Chapter 4
Introduction to HTML

Learning Objectives 📖

By the end of this chapter, learner will be able to:
- Understanding of basic structure of HTML
- Learning of various container and empty tags
- Learn various html tags and their syntax.
- Understanding of formatting elements of HTML

INTRODUCTION

HTML refers to Hypertext Markup Language**.** There is a special kind of text used by web browsers that represents the data. This data may be in the form of letters, images, audios or videos. This special text is given emphasis, which some people may say, it is marked up through a link to the other documents. Thus a page formed using the special text is called a document or a webpage. A webpage can get opened in a web browser. The web browser accesses the web page from the web server (a place which holds most of the webpages). A web server may be placed anywhere in the world. This means that a web browser can access a webserver only if it connects to internet (network of networks across globe). The HTML was founded by the group called "World Wide Web Consortium" in 1990.

1. OVERVIEW OF HTML

1.1. Who Invented HTML

HTML was invented in November 1990 by a scientist called Tim Berneses-Lee. The purpose was to make it easier for scientists at different university to gain access to each other's research documents.

1.2 A Brief history

HTML is not an invention but an improved version of Standard Generalised Markup Language(SGML).SGML is a Meta Language (general -- purpose language)used for defining and creating descriptive markup language.

1.3 What tools do you need?

To get started with html documents, only two basic things are required

- A text editor/HTML editor
- A Web Browser

1.4 Tags and Attributes

The World Wide Web Consortium has given a set of standards while building the HTML language. The W3C uses some special words to define an action.

A **tag** is a special word enclosed in angle-brackets < >. A tag tells the browser to perform an action as asked by the special word. The special word may be written either in lower case or upper case. The browser will respond to both the cases equally.

The HTML tags are normally comes in pair of start and end tag(an opening tag and closing tag). While the start tag is written in the beginning of the element as <SpecialWord>, the end tag is written at the completion of the element as </SpecialWord>.

For example: When you want to begin with writing source code using HTML, you write the start tag as <HTML> and when you have completely written in the HTML document and want to end it, you write the end tag as </HTML> i.e. insert a forward slash followed by HTML in angled brackets.

The characteristics or the features of a tag are defined by an **attribute**. An attribute is used inside a tag. An attribute always takes a *value* to help the browser perform the specific task in a particular direction. There may be more than one attribute used inside a tag.

An **element** is a combination of a start tag, the text(we also use text to insert graphics) and the end tag.

For example:

<body> element begins with start tag, followed by text and ends with end tag.</body>

In simple words, one can equate an element to a block, a tag to an instruction and an attribute to an extension to a instruction.

Container of Tags: One set of tags may contain another set of tags. This is called nesting of tags. The second block of tags is always contained in first block as shown below:

<TAG1> <TAG2>……………</TAG2> </TAG1>

<TAG1> and </TAG1> is the first block of tags. <TAG2> and </TAG2> is the second block of tags**.**

2. STRUCTURE OF HTML DOCUMENT

The basic structure of HTML document is shown below:

<HTML> <HEAD> <TITLE> The Structure of HTML Document </TITLE> </HEAD>	First section
<BODY> The Body of the HTML Document </BODY> </HTML>	Second section

The basic structure of the HTML document is divided into two sections namely, the head and the body. The browser enters the first section after executing the start tag of HTML (telling the browser to begin interpreting the HTML commands) and start tag of HEAD. The first section helps in changing the heading on the title bar of the HTML document (the webpage). The starting of the heading is shown after the start tag of TITLE and the end is shown by </TITLE>. The end tag of HEAD i.e. </HEAD> tells the browser that the end of first section has come.

The second section begins with the start tag of BODY. The data on the webpage is displayed through the tags used in this section. The end tag of BODY i.e. </BODY> tells the browser that no more data is to be inserted on the webpage and the end of the web document has come. After the completion of this section, the slash HTML or the end tag of HTML tells the browser to stop looking for HTML commands. This implies that any tag used after the end tag of HTML will not be interpreted by the browser and so no action will be performed.

Please Note: All the sentences containing any number of whitespaces written inside a tag within the body element will appear as written in the HTML code. Any whitespace inserted outside the tag within the body element will be interpreted as null, void or amounting to nothing by the browser. That is, such whitespaces outside the tag will not appear anywhere on the webpage.

3. SAVING THE HTML DOCUMENT

When you have finished writing the HTML code in the text editor, click on File menu and select Save option. This opens a window, which asks you to save the file in a folder and

give a name and an extension to the file. The extension in this file will be .html or .htm. (e.g. **basic.htm** or **firstHTMLDocument.html**). This will turn the file into a webpage.

In order to modify the webpage, either open the web page and click on View→source or open the webpage with notepad.

4. CONTAINER AND EMPTY TAGS

Before we proceed further to formatting tags, it is necessary for you to understand the difference between the container and the empty tag. **A container tag** has both the start and the end tag. The text or the graphic is inserted inside the beginning and end tag of the container tag. For example: <body>This is a container tag</body>. The <BODY> tag here is a container tag which has both the beginning and the ending tag and the text in between both the tags.

The **empty tag** is a stand-alone tag. This implies that such a tag has beginning but no ending tag. For example: The **
** tag is used for adding one line break. Such a tag does not need an end so as to tell the browser, that end of line break has come because there is no need. Such a tag is called empty tag. **HR** is another empty tag. This tag is used to insert a horizontal rule on the web page. **Comment** tag is also an empty tag. This tag is ignored by the browser. This tag is used to increase the readability of the HTML source code. With this tag, you can insert a description about a command. This is written as : <!--, followed by description or remark on a command, followed by -->. For example: <!-- Hello -->

<BODY>…</BODY>

The second section of the webpage begins with the <BODY> tag. This defines the visible section of the document. It has a number of attributes which controls the overall appearance of the document. The attributes that are used with this tag are listed below in the table:

Attribute of the <body> tag	Description
BGCOLOR	The background of the webpage is displayed with a color that has been taken as value by this attribute.
BACKGROUND	The background of the webpage is displayed with an image whose address is taken as value by this attribute.
TEXT	Specifies the color of the text in the document.
LINK	Defines the color of the link in the document
ALINK	Defines the color of the active link in the document
VLINK	Defines the color of the visited link in the document

4.1 Formatting Elements

In a web page, the text is an important component especially when there is no picture or graphic. It becomes therefore necessary to change the style of text at every paragraph, so that they become presentable. There are a number of tags that help you to format the text.

4.1.1 <Heading Tags>

Heading tag is used to display the heading or the main topic on the web page. This tag varies from H1 to H6. This is a container tag. The heading tag <H1> shows the heading with the largest font size. As you increase the number in the heading tag, the font size goes down as shown in the example given below:

<H1> This text is in largest font i.e. H1 font </H1>

<H2> This text is in larger font i.e. H2 font </H2>
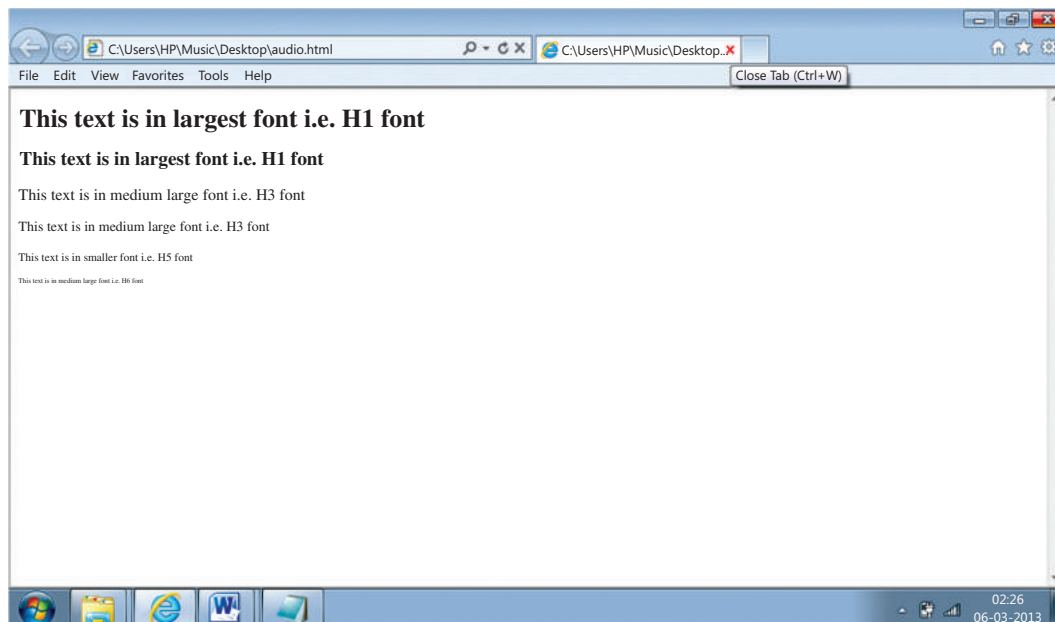
<H3> This text is in medium large font i.e. H3 font </H3>

