WEB DESIGN

using

HTML

**Computer Network and the Internet**

A computer network is a set of computers sharing resources located on or provided by network nodes (computers). The internet is an example of computer network; it is the largest computer network known and linked together all over the world. Computers use communication protocols over digital interconnections to communicate. Communication usually uses the client-server paradigm. Client-server is a relationship in which one program, the client, requests a service or resource from another program, the server.

**Websites**

A website is a collection of interlinked web pages available from a base address on the internet (or some other network). The collection of all websites on the internet is referred to as the world wide web.

A web page (or webpage) is document on the World Wide Web. The term "web page" is a metaphor of paper pages bound together into a book.

Web pages are delivered by a web server to the user and displayed in a web browser; so a website consists of many web pages linked together under a common domain name.

In general, a domain name identifies resources and services provided from a given network Internet Protocol (IP) Address.

**HTTP**

The Hypertext Transfer Protocol (HTTP) is a protocol in the Internet protocol suite model for providing distributed, collaborative, hypermedia information systems.

HTTP comes from the term Hypertext. Hypertext is text displayed on a computer display or other electronic devices with references (hyperlinks) to Hypertext documents

other documents that the reader can immediately access, for example by a mouse click or by tapping the screen in a web browser.

Hypermedia, an extension of the term hypertext, is a medium of information that includes graphics, audio, video, plain text and hyperlinks. This designation contrasts with the broader term multimedia, which include non-interactive linear presentations (as well as hypermedia)

HTTP functions as a request–response protocol in the client–server model. A web browser, for example, may be the client whereas a process, named web server, running on a computer hosting one or more websites will be the server. The client submits an HTTP request message to the server. The server, which provides resources to the client, returns a response message to the client.

**HTML**

HTML is the standard markup language for creating Web pages.

Markup language is a text-encoding system consisting of a set of symbols which inserted in a text document controls its structure, formatting, or the relationship between its parts. Markup is often used to control the display of the document or to enrich its content to facilitating automated processing.

What is HTML?

HTML stands for Hyper Text Markup Language

HTML is the standard markup language for creating Web pages

HTML describes the structure of a Web page

HTML consists of a series of elements

HTML elements tell the browser how to display the content

Think of HTML elements as a way of labeling parts of the content of a web page such as:

i. "this is a heading"

ii. "this is a paragraph", "this is a link", etc.

Iii. Picture xyz goes here

Example

<!DOCTYPE html>

<html>

<head>

<title>Page Title</title>

</head>

<body>

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>

</html>

Explanation:

The <!DOCTYPE html> declaration defines that this document is an HTML5 document

The <html> element is the root element of an HTML page

The <head> element contains information about the HTML page(meta-information)

The <title> element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)

The <body> element defines the body of the document; it contains all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.

The <h1> element defines a large heading

The <p> element defines a paragraph

**What is an HTML Element?**

An HTML element is defined by a start tag, some content, and an end tag:

<tagname> Content goes here... </tagname>

The HTML element is everything from the start tag to the end tag:

<h1>My First Heading</h1>  
<p>My first paragraph.</p>  
<br>

|  |  |  |
| --- | --- | --- |
| Start tag | Element content | End tag |
| <h1> | My First Heading | </h1> |
| <p> | My first paragraph. | </p> |
| <br> | none | none |

Note: Some HTML elements have no content (like the <br> element). These elements are called empty elements. Empty elements do not have an end tag!

HTML Lists  
  
A list is a number of connected/related items written or printed consecutively, typically one below the other. HTML lists allow web developers to group a set of related items in lists.

Unordered HTML List  
An unordered list starts with the <ul> tag. Each list item starts with the <li> tag. The list items will be marked with bullets (small black circles) by default:

Example

<ul>  
 <li>Coffee</li>  
 <li>Tea</li>  
 <li>Milk</li>  
</ul>

Ordered HTML List  
An ordered list starts with the <ol> tag. Each list item starts with the <li> tag. The list items will be marked with numbers by default:  
  
Example

<ol>  
 <li>Coffee</li>  
 <li>Tea</li>  
 <li>Milk</li>  
</ol>

HTML supports description lists.

A description list is a list of terms, with a description of each term. The <dl> tag defines the description list, the <dt> tag defines the term (name), and the <dd> tag describes each term:

Example  
<dl>  
<dt>Coffee</dt>  
<dd>- black hot drink</dd>  
<dt>Milk</dt>  
<dd>- white cold drink</dd>  
</dl>

HTML Entities

Character entities are used to display reserved characters in HTML:

Some characters are reserved in HTML. If you use the less than (<) or greater than (>) signs in your text, the browser might mix them up with tags.

Reserved characters in HTML must be replaced with entities.

&entity\_name;

OR

&#entity\_number;

To display a less than sign (<) we must write: &lt; or &#60;

An entity names are easier to remember than entity numbers, however some browsers may not support all entity names, but support entity numbers.

Non-breaking Space

A commonly used entity in HTML is the non-breaking space: &nbsp;

A non-breaking space is a space that will not break into a new line. If you write 10 spaces in your text, the browser will remove 9 of them . To add real spaces to your text, you can use the &nbsp; character entity.

(Note: <pre>..</pre> tag can be used to prevent removal of extra spaces from the content enclosed by it)

**Pictures**

The <img> tag is used to embed an image in an HTML page.

Images are not technically inserted into a web page; images are linked into web pages. The <img> tag creates a space to render the referenced image.

The <img> tag has two required attributes:

src - Specifies the path to the image

alt - Specifies an alternate text for the image, if the image for some reason cannot be displayed

**Media**

Apart from images, HTML 5 also supports video and audio media.

The <video> tag is used to embed video content in a document, such as a movie clip or other video streams.

The <video> tag contