Unit1 HTML BASICS

At the end of this unit, the learner should be able to:

- correctly use basic and advanced HTML tags
- design HTML forms

Introduction

HTML stands for **H**yper**t**ext **M**arkup **L**anguage, and it is the most widely used language to write Web Pages.

- **Hypertext** refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.
- As its name suggests, HTML is a **Markup Language** which means you use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.

Originally, HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.Now, HTML is being widely used to format web pages with the help of different tags available in HTML language.

Basic HTML Document

In its simplest form, following is an example of an HTML document

```
<!DOCTYPE html>
<html>

   <head>
      <title>This is document title</title>
   </head>

   <body>
      <h1>This is a heading</h1>
      <p>Document content goes here.....</p>
   </body>

</html>
```

HTML Tags

As told earlier, HTML is a markup language and makes use of various tags to format the content. These tags are enclosed within angle braces **<Tag Name>**. Except few tags, most of the tags have their corresponding closing tags. For example, **<html>** has its closing tag **</html>** and **<body>** tag has its closing tag **</body>** tag etc. Above example of HTML document uses the following tags:

<!DOCTYPE...> This tag defines the document type and HTML version. CurrentS version is 5.

<html> This tag encloses the complete HTML document and mainly comprises of document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags.

<head> This tag represents the document's header which can keep other HTML tags like <title>, <link> etc.

<title> The <title> tag is used inside the <head> tag to mention the document title.

<body> This tag represents the document's body which keeps other HTML tags like <h1>, , <p> etc.

<h1> This tag represents the heading.
** ** This tag represents a paragraph.
Basic Tags

Heading Tags

Any document starts with a heading. You can use different sizes for your headings. HTML also has six levels of headings, which use the elements **<h1>, <h2>, <h3>, <h4>, <h5>,** and **<h6>**. While displaying any heading, browser adds one line before and one line after that heading.

Paragraph Tag

The ** ** tag offers a way to structure your text into different paragraphs. Each paragraph of text should go in between an opening and a closing

Line Break Tag

Whenever you use the **
** element, anything following it starts from the next line. This tag is an example of an **empty** element, where you do not need opening and closing tags, as there is nothing to go in between them. The
 tag has a space between the characters **br** and the forward slash. If you omit this space, older browsers will have trouble rendering the line break, while if you miss the forward slash character and just use
 it is not valid in XHTML.

Horizontal Lines

Horizontal lines are used to visually break-up sections of a document. The **<hr>** tag creates a line from the current position in the document to the right margin and breaks the line accordingly. Again **<hr />** tag is an example of the **empty** element, where you do not need opening and closing tags, as there is nothing to go in between them. The **<hr />** element has a space between the characters **hr** and the forward slash.

Preserve Formatting

Sometimes, you want your text to follow the exact format of how it is written in the HTML document. In these cases, you can use the preformatted tag **<pre>**. Any text between the opening **<pre>** tag and the closing **</pre>** tag will preserve the formatting of the source document.

HTML elements

An **HTML element** is defined by a starting tag. If the element contains other content, it ends with a closing tag, where the element name is preceded by a forward slash. So here ** .... ** is an HTML element, **<h1>...</h1>** is another HTML element. There are some HTML elements which don't need to be closed, such as **<img.../>**, **<hr />** and **
** elements. These are known as **void elements**. HTML documents consists of a tree of these elements and they specify how HTML documents should be built, and what kind of content should be placed in what part of an HTML document.

HTML tags vs. Elements

An HTML element is defined by a *starting tag*. If the element contains other content, it ends with a *closing tag*. For example, ** ** is starting tag of a paragraph and ** ** is closing tag of the same paragraph but ** This is paragraph ** is a paragraph element.

Nested HTML Elements

It is very much allowed to keep one HTML element inside another HTML element. When creating a table or a list this can be illustrated.

HTML attributes

An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts − a **name** and a **value**

- The **name** is the property you want to set. For example, the paragraph **<p>** element in the example carries an attribute whose name is **align**, which you can use to indicate the alignment of paragraph on the page.
- The **value** is what you want the value of the property to be set and always put within quotations. The below example shows three possible values of align attribute: **left, center** and **right**.

Attribute names and attribute values are case-insensitive. However, the World Wide Web Consortium (W3C) recommends lowercase attributes/attribute values in their HTML 4 recommendation.

Core attributes

The four core attributes that can be used on the majority of HTML elements (although not all) are: **Id , Title, Class, Style.**

The Id attribute

The **id** attribute of an HTML tag can be used to uniquely identify any element within an HTML page. There are two primary reasons that you might want to use an id attribute on an element −

- If an element carries an id attribute as a unique identifier, it is possible to identify just that element and its content.
- If you have two elements of the same name within a Web page (or style sheet), you can use the id attribute to distinguish between elements that have the same name.

The title attribute

The **title** attribute gives a suggested title for the element. They syntax for the **title** attribute is similar as explained for **id** attribute. The behavior of this attribute will depend upon the element that carries it, although it is often displayed as a tooltip when cursor comes over the element or while the element is loading.

The class attribute

The **class** attribute is used to associate an element with a style sheet, and specifies the class of element. The value of the attribute may also be a space-separated list of class names.

The style attribute

The style attribute allows you to specify Cascading Style Sheet (CSS) rules within the element.

Internationalization attributes

There are three internationalization attributes, which are available for most (although not all) XHTML elements: dir, lang, xml:lang.

The dir attribute

The **dir** attribute allows you to indicate to the browser about the direction in which the text should flow. The dir attribute can take one of two values, as follows: ltr(the default value) and rtl(for languages such as Hebrew or Arabic that are read right to left).

The lang attribute

The **lang** attribute allows you to indicate the main language used in a document, but this attribute was kept in HTML only for backwards compatibility with earlier versions of HTML. This attribute has been replaced by the **xml:lang** attribute in new XHTML documents.

HTML formatting

If you use a word processor, you must be familiar with the ability to make text bold, italicized, or underlined; these are just three of the ten options available to indicate how text can appear in HTML and XHTML.

Bold text

Anything that appears within **...** element, is displayed in bold.

Italic text

Anything that appears within **...** element is displayed in italicized.

Underlined text

Anything that appears within **<u>...</u>** element, is displayed with underline.

Grouping content

The ** ** and **** elements allow you to group together several elements to create sections or subsections of a page.

Insert image

You can insert any image in your web page by using **<img>** tag. Following is the simple syntax to use this tag.

```
<img src = "Image URL" ... attributes-list/>
```

The <img> tag is an empty tag, which means that, it can contain only list of attributes and it has no closing tag.

HTML tables

The HTML tables allow web authors to arrange data like text, images, links, other tables, etc. into rows and columns of cells. The HTML tables are created using the **<table>** tag in which the **<tr>** tag is used to create table rows and **<td>** tag is used to create data cells. The elements under <td> are regular and left aligned by default.

Cellpadding and cell spacing attributes

There are two attributes called *cellpadding* and *cellspacing* which you will use to adjust the white space in your table cells. The cellspacing attribute defines space between table cells, while cellpadding represents the distance between cell borders and the content within a cell.

Colspan and Rowspan attributes

You will use **colspan** attribute if you want to merge two or more columns into a single column. Similar way you will use **rowspan** if you want to merge two or more rows.

Tables Backgrounds

You can set table background using one of the following two ways:

- **bgcolor** attribute:You can set background color for whole table or just for one cell.
- **background** attribute:You can set background image for whole table or just for one cell.

You can also set border color also using **bordercolor** attribute.

HTML Lists

HTML offers web authors three ways for specifying lists of information. All lists must contain one or more list elements. Lists may contain:

- **<ul>** − An unordered list. This will list items using plain bullets.
- **<ol>** − An ordered list. This will use different schemes of numbers to list your items.
- **<dl>** − A definition list. This arranges your items in the same way as they are arranged in a dictionary.

The attribute type

You can use **type** attribute for <ul> tag to specify the type of bullet you like. By default, it is a disc. Following are the possible options:

```
<ul type = "square">
<ul type = "disc">
<ul type = "circle">
```

You can use **type** attribute for <ol> tag to specify the type of numbering you like. By default, it is a number. Following are the possible options:

```
<ol type = "1"> - Default-Case Numerals.
<ol type = "I"> - Upper-Case Numerals.
<ol type = "i"> - Lower-Case Numerals.
<ol type = "A"> - Upper-Case Letters.
<ol type = "a"> - Lower-Case Letters.
```

You can use **start** attribute for <ol> tag to specify the starting point of numbering you need. Following are the possible options:

```
<ol type = "1" start = "4">    - Numerals starts with 4.
<ol type = "I" start = "4">    - Numerals starts with IV.
<ol type = "i" start = "4">    - Numerals starts with iv.
<ol type = "a" start = "4">    - Letters starts with d.
<ol type = "A" start = "4">    - Letters starts with D.
```

Text Links

A webpage can contain various links that take you directly to other pages and even specific parts of a given page. These links are known as hyperlinks. Hyperlinks allow visitors to navigate between Web sites by clicking on words, phrases, and images. Thus you can create hyperlinks using text or images available on a webpage. A link is specified using HTML tag <a>. This tag is called **anchor tag** and anything between the opening <a> tag and the closing tag becomes part of the link and a user can click that part to reach to the linked document. Following is the simple syntax to use <a> tag.

```
<a href = "Document URL" ... attributes-list>Link Text</a>
```

