BELC6

Learning Objectives:

The students will learn the following:

- How to create web pages using HTML.

- What are the various structural tags available to create an HTML document.

- What are the various page formatting tags available and how to use them.

10.1 Introduction to HTML

In the previous sections you learnt about Internet and web pages, whatever you have seen on the web is a document written in **HTML (Hyper Text Markup Language).** HTML is a special markup language used to create web pages. This language tells the browsers, how to display the text, images, animations and other contents of a hypertext document on the screen. The language also tells how to make a document interactive through special hyper links.

HTML is not a word processing tool or a programming language. It is only a markup or page layout and hyperlink specification language. It describes the structure of a document.

HTML - Structural Tags

DO YOU KNOW? HTML was originally derived from SGML (Standard Generalized Markup Language) a larger, complicated document processing language. To learn HTML, no need to know about SGML.

10.2 Writing HTML document

HTML is a markup language. Writing in a markup language is very simple, directly you start the text of your web document and add special tags around words and paragraphs. The tags are coded by HTML commands or keywords that indicate how web browser should format and display the content.

HTML is made up of tags and its attributes. Tags are known as elements of HTML. Additional information such as colour, alignment etc., can be included with an HTML tag is known as attribute. Attributes are used to improve the appearance of an HTML document. You cannot create your own tags to create a new style or feature.

219

All **HTML tags should be specified within angle brackets (< >).** For example, <HTML> is a tag. HTML is not case sensitive that means you can write an HTML tag in lower case or in upper case (Small letter or Capital letter). Browser treats both of them in the same manner. For example, you can write <HTML> as <html>; both are same.

10.2.1 HTML Document Structure

An HTML document contains the text of the page itself and HTML tags, which defined the structure and appearance of the document. It also contains hyperlinks to other pages or to include multimedia elements such as audio, video, animations etc. Entire HTML document is bounded within a pair of <html> and </html> tags.

All HTML documents should follow this general format
<html>   <head> 　　　　<title> My First Web Page </title>   </head>   <body> 　　　　This is my First Web Page   </body>   </html>

HTML tags are generally have an opening and closing tag surrounding the text they affect. Opening tag turn-on a feature such as heading, bold, center etc., and closing tag turn-off its features. Opening and closing tags are the same name, but closing tag name preceded by a slash (/). For example, <html> is an opening tag, </html> is a closing tab.

Every web document has two sections viz. **Heading Section** and **Body Section.** The heading section is used to show the title of a webpage in title bar or tab heading in browser. The head section should begins with **<head>** tag and end with **</head>** tag. The tag **<title>** is used to specify the title of the webpage.

The body section is used to display the main content on the browser window. The body section should defined within **<body>** and **</body>** tags. Whatever the text you specify between these tags will display on the browser window. **(Refer Figure 10.1)**
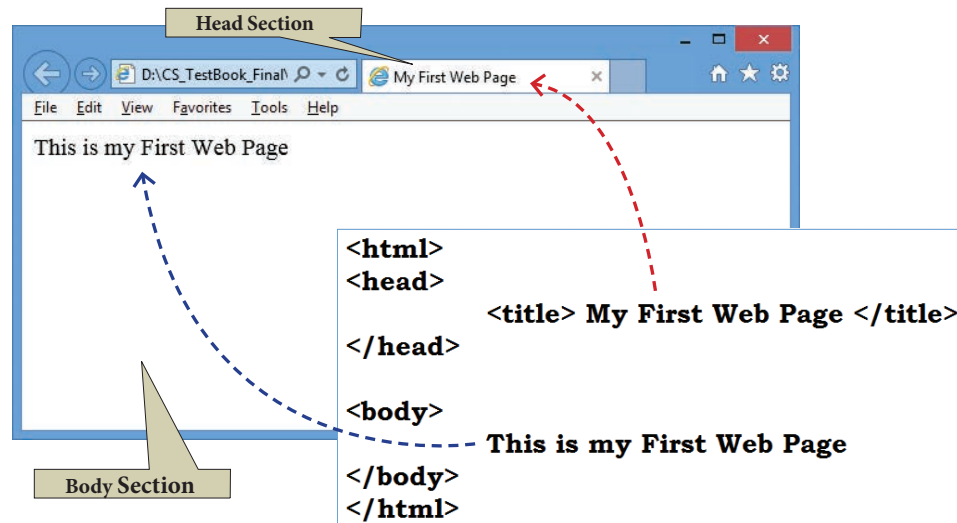
220

Figure 10.1 – Internet Explorer with my first web page

10.2.2. Structural Tags of HTML:

<html>, <head>, <title> and <body> these four tags are known as structural tags. These tags are basic essential elements to construct a web page.

Table: 10.1

Opening Tag	Closing Tag	Description
<html>	</html>	The <html> tag identified the document as an HTML document. All HTML documents should begins with <html> and end with </html>.
<head>	</head>	The <head> tag contains information about the document, including its title, scripts used, style definition and document descriptions.
<title>	</title>	The <title> tag contains the title of the document. The title specified between opening and closing tags appears in the title bar / page tab of the browser. <title> tag should be placed within <head> tag.
<body>	</body>	The <body> tag encloses all the tags, attributes and information to be displayed in the web page. <body> tag should be entered below the </head> tag.

10.2.3. HTML Writing Tools

To get started writing HTML, there is no need of web server, web hosting or even internet connection. You can write, test and link web pages without a network. To create and testing a HTML document i.e. web page need an application (text editor) to write HTML code and a browser to view them. Using a simple text editor (Notepad for Windows or getit for Linux) is a good way to learn HTML coding.

221

10.2.3.1 Creating a Webpage

Step 1: Open a text editor

Windows7 : Start → All Programs →Accessories → Notepad

Step 2: In the appearing Note pad / Text Editor, type the HTML document.

(Refer Figure 10.2)

Step 3: Save the file as HTML

Figure 10.2 – Notepad with HTML code

- Click File → Save (or) Press Ctrl + S
- Save as dialog box appears as shown in the Figure 10.3
- In "File Name" text box, type a file name with .htm or .html extension.
- Select "All Files" from "Save as type" list box.
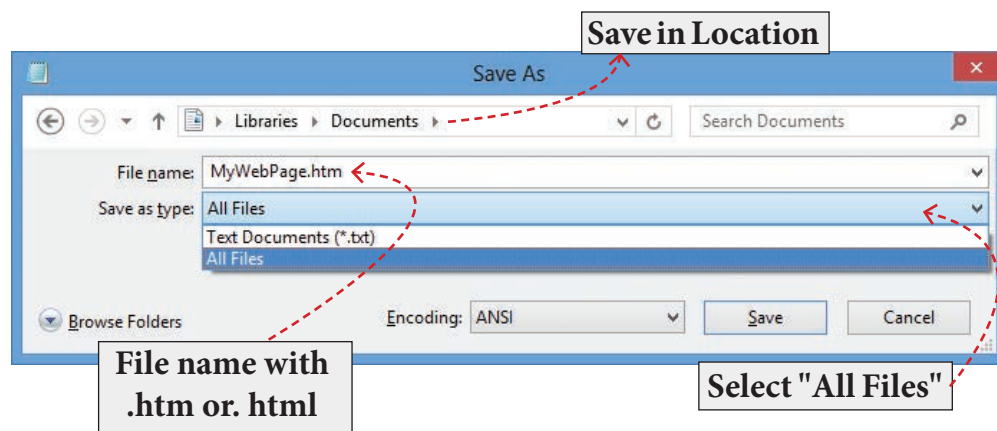- Click "Save" button.

Figure 10.3 Save As dialog box

10.2.3.2. Viewing Webpage in a Browser:

Step 1: Open a Browser (Internet Explorer / Mozilla Firefox or any)

Step 2: Click **File → Open File** (or) Press **Ctrl + O**

Step 3: From the "Open" dialog box, browse the folder in which the HTML document is saved. Choose the File name and click "Open" button. (Refer Figure 10.5)

Now, your web page is displayed in the browser.

10.2.3.3 Viewing Source file

Source file is an HTML document, what you actually type in text editor (Notepad or getit). You can view your original source file in the browser. The following steps are to be followed to view a source file.

- Right click on the browser
- Select **View Page Source (Firefox and Chrome) / View Source (Internet Explorer)** or Press **Ctrl + U** (all browser)
- Source file will be displayed.

222

- In Internet Explorer, **View → Source** is also used to open source file.

Remember that, you cannot edit the source file opened using the methods you learnt above.

10.2.3.4 Edit and Reload the source file

Source file can be edit only through the text editor. So, to edit the source file, open the source file with a text editor. **When you edit a source file, no need to close browser in which displaying the HTML document.** The following steps are to be followed to open a source file.

- Go to the folder in which your source files are located.
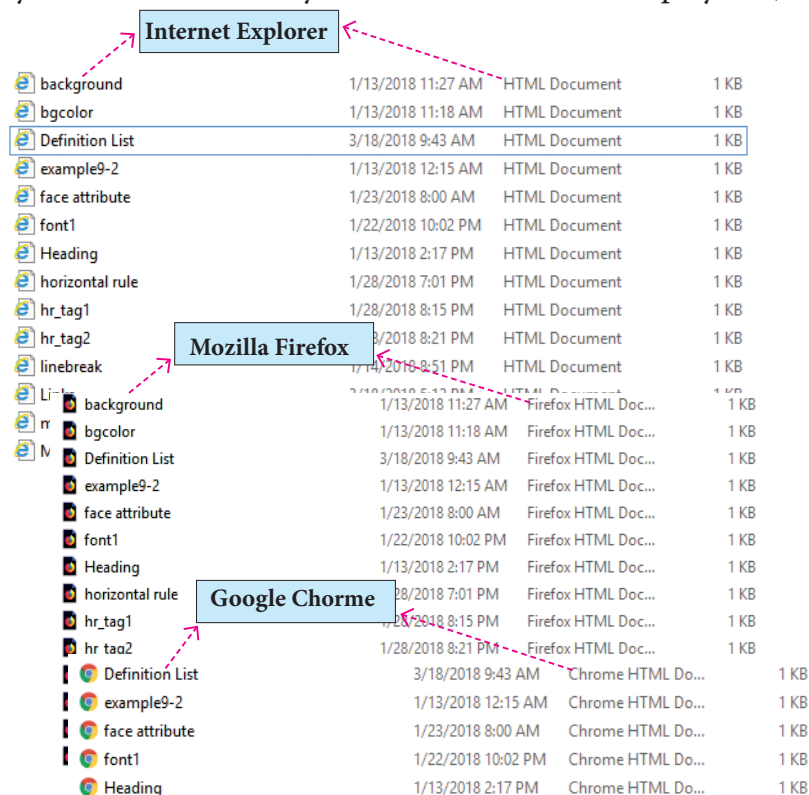- According to you default browser, your source file icon is displayed. (Refer Figure 10.7)

Figure 10.5 Source files in different browsers

- Right click on the source file that you want to edit
- From the pop-up menu, select **Open With → Notepad**
- Source file will be opened in text editor
- Make the changes and save the file using **File → Save** or **Ctrl + S.**

Reload / Refresh the changes:

- After modify and save the source file, minimize your source file.
- Go to the browser.
- Click **Refresh** (Internet Explorer) / **Reload Current Page** (Firefox) / **Reload this page** (Chrome) icons on the address bar.
- Press **Ctrl + R** or **F5** will be used to refresh / reload the modifications.

223

10.3 HTML Attributes

Attributes are special words used inside a tag to specify additional information to a tag. Attributes should be placed within the opening tag. Most of the tags support specialized attributes and there are also a few global elements that can be used with any tag. Global elements are common to all HTML elements; they can be used on all elements.

10.3.1 Attributes for Structural Tags

1. Attributes of <html> tag

The **<html>** tag is used to specify the beginning and closing of an HTML document. This tag does not have any effect on appearance of document. This is only used to make browsers and other programs, known that this is an HTML document.

<html> tag has two attributes viz. **dir** and **lang** to specify the **text direction** and **language setting** respectively.

attribute	Value to be set to attribute	Description
dir	ltr (align left-to-right) rtl (align right-to-left)	dir attribute specifies the direction of the text to be aligned within the entire document. It is global attribute. • ltr is the default value • rtl is used for Arabian languages.
lang	Predefined language code English – en Tamil – ta Telugu – te	lang attribute specify the language used with in the document. Predefined language code will be used for this purpose. Malayalam – ml; Kannada – kn; Hindi – hi; French – fr; German – de;

2. Attributes of <body> tag

The <body> tag defines the document's body. The contents of an HTML page reside within the <body> tag. <body> tag contains several attributes.

(i) Background Colour: **bgcolor = color**

` By default all the browsers display the text on white background. However, the background color of the browser can be changed by using bgcolor tag.

The tag to change background colour:

<body bgcolor = color_name/color_code>

224

Illustration 10.1 – HTML code to change background colour of a browser

```
<html>
<head>
        <title> Background Colour change </title>
</head>
        <body bgcolor = yellow>
                This is my browser with different colour
</body>
</html>
```

In the above HTML code, colour name has been used to change the background colour of the browser's body section. Generally colors in HTML are represented as six digit hexadecimal values. Colour name can be used for only few colors. But, color code (hexadecimal value) will be more flexible to handle colors.
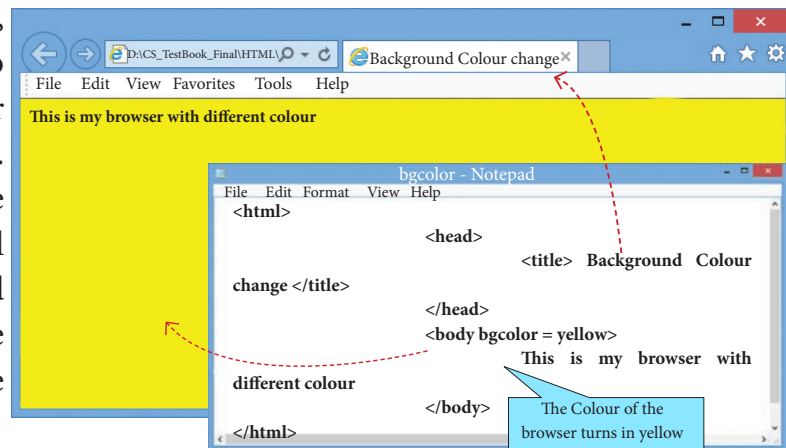
The six digit hexadecimal value is the combinations of three, two digit number sequence represent a color. First two digits represent Red, next two digits for Green and last two digits for Blue (RGB) in the range of 00 – FF. For example, 000000 is black and FFFFFF is white. FF0000 is bright red. You can try out different combinations of these values to get variety of colors.

You can use some basic color names or color code to handle colors in HTML elements. Modern browsers support nearly 140 colors. Color code should be prefixed with #. The following table shows some basic colors with their hexadecimal code.

Figure 10.5 Internet Explorer with Yellow background

Table 10.2 – Some basic Color names with code

Color Name	Hexadecimal value	Color Name	Hexadecimal value
Red	#FF0000	Olive	#808000
Blue	#0000FF	White	#FFFFFF
Green	#008000	Black	#000000
Yellow	#FFFF00	Maroon	#800000
Lime	#00FF00	Grey	#808080
Purple	#800080	Aqua	#00FFFF
Silver	#C0C0C0	Brown	#A52A2A

225

To know the complete color code visit:

https://www.w3schools.com/tags/ref_colornames.asp

The above illustration 10.1 can be re-written as follows to get the result

```
<html>
        <head>
                <title> Background Colour change </title>
        </head>
        <body bgcolor = #FFFF00>
                This is my browser with different colour
        </body>
</html>
```

(ii) Body text Colour: text = color

The default text colour of body section is "black", it is often called as automatic color. text attribute within body tag is used to change the text colour.

The tag to change body text colour:

<body text = color_name/color_code>

Illustration 10.2 – HTML code to change background and text color of a browser's body

```
<html>
        <head>
                <title> Background Colour change </title>
        </head>
        <body bgcolor = #FFFF00>
                This is my browser with different colour
        </body>
</html>
```

To the above code, text will be displayed in Red color on yellow background. You can also use colour code instead of colour name.

(iii) Background image: background=image

An image or picture can be applied as background to a webpage. When you insert an image as background, the text will be displayed on top of the image. Background images can be a texture or bitmap or even a photo.

When you insert a small image, the browser takes the image and repeats it across and down to fill browser window. Inserting animated images (GIF images) creates more interesting.

The tag to apply an image as background:

<body background = "image_name_with_extenstion">

226

Illustration 10.3 – HTML code to apply an image as background

```
<html>
<head>
        <title> Image as background </title>
</head>
        <body background = "flower01.gif">
        This is my browser with an image as background
</body>
</html>
```

While including an image as background, the image file name is not required to be in double quotes. The code **<body background = flower01.gif>** can also produce the same result.

If your image file name is long or split as two more words or along with path, should be specify within double quotes.

Remember that, if the image file and HTML source are located in different locations i.e. in different

Figure 10.6 Internet Explorer with an image as background

folder or drive, file path should be clearly specified along with image file name. In the above case, image file and HTML source file both are located within the same folder. So, path name is not mentioned.

For example, If the image file is somewhere in a folder (say Images folder in E: drive), you must specify its full path within double quotes as given below.

<body background = "E:\Images\ flower01.gif">

(iv) Setting Margins: margin = value

The margin refers the blank area from left or top edge of the browser window. Generally there is no default margin setting in any browser. If you want to leave some space as margin to left or top; **leftmargin** or **topmargin** attributes will be used respectively.

The tag to specify the left and top margin:

<body leftmargin = value topmargin = value>

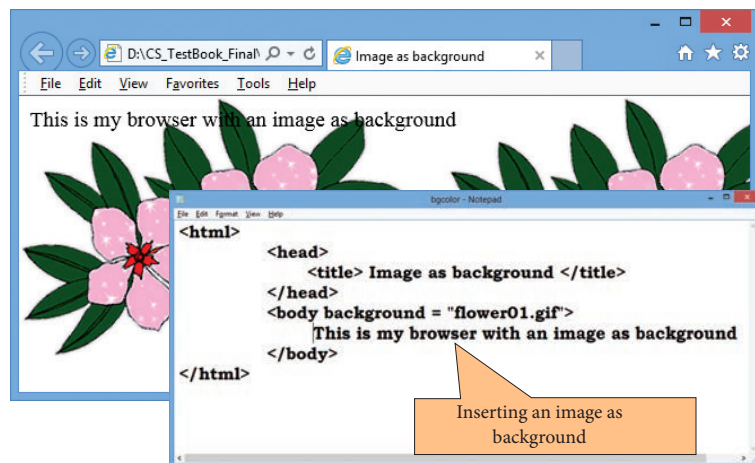The Value is referred as pixels (72 pixels to an inch)

Illustration 10.4 – HTML code to set left and top margins

```
<html>
<head>
        <title> Setting Margins </title>
</head>
        <body leftmargin = 50  topmargin = 50>
        This is my Web page with top and left margin
</body>
</html>
```

The statement <body leftmargin = 50 topmargin = 50> will intent the body text 50 pixels away from the left as well as from top edge of the browser.

Illustration 10.5 – Create a web page (HTML document) to the following specification.

• Title: My First Web Page

• Text to be display: Welcome to Computer Applications

• Background color: Lime

• Body text color: Blue

• Margin: from left and top 1 inch

```
<html>
        <head>
                <title> My First Web Page </title>
        </head>
        <body bgcolor = Lime text = blue  leftmargin = 72  topmargin = 72>
                Welcome to Computer Applications
        </body>
</html>
```

Remember that, when you use more than one attribute within an HTML element (Tag) space is used as separator.

10.4 Headings

Headings are used to include titles to sections of a web page. HTML has six levels of headings viz. **<h1>** to **<h6>**. The number with **h** indicates the level of heading. Header tags are display the body text as bolder and larger in size according to its level.

The syntax of heading tags:

<h…> Heading text </h…>

228

Illustration 10.6 – HTML code with Headings

```
<html>
        <head>
                <title> Heading </title>
</head>
<body>
        <h1> Welcome to Computer Application</h1>
        <h2> Welcome to Computer Application</h2>
        <h3> Welcome to Computer Application</h3>
        <h4> Welcome to Computer Application</h4>
        <h5> Welcome to Computer Application</h5>
        <h6> Welcome to Computer Application</h6>
</body>
</html>
```
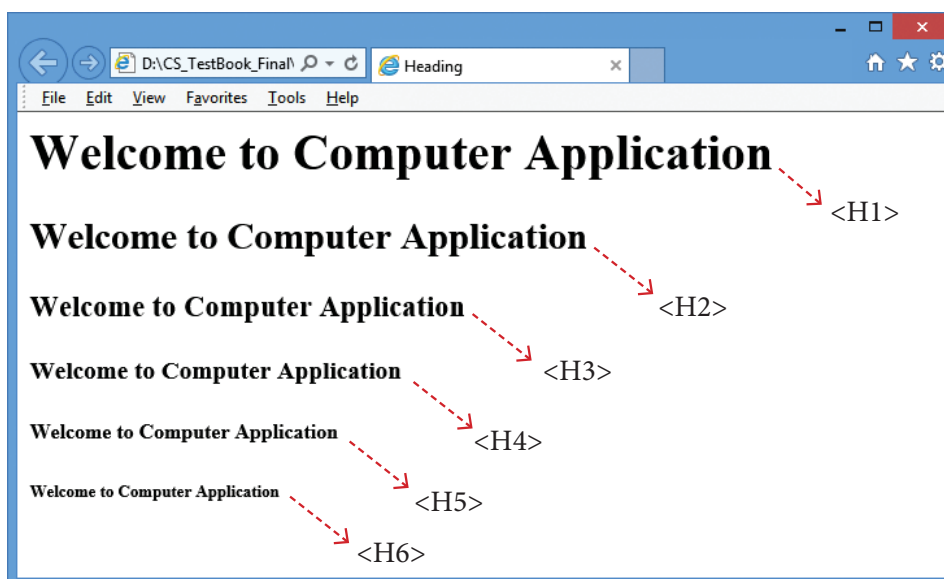

Figure10.7 – Different levels of Headings

10.4.1 Attribute of Headings tag

Align is an attribute to set right, center and justify alignment to headings. Left if the default alignment, so that it is not supported in latest version of HTML. Justify alignment is not supported by older browsers.

The tag is to specify the alignment to headings:

<h# align = value>

Where # is the level number, value may be Right, Center or Justify. Justify alignment only used for paragraphs. The meaning of alignment is similar what you learnt from Word processor.

229

Illustration 10.7 – HTML code with Heading and align attributes

```
<html>
        <head>
                <title> Heading </title>
</head>
<body>
        <h1 align=center> Welcome to Computer Application </h1>
        <h2 align=right> Welcome to Computer Application </h2>
</body>
</html>
```

10.5 Line Breaks and Paragraphs

Browser applications are having some special rules for displaying text. They do not recognize returns, tabs or even more than one space between words. If you create an HTML document with multiple lines of text, browser will display it as a single line. (Refer Figure 10.8)
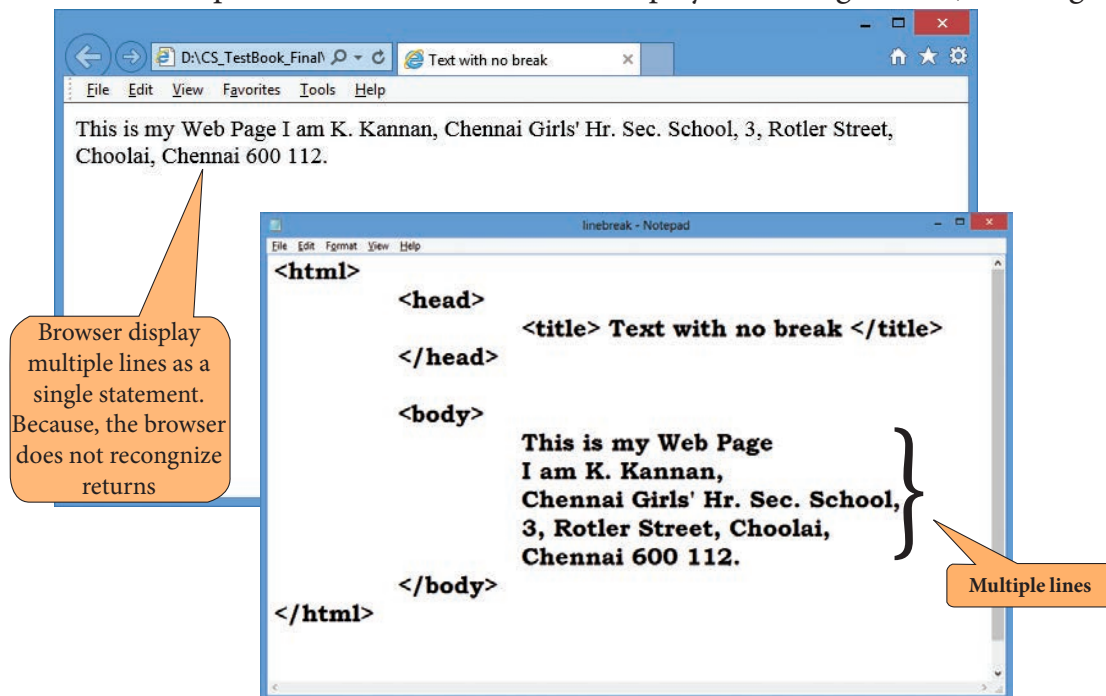

