p>

</center>

Two horizontal line is drawn using two 'hr' tag.

<hr/>

<hr>

<pre> 'pre' tag preserve the formatting (good for writing codes) # Python code

x = 2

y = 3 print(x+y)

</pre>

* + - [Fig.1.2](#_bookmark7)is the output of above code. Read the text to understand each tag,

**Attributes**

In[Fig.1.2,](#_bookmark7) we saw an example of attribute (i.e. style) which changed the color of all the elements to ‘blue’ inside the ‘div’ tag.

**Attribute ‘name’ and ‘value’**

* + - * Attribute is defined inside the opening part of a ‘tag’. For example, in the below code, the attribute ‘style’ is defined inside the ‘div’ tag.

<divstyle="color:blue;">

</div>

* + - * An attribute has two parts i.e. ‘**name**’ and ‘**value**’. For example, in the above code, **name** and **value** of the attribute are ‘**style**’ and ‘**blue**’ respectively.

**Core attributes**

Below are the three core attributes which are used frequently in web design.

* + - * **id** : The ‘id’ is the **unique** name which can be given to any tag. This is very useful in distinguishing the element with other elements.

<pid= 'para1'> This is paragraph with id 'para1' </p>

<pid= 'para2'> This is paragraph with id 'para2' </p>

* + - * **class** : The attribute ‘class’ can be used with multiple tags. This is very useful in making groups in HTML design.

<pclass="c\_blue"> This is paragraph with class 'blue'</p>

<spanclass="c\_blue"> This is span with class 'blue'</span>

* + - * **style** : We already see the example of style attribute, which can be used to change the formatting of the text in HTML design. We can specify various styles which are discussed later[.](#_bookmark28)

<pstyle="font-weight:bold; color:red;">Style attribute is used to bold and color</p>

**Note:** Above three attributes are used with ‘CSS (cascading style sheet)’ and JavaScript/jQuery, which are the very handy tools to enhance the look and functionalities of the web-page respectively. The CSS is discussed later with JavaScript.

* + - * Also we can define multiple attributes for one tag as shown below,

<pclass="my\_class"id="para\_with\_class"style="color:green"> Multiple attributes </p>

* + - * The other useful attributes are listed inT[able1.2](#_bookmark11)

Table 1.2: List of attributes

|  |  |  |
| --- | --- | --- |
| Name | Values | Description |
| id | user defined names | <p id=’p\_1’> Hi </p> |
| class | user defined names | <p class=’p\_class’> Hi </p> |
| style | CSS styles | <p style=”color:red; font-weight:bold;”> Hi </p> |
| align | left, right, center | horizontal alignment |
| width | numeric value or % value | width of images and tables etc. |
| height | numeric value | height of images and tables etc. |

**Tables**

In this section, we will learn to draw tables along with some attributes which are discussed inT[able1.2.](#_bookmark11)T[able1.3](#_bookmark13) shows the list of tags available to create the table, which are used in[Listing1.1.](#_bookmark14)

Table 1.3: Tags and attributes for creating tables

|  |  |
| --- | --- |
| Tag | Description |
| table | beginning and end of table |
| tr | row of table |
| th | header cell |
| td | data cell |
| **Attributes** |  |
| rowspan | number of rows to merge |
| colspan | number of columns to merge |
| border | width of border |
| cellpadding | width of whitespace between two border |
| cellspacing | width of whitespace within a border |
| bgcolor | background color |
| bordercolor | color of border |
| width | width of table (numeric or %) |
| height | height of table (numeric) |
| caption | caption for table |

* + - Some of the attributes of T[able1.3](#_bookmark13) are used in below example,