<H4> This text is in medium small font i.e. H4 font </H4>

<H5> This text is in smaller font i.e. H5 font </H5>

<H6> This text is in smallest font i.e. H6 font </H6>

The above code produces the following output:

We can see from the output that the size of the font keeps decreasing as one increases the number in the heading tag.
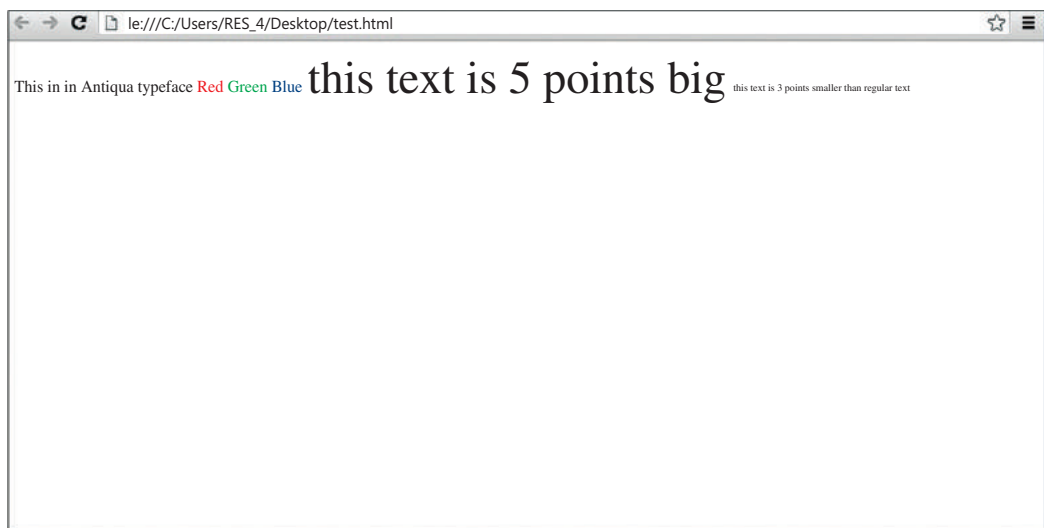
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4.1.2 The <FONT> tag

The FONT tag is a container tag that has a number of attributes listed below in the table

Attribute of the <font> tag	Description
FACE	Sets the text to the name of the font used as its value.
SIZE	Decides the scale of the text. It can range between -7 and +7.
COLOR	Changes the color of the text written inside the container tag.

The following example will help you understand the use of FONT tag.

```
<font face="Book Antiqua">This is in Antiqua typeface</font>
<font color="#ff0000">Red</font>
<font color="#00ff00">Green</font>
<font color="#0000ff">Blue</font>
<font size=+5> this text is 5 points big</font>
<font size=-3> this text is 3 points smaller than regular text </font>
```
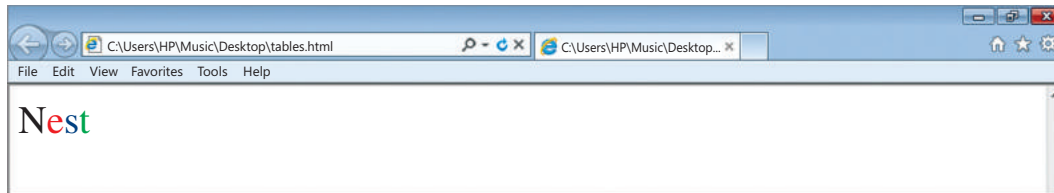
The above code produces the following output:

Please Note: The face name is case insensitive.

Font tag can be nested. We can understand this by an example.

```
<font size=+3>N<font color=red>e</font><font color=blue>s</font><font color=green>t</font></font>
```

The above produce the following output:

4.1.3. Entering Paragraph Text on your Web page

A paragraph can be written on the web document using the <p> tag. This is a container tag, though the </p> tag is optional. It uses one attribute called *align* that takes the value left, right or center.

```
<FONT SIZE=+4><P ALIGN="CENTER">
This paragraph is centered.
</P>
</FONT>
```

In the above code, the align attribute takes the value center. The output of the above code is:

4.1.4.The CENTER tag

Is needed to place the text in the center. Sometimes it may not be possible to use align attribute again and again along with a tag. Then it is better to use nested form of center tag once and use other tags inside the opening and closing center tags.
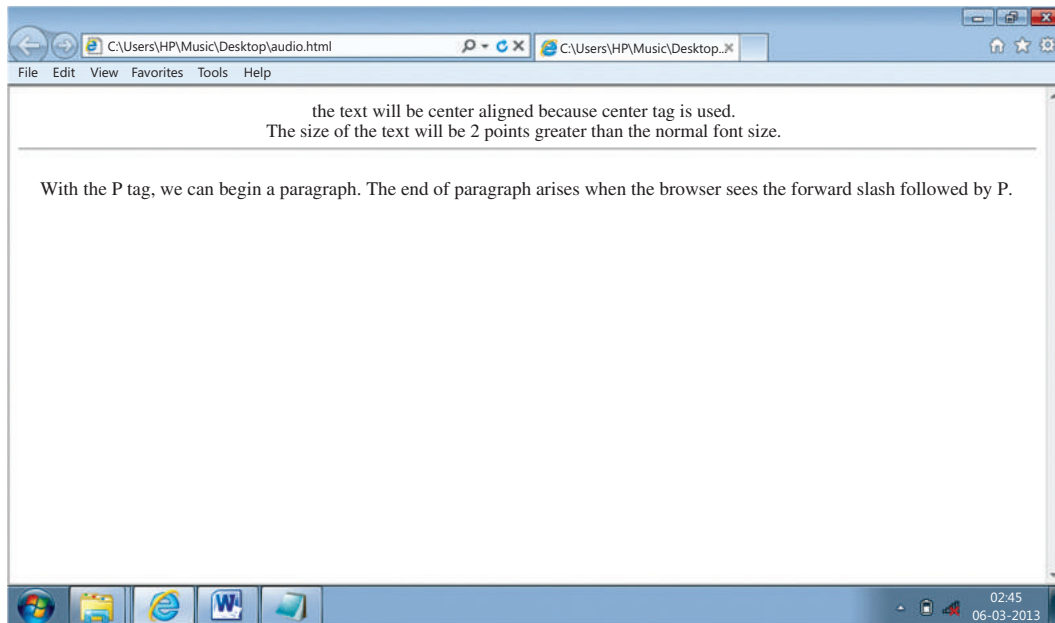
For example:

```
<center>
<font size=+2> the text will be center aligned because center tag is used.
<br>
        The size of the text will be 2 points greater than the normal font size.
<br>
<hr>
<br>
<p>
```

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> With the P tag, we can begin a paragraph. The end of paragraph arises when the browser
> sees the forward slash followed by P.
> </p>
>
> </center>

The above code produces the following output:

Please note: In the above output, the line that separates the font tag with the paragraph tag has been placed on the webpage using <hr> tag. The <hr> tag is an empty tag, similar to <br>.

4.1.5. Bold, italics and underline

There are other tag that help in changing the style of the font. They make the text boldface, italics and underlined. They are shown in the table below:

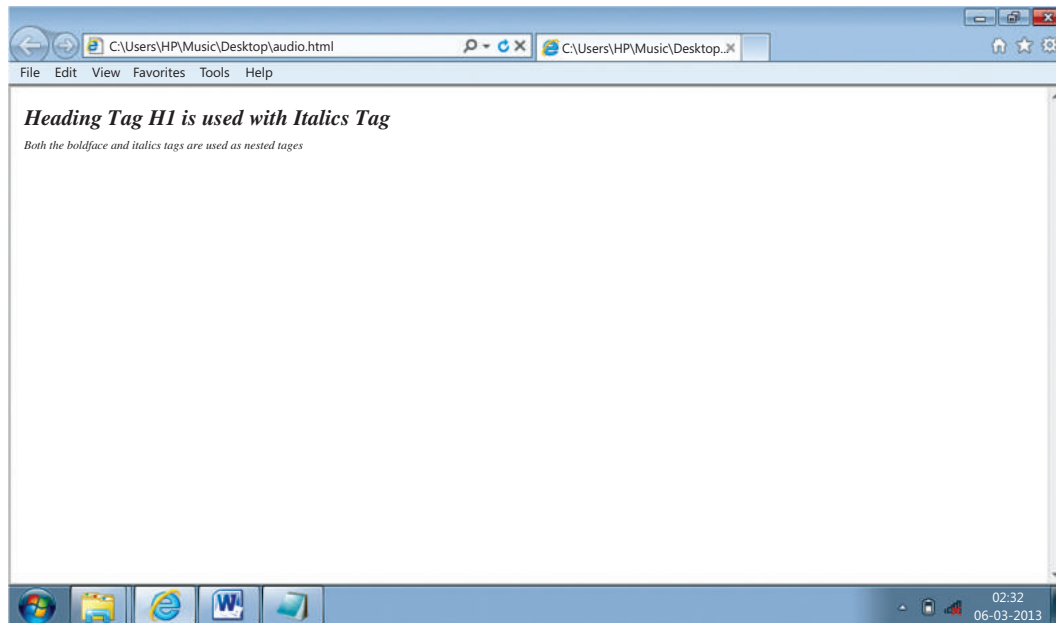| Tags	Meaning
<B>, </B>	Bold text
<I>, </I>	Italic text
<U>, </U>	Underlined text