HTML forms

HTML Forms are required, when you want to collect some data from the site visitor. For example, during user registration you would like to collect information such as name, email address, credit card, etc. A form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc. The back-end application will perform required processing on the passed data based on defined business logic inside the application. There are various form elements available like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc. The HTML **<form>** tag is used to create an HTML form and it has following syntax.

```
<form action = "Script URL" method = "GET|POST">
   form elements like input, textarea etc.
</form>
```

Form attributes

Apart from common attributes, following is a list of the most frequently used form attributes

action

Backend script ready to process your passed data.

method

Method to be used to upload data. The most frequently used are GET and POST methods.

target

Specify the target window or frame where the result of the script will be displayed. It takes values like _blank, _self, _parent etc.

Text input controls

There are three types of text input used on forms:

- **Single-line text input controls** − This control is used for items that require only one line of user input, such as search boxes or names. They are created using HTML **<input>** tag.
- **Password input controls** − This is also a single-line text input but it masks the character as soon as a user enters it. They are also created using HTMl <input> tag.
- **Multi-line text input controls** − This is used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML **<textarea>** tag.

Single-line text input controls

This control is used for items that require only one line of user input, such as search boxes or names. They are created using HTML <input> tag.

Attributes

Following is the list of attributes for <input> tag for creating text field.

Type: Indicates the type of input control and for text input control it will be set to **text**.

Name: Used to give a name to the control which is sent to the server to be recognized and get the value.

Value: This can be used to provide an initial value inside the control.

Size: Allows to specify the width of the text-input control in terms of characters.

Maxlength: Allows to specify the maximum number of characters a user can enter into the text box.

Password inputs controls

This is also a single-line text input but it masks the character as soon as a user enters it. They are also created using HTML <input>tag but type attribute is set to **password**.

Attributes

Following is the list of attributes for <input> tag for creating password field.

Type: Indicates the type of input control and for password input control it will be set to **password**.

Name: Used to give a name to the control which is sent to the server to be recognized and get the value.

Value: This can be used to provide an initial value inside the control.

Size: Allows to specify the width of the text-input control in terms of characters.

Maxlength: Allows to specify the maximum number of characters a user can enter into the text box.

Multiple-line text input controls

This is used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML <textarea> tag.

Attributes

Following is the list of attributes for <textarea> tag.

Name: Used to give a name to the control which is sent to the server to be recognized and get the value.

Rows: Indicates the number of rows of text area box.

Cols: Indicates the number of columns of text area box

Checkbox Control

Checkboxes are used when more than one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to **checkbox.**.

Attributes

Following is the list of attributes for <checkbox> tag.

Type: Indicates the type of input control and for checkbox input control it will be set to **checkbox.**.

name: Used to give a name to the control which is sent to the server to be recognized and get the value.

Value: The value that will be used if the checkbox is selected.

Checked: Set to *checked* if you want to select it by default.

Radio Button control

Radio buttons are used when out of many options, just one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to **radio**.

Following is the list of attributes for radio button.

Type: Indicates the type of input control and for checkbox input control it will be set to radio.

Name: Used to give a name to the control which is sent to the server to be recognized and get the value.

Value: The value that will be used if the radio box is selected.

Checked: Set to *checked* if you want to select it by default.

Select box control

A select box, also called drop down box which provides option to list down various options in the form of drop down list, from where a user can select one or more options.

Following is the list of important attributes of <select> tag:

name: Used to give a name to the control which is sent to the server to be recognized and get the value.

Size: This can be used to present a scrolling list box.

Multiple: If set to "multiple" then allows a user to select multiple items from the menu.

Following is the list of important attributes of <option> tag:

value: The value that will be used if an option in the select box box is selected.

Selected: Specifies that this option should be the initially selected value when the page loads.

Label: An alternative way of labeling options

Button controls

There are various ways in HTML to create clickable buttons. You can also create a clickable button using <input>tag by setting its type attribute to **button**. The type attribute can take the following values.

Submit: This creates a button that automatically submits a form.

Reset: This creates a button that automatically resets form controls to their initial values.

Button: This creates a button that is used to trigger a client-side script when the user clicks that button.

Image: This creates a clickable button but we can use an image as background of the button.

Hidden form controls

Hidden form controls are used to hide data inside the page which later on can be pushed to the server. This control hides inside the code and does not appear on the actual page. For example, following hidden form is being used to keep current page number. When a user will click next page then the value of hidden control will be sent to the web server and there it will decide which page will be displayed next based on the passed current page.