Listing 1.1: Table with border and color

*<!--border-color, width and height-->*

<tableborder="1"bordercolor="black"width="450"height="100">

<caption>Table 1 : Various tags of table</caption>

<trbgcolor="red"> *<!--row-->*

<th>Column 1</th> *<!--header-->*

<th>Column 2</th>

<th>Column 3</th>

</tr>

<trbgcolor="cyan"> *<!--background color-->*

<td>Data 1</td> *<!--data-->*

<td>Data 2</td>

<td>Data 3</td>

</tr>

<trbgcolor="yellow"> *<!--row-->*

<tdcolspan="2">New Data 1</td> *<!--column span-->*

<td>New Data 2</td> *<!--data-->*

</tr>

</table>

*<!--width in -->*

<tableborder="1"bordercolor="black"width="80 "height="100">

<caption> Table 2 : Width is 80 </caption>

<trbgcolor="red">

<th>Column 1</th>

<th>Column 2</th>

<th>Column 3</th>

</tr>

(continues on next page)

<trbgcolor="cyan"> *<!--row-->*

<td>Data 1</td> *<!--data-->*

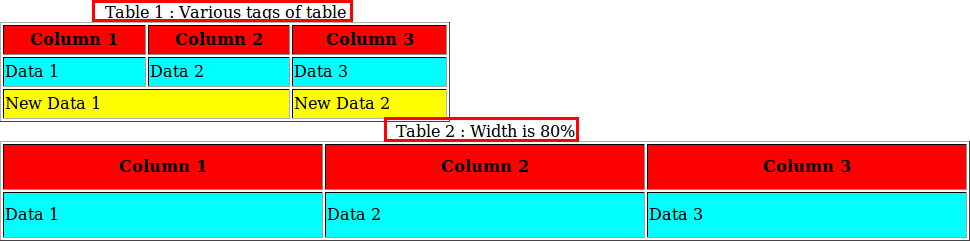
<td>Data 2</td>

<td>Data 3</td>

</tr>

</table>

* + - [Fig.1.3](#_bookmark15)is the output of above code,

Fig. 1.3: Table generated byT[able1.3](#_bookmark13)

**Text formatting**

In this section, we will see some of the text formatting options (seeT[able1.4)](#_bookmark17) e.g. bold, italic, subscript and strike etc.

Table 1.4: Text formatting

|  |  |
| --- | --- |
| **Tag** | **Description** |
| b | bold |
| i | italic |
| u, ins | underline |
| strike, del | strike |
| sup | superscript |
| sub | subscript |
| big | big size text |
| small | small size text |

* + - Below are the some of the examples of text formatting, whose results are shown in[Fig.1.4,](#_bookmark19)

*<!--Text formatting-->*

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

<p>This is <strike>striked</strike> text</p>

<p>This is <sub>subscript</sub> text</p>

**Images**

Image tag has two important attribues i.e. ‘src’ and ‘alt’ as described below,

* + - **src** : tells the location of ‘image’ file e.g. in Line 2 the image ‘logo.jpg’ will be searched inside the folder ‘img’.

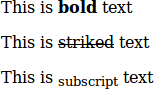


Fig. 1.4: Text formatting

* + - **alt** : is the ‘alternate text’ which is displayed if image is not found. For example, in Line 6, the name of the image is incorrectly written i.e. ‘logoa’ (instead of ‘logo’), therefore the value of ‘alt’ i.e. ‘Missing Logo.jpg’ will be displayed as shown in[Fig.1.5.](#_bookmark20)

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*<!--Images-->*

<imgsrc="img/logo.jpg"alt="Logo.jpg"width="20 "/>

<br/> <br/>

<imgsrc="img/logoa.jpg"alt="Missing Logo.jpg"width="20 "/>

2 

Fig. 1.5: Images

**Note:** We can use other attributes as well e.g. ‘**height**’, ‘**align**’ and ‘**border**’ etc.

* 1. **Lists**

There are three type of lists in HTML,

* + - Unordered list : bullet are used in it (see Lines 2 and 9)
    - Ordered list : numbers are used in it (see Lines 15, 22 and 28)
    - Definition list : This can be used for writing definitions in HTML (see Line 35)

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*<!--Lists-->*

*<!--unordered list-->*

<ul> Unordered List

<li>Pen</li>

<li>Pencil</li>

<li>Eraser</li>

</ul>

<ultype="circle"> Change bullets : 'square', 'circle' or 'disc'