For Example

The following code uses tag <I> in combination with header tag <H1>.

```
<H1><I>Heading Tag H1 is used with the Italics Tag</I></H1>
<B><I>Both the boldface and italics tags are used as nested tags</I></B>
```

The above code produces the following output:

4.1.6 The following table gives a list of tag used in the chapter, with their example and the output:

S. No.	Start tag	End Tag	Example	Output
1	<h3>	</h3>	<H3>Use H1 or H2 or H3 etc. for headings</H3>It automatically adds a paragraph break after the heading.	Use H1 or H2 or H3 etc. for headings It automatically adds a paragraph break after the heading.
2			You can change the actual font used to some extent within your text. In this instance, the browser will attempt to use "Arial"; if not, it will ignore the instruction.	You can change the actual font used to some extent within your text. In this instance, the browser will attempt to use "Verdana" if the computer has it; if not, "Arial"; if not, "Helvetica"; if not, a generic sans-serif font; if not, it will ignore the instruction.

S. No.	Start tag	End Tag	Example	Output
3			Increases font size by the amount of the number. You can also use negative numbers.	Increases font size by the amount of the number. You can also use negative numbers.
4			You can change the font color within your text.	You can change the font color within your text.
5	<p align=right>	</p>	Right aligned paragraph. <p align=right>You can use the "p" tag as a container to align text to the right</p>	Right aligned paragraph. You can use the "p" tag as a container to align text to the right
6	<center>	</center>	<center>Centers the text</center>	Centers the text
7			This is for bold text	This is for bold text
8	<i>	</i>	This is for <i>italic</i> text	This is for italic text

Summary

1. The World Wide Web Consortium has given a set of standards while building the HTML language.
2. The basic structure of the HTML document is divided into two sections namely, the head and the body.
3. A container tag has both the start and the end tag.
4. HR is another empty tag. This tag is used to insert a horizontal rule on the web page.
5. Heading tag is used to display the heading or the main topic on the web page. This tag varies from H1 to H6.
6. A paragraph can be written on the web document using the <p> tag. There
7. Bold, Italic and Underline are those tags that help in changing the style of the font.

EXERCISE

A. Name the tag used for:-

1. Inserting a section break

2. Marking up text to appear bold

3. Marking up text to appear italic

4. To change the font size of the entire html document.

5. To write a paragraph aligned to the right side of the page.

B. Correct the errors in the following HTML code:

```
<HTML>
<TITLE> My first program
<BODY>
<P Align="centre"> This is my first web program </P>
<HEAD>
<HTML>
```

C. Multiple choice Questions

1. Html uses
   (a) Pre specified tags   (b) User defined tags
   (c) Fixed tags   (d) Tags used for linking

2. What is the correct html tag for inserting a line break?
   (a) <break>   (b)
   (c) <lb>   (d) <line break>

3. Choose the correct HTML tag to make the text bold
   (a) <bold>   (b) <b>
   (c) <large>   (d) <Big>

4. Choose the correct html tag for the largest heading
   (a) <h1>   (b) <heading>
   (c) <head>   (d) <h6>

5. How many blank line breaks will a browser create if you enter four <br> tag
   (a) 5   (b) None
   (c) 3   (d) 4

D. State True or False:-

1. Html is a case sensitive language.

2. SGML is an improved version of HTML.

3. A tag is a special word enclosed in angle-brackets < >.

4. HTML is divided into 3 sections head, title and body.

5. VLINK defines the link of active link.

E. Answer the following questions:-

Q.1. What is font tag? Name the various attributes of font tag.

Q.2. Difference between <br> and <hr> tag.

Q.3. Differentiate between LINK, ALINK and VLINK.

Q.4. Explain heading tag with the help of a suitable example.

Q.5. Difference between container tag and empty tag.

Q.6. Write down the basic structure of HTML document.

Q.7. How do you create a comment tag?

Q.8. Name and explain any 2 attributes of body tag.

Q.9. Name the tools required to create a html document.

Q.10. Write a short note on HTML.

F. Lab Session

❖ Create a HTML document to print your name 5 times in 5 different fonts.

❖ Write a HTML document to display the name of school in bold and italic both.

❖ Create a HTML document containing three paragraphs with different alignments.

❖ Create HTML document containing different heading tags.