Figure 10.8 Multiline statement displayed as Single line

The <br> tag is used for line break. The <br> is an empty tag, does not have close tag and attribute. It should be placed at the end of a line. (Refer Figure 10.9)
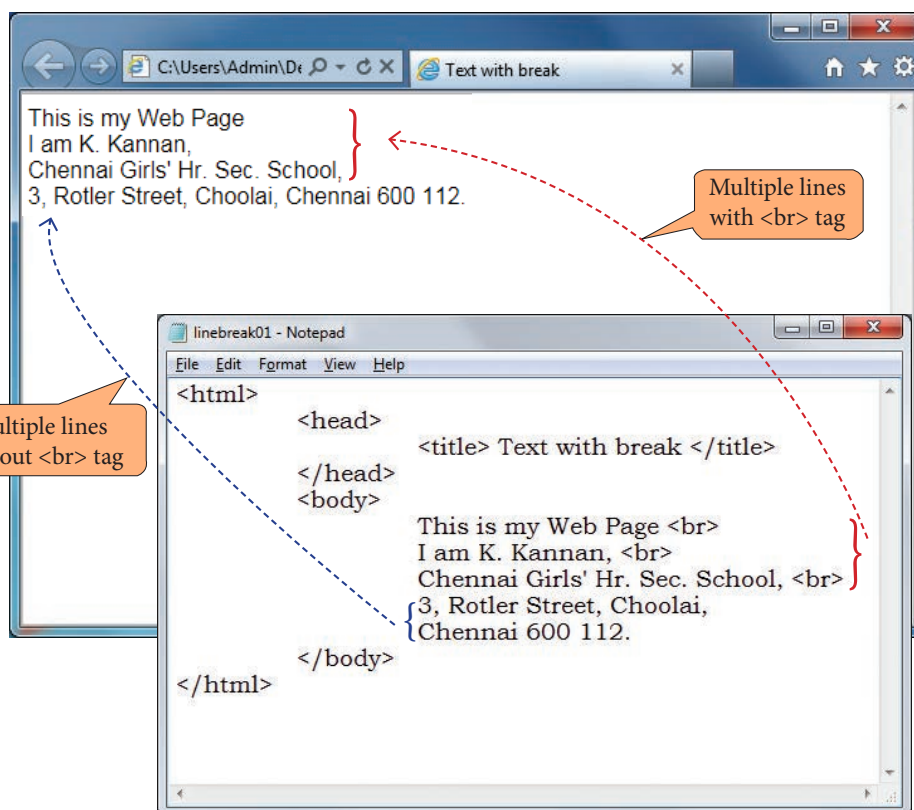
230

Figure 10.9 Usage of <br> tag

In HTML, paragraphs are created using the **<p>** tag. The content what you type between **<p>** and **</p>** is identified as a paragraph and display as a paragraph by the browser. Because, the browser does not recognize returns (Pressing "Enter" Key). Remember that in word processors, pressing "Enter" key is identifying a paragraph.

Illustration 10.8 HTML code to create a paragraph

```
<html>
        <head>
                <title> Paragraph </title>
</head>
<body>
        <h1 align=center> Business </h1>
<p> Business may be defined as any activity in which a man is
very much interested and these activities bring him profit, money,
prestige and power. </p> <p> In economic sense, the term business
means works, efforts and acts of people, which are connected with
the production of wealth and activities, which are directed with
the object of making profit.</p> <p> Production and distribution
of goods to consumers for a profit constitute business. </p>
</body>
</html>
```

231

In the above illustration, the contents specified between <p> and </p> considered as paragraph. Each paragraph displayed separately (Refer Figure 10.10).
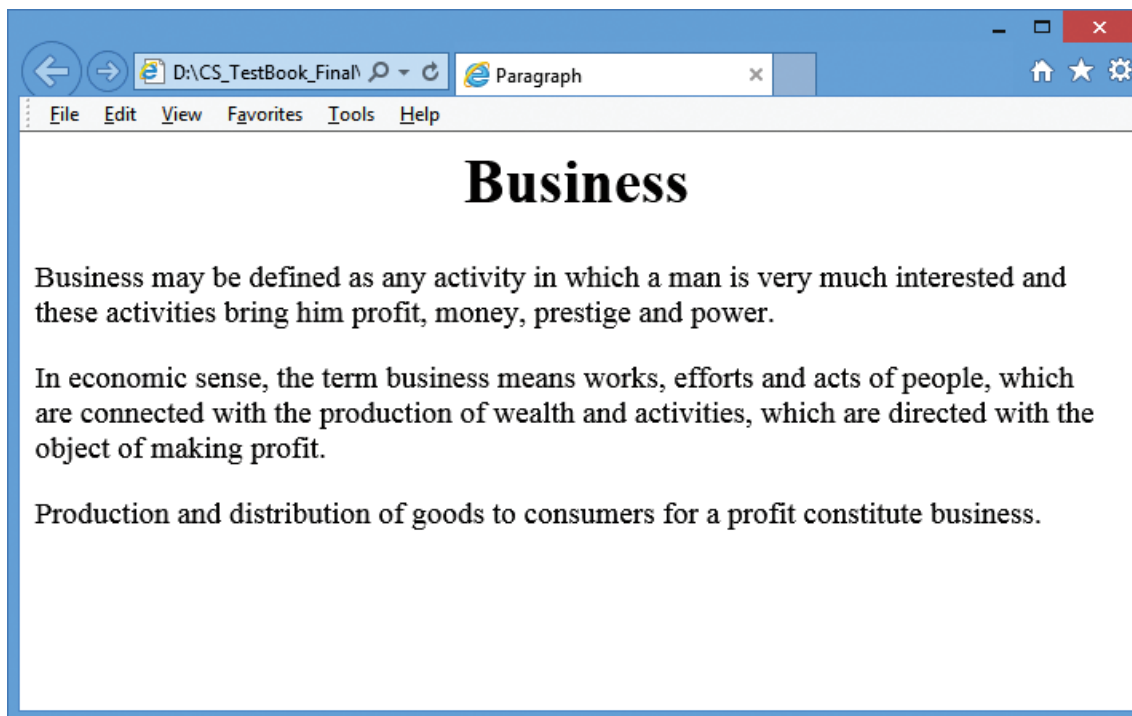

Figure 10.10 Browser with Paragraphs

Changing Paragraph alignment

You know already that the types of paragraph alignments in Word processor. In HTML documents more are four paragraph alignments viz. Left, Right, Center and Justify. The text that you type between **<p>** and **</p>** is by default aligned to left. To change the alignment of a paragraph **align** attribute can be used with **<p>** tag.

The tag to specify the alignment to paragraphs:

<p align = alignment>

Where alignment can either be **Right, Center or Justify**. Remember that, left is the default alignment.

Remember that, the keyboard shortcut to change paragraph alignment in word processor is not working in HTML.

10.6 Comments

Comments are used to describe the page or provide some kind of indication of the status of the page. The tag <!> is used to create comments. In HTML, the text what you type within this tag is considered as comments and it is ignored by the browser. Comments never show up onscreen. Comments can be placed anywhere in HTML document.

232

The general form of comments:

<! comments >

10.7 Container and Empty Elements

The HTML elements (Tags) can be classified as two types – (1) Container elements (2) Empty elements.

Container Elements:

- The tags which are required opening and closing is known as container elements or tags. For example: <html>, <body>, <title>, <p> etc.,

Empty Elements:

- The tags which are required only opening tag is known as empty elements or tags. For example:

Points to Remember:

- HTML (Hyper Text Markup Language) is a special markup language used to create web pages
- HTML is not a word processing tool or a programming language.
- HTML is made up of tags and its attributes.
- Tags are known as elements of HTML.
- Attribute is special word used inside tag to specify additional information to the tag such as color, alignment etc.
- Every web document has two sections viz. Heading Section and Body Section.
- <html>, <head>, <title> and <body> these four tags are known as structural tags
- List of HTML tags from Section-I

Table 10.3

Opening Tag	Closing Tag	Type	Function	Attributes	Contains	Used inside
<html>	</html>	Container	Delimits a complete HTML document	Dir, Lang	<head>, <body>	
<head>	</head>	Container	Defines the function header	--	<title>	<html>
<title>	</title>	Container	Defines the document title	--	Text	<head>

233

<body>	</body>	Container	Defines the document body	Background, Bgcolor, Text, Leftmargin, Topmargin	All tags that controls the appearance of body of the web p a g e	<html>
< h 1 > , <h2>.... < h 6 >	</h1>, </h2>, ... </h6>	Container	Defines one of six levels of headings	Align	Text	<body>
<p>	</p>	Container	Defines a paragraph of text	Align	Text	<body>
 	--	Empty	Insert a line break	---	---	Text