<li>Pen</li>

<li>Pencil</li>

<li>Eraser</li>

</ul>

*<!--ordered list-->*

<ol> Ordered List

<li>Pen</li>

<li>Pencil</li>

<li>Eraser</li>

</ol>

<oltype= 'i'> Change style : 'i', 'I', '1', 'a' or 'A'

<li>Pen</li>

<li>Pencil</li>

<li>Eraser</li>

</ol>

<oltype= 'i' start="5"> Start from 'v'

<li>Pen</li>

<li>Pencil</li>

<li>Eraser</li>

</ol>

*<!--Definition list-->*

<dl>

<dt> <h4>HTML Definition List</h4> </dt>

<dd> HTML is easy </dd>

<dd> HTML is good </dd>

<dl>

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The outputs of above codes are shown in [Fig.1.6,](#_bookmark23)

**Links**

(continues on next page)

*<!--links-->*

<p>Go to paragraph with<ahref="#para1"> id= 'para1'</a></p>

<ahref=["http://pythondsp.readthedocs.io"](http://pythondsp.readthedocs.io/)> PythonDSP </a>

<br>

<p><ahref="js.html"target="\_self"> JavaScript Tutorial</a> in same window.</p>

<p><ahref="js.html"target="\_blank"> JavaScript Tutorial</a> in new Window.</p>

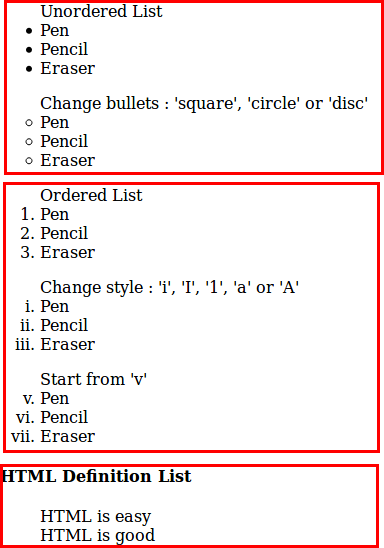


Fig. 1.6: Lists

**JavaScript**

* + - JavaScript is a dynamic language which is used for designing the web pages on the client side.
    - It is case sensitive language.
    - It is untyped language i.e. a variable can hold any type of value.
    - // is used for comments.
    - ; i used for line termination.
    - JavaScript code should be added at the end i.e. **just above the closing-body-tag**.
    - It is better to write the JavaScript code in separate file as shown in next section.

**First code**

The JavaScript code can be written in the ‘html’ file or in the separate ‘JavaScript file (.js)’ as shown in this section,

**JavaScript in HTML ftle**

In HTML file, the JavaScript codes can be written inside the ‘script’ tag as shown in Lines 11-13 of below code. The code will write the message “Hello World from JavaScript!” on the web page. Open the ‘js.html’ in the browser to see the message.

*<!--js.html-->*

*<!DOCTYPE html>*

<html>

<head>

<title>JavaScript</title>

</head>

<body>

</body>

</html>

<scripttype="text/javascript">

document.write("Hello World from JavaScript!<br>");

</script>

**Conclusion**

In this tutorial, we have selected the element with certain ‘id’ using ‘getElementById’. Also, we saw the example of ‘event handling’ Although, we can use JavaScript for these operations, but it is better to use **jQuery** for these purposes.

**APPARATUS/EQUIPMENT:** Smart Phone / Laptop? Desktop, Internet Modem / wireless Connectivity.

**BRIEF THEORETICAL BACKGROUND:**

What are the latest website design industry statistics? And to take this further, why is website design so important? On your journey toward an elegant and efficient website, you need to know your web design statistics. They’ll provide you with a roadmap to where you want to go with your design!

Before we start, let’s make a couple of things clear first:

What exactly is web design? Industrial website design is everything about your website – its content, the way it looks, and the way it works. All this is determined by website design. It is the whole process of creating a website – from the first steps of planning and developing the layout – to picking the colors, graphics, and interactive images.

What kind of industry is web development? Nowadays the web design industry is one of the most lucrative in our modern society. It made information abundant and available to all users everywhere. Customers around the world depend on their services every day. Web development includes web design, web content development, web server, and network security configuration, and of course – e-commerce development. Nowadays design means business.

What works in website design constantly changes. If you want to stay competitive, the web development statistics of 2018 can provide some insight.

Here are the most important 2018 website design facts you need to be aware of.

1. 48% of people cited a website’s design as the number one factor in deciding the credibility of a business. (Source: Blue Corona)

2. 8 in 10 of consumers would stop engaging with content that doesn’t display well on their device. (Source: Ironpaper)

3. 85% of customers trust online reviews as much as personal recommendations. (Source: Web Alive)

4. 68% of the companies that developed a mobile-first website saw a rise in sales. (Source: SAG ipl)

5. There are over 200 million active websites on the internet. (Source: Brandongaille)

6. Do-it-yourself platforms for web development in the cloud are currently worth $24 billion in the US. They also experience a 4.9 percent annual growth. (Source: Ibis World)

7. 62% of companies increased their sales by designing responsive mobile platforms for their websites. (Source: SAG ipl)

8. In 2018, 52.2% of website traffic comes from mobile. (Source: Statista)

9. 68% of companies which developed a mobile-friendly website design experienced an increase in sales. (Source: SAG ipl)

Mobile was responsible for 92% of Facebook’s revenue for 2018.

10. 73% of companies are investing in design to differentiate their brands. (Source: Blue Corona)

11. 94% of people say bad design is the main reason they don’t trust certain websites.

(Source: Social Media Today)

12. 85% of users trust online reviews as if they were personal recommendations.

(Source: Web Alive)

13. 36% of website visitors click on your logo to reach your homepage from other pages. (Source: Web Alive)

14. 82% of customers trust a company after reading customer content. (Source: SAG ipl). People almost always need a second opinion before making a purchase. Nowadays they use their smartphones to search for items and best prices, even while shopping in a physical store! Conducting research before purchasing has become a modern necessity.

**CAPITAL REQUIRED TO START SKILL:**

NILL - Website design and development is a skill that requires no capital to start. It is a service and your client will usually mobilize you to start work. You use the mobilization fee to subscribe for internet connectivity used during your design.

**MATERIALS NEEDED (Software):**

Notepad/Notepad++, Adobe fireworks, Adobe Photoshop, Sublime text, Web Browsers (Mozilla Firefox, Internet Explorer, Google Chrome).

**PROCEDURES/STEPS FOR ACHIEVING DESIRED RESULTS:**

* Understand what your client wants
* Design the User Interface. This UI could be for desktop, Mobile or for mixed platform
* Write the corrending javascript code to validate and verify inputs from the UI.
* Test to see that your design is as per clients specifications else debug
* If design and development is complete, you purchase a domain name.(e.g. www.myeed.com)
* You purchase a server space for hosting.
* Use Filezilla or other ftp file upload tool to upload to your live server.
* Bravo! Your website is now live.

**MARKET:**

With the web design service industry a $20.1B market in the US alone, and more than 16M new websites added every month, who creates these millions of new sites?

More than 70% of websites are created in a professional process by developers using pro-developers platforms. These B2B solutions offer tools for building advanced websites including custom design and CMS (Content Management Systems), such as WordPress, Joomla and Drupal. However, in order to create functioning websites developers need to manually convert static graphic design into code.

"Technology is a powerful vehicle, but we have to ask ourselves, who is driving it?" We believe Web designers should grab the driver's seat. Developers have extremely powerful open-source communities such as WordPress, now it is time for the designers' community to unite in a similar way and lead the future of website creation. Designers are the innovative force behind the great achievements of this era.

Nigeria as a third world country is yet to tap into the money mine of website design and development. Every sector and Niche in Nigeria today requires a website. Starting from the financial sector, to the manufacturing, the barber, hair dressing saloon, the architect, builder, schools, churches, mosques, association, and organisations of both government and private businesses. Empowered with total creative freedom and independence designers will shape a better web for us all."

**EXPECTED YIELD / REVENUE / PROFITS**

The expected profit or yield of this skill depends on your negotiation prowess. You can make as much as 700% profit on a single contract job. It all depends on the type of client and the nature of work to be done.