Workshop - 1

Type the following code in a text editor, save it as an html file and open in a browser. Observe and study their functions by viewing them in your browser. Then, make the required changes and look what happens.

```
<html>
<body>
<h1> Thai Pongal </h1>
<p> Pongal is a harvest festival dedicated to the Sun. It is a four-day festival which according to the Tamil calendar is usually celebrated from 14 January to 17 January. </p>
<p> Thai Pongal is one of the most important festivals celebrated by Tamil people in Tamil Nadu, Puducherry and the country of Sri Lanka, as well as Tamils worldwide, including those in Malaysia, Mauritius, South Africa, the United States, Singapore, Canada, Myanmar (Burma) and the UK. </p>
<p> Thai Pongal corresponds to Makara Sankranthi, the harvest festival celebrated throughout India. </p>
</body>
</html>
```

Carry over the following changes:

(a)   Add a suitable title

(b)   Center the heading

(c)   Change the different alignment setting for each paragraph

234

Evaluation

Part – I

Choose the correct answer

1. HTML is acronym for
   (a) Hyper Transfer Markup Language   (b) Hyper Text Markup Language
   (c) Hyper Transfer Makeup Language   (d) Hyper Text Makeup Language

2. The coded HTML keywords that indicates how web browser should format and display the content is called…….
   (a) Tags   (b) Attributes   (c) Headings   (d) Body

3. Which of the following is a special word used inside tag to specify additional information to the tag?
   (a) Tags   (b) Attributes   (c) Headings   (d) Body

4. HTML tags should be specified within:
   (a) [ ]   (b) { }   (c) ( )   (d) < >

5. An HTML document is bounded within a pair of ….. tags
   (a) <body> ……. </body>   (b) <title> ……. </title>
   (c) <html> ……. </html>   (d) <head> …… </head>

6. Which of the following symbol is used to define a closing tag?
   (a) < >   (b) %   (c) /   (d) \

7. Which section of the browser window displays the main contents?
   (a) Head   (b) Body   (c) Title   (d) Heading

8. Which of the following tag is a structural tag?
   (a) <html>   (b) <h1>   (c)
          (d) <p>

9. In HTML, colours are represented as
   (a) Binary values   (b) Octal values   (c) Decimal values   (d) Hexadecimal values

10. Which of the following symbol is used to prefix with hexadecimal value representing colour in HTML?
    (a) %   (b) #   (c) @   (d) &

11. Which of the following attribute is used to change text colour within body tag?
    (a) bgcolor   (c) background   (c) text   (d) color

12. Within body section, which of the following attribute is used to set top margin?
    (a) margin   (b) top   (c) topmargin   (d) leftmargin

235

13. How many levels of heading tags available in HTML?
    (a) 6　　　　　　(b) 4　　　　　　(c) 8　　　　　　(d) 3

14. The tag used to insert a line break:
    (a) <h1>　　　　(b)
　　　　(c) <html>　　　(d) <p>

15. The tag used to define a paragraph in HTML:
    (a) <para>　　　(b) <p>　　　　(c) <q>　　　　(d)

Part – II

Very Short Answers

1　Sandhiya is creating a webpage. She is entering HTML code on her computer. In between, she keeps pressing "Refersh" / "Reload" button on her browser. What is the purpose?

2. Explain with the help of an example the difference between container and empty elements of HTML.

3. What is the wrong in the following coding?

    <html>
    <my web page>
    <title> Welcome to my web page
    </head>

    </title>

4. How do you define comments in HTML?

5. How do you include an image as your web page background?

Part-III

Short Answers

1. Explain the attributes available with <body> tag.

2. What are the attributes available in <html> tags?

3. How do you view the source file?

4. How do you save a file as HTML file?

Part-IV

Explain in Detail

1. Write a HTML program to display your school name and address using various geading level tags.

2. Write the basic structure of a HTML program.

236

GLOSSARY

HTML	–	*Hyper Text Markup Language used to create web pages.*
Tag	–	*A coded HTML command. It is also called as element.*
Attribute	–	*Special word, carrying special meaning used inside on HTML tag.*
Heading Section	–	*Refers title bar of a browser.*
Body Section	–	*Refers main client area of a browser.*
Browser	–	*An application to view web pages or web sites.*
Web Page	–	*An Online page contains hypertext.*
Hypertext	–	*Text which contains links to other texts.*
Text Editor	–	*An application used to type and modifies text contents, but it is not a word processor.*
Word Processor	–	*An application used to create and manipulate text documents.*
Notepad	–	*A default text editor available with Windows.*
Getit	–	*A default text editor available with Linux.*
Windows	–	*Familiar GUI Operating system developed by Microsoft.*
Linux	–	*Familiar Open Source operating system.*
Internet Explorer	–	*A browser available with Windows.*
Mozilla Firefox	–	*A default browser available with Linux. Open Source Third party browser can be installed in windows.*
Chrome	–	*A familiar web browser developed by Google.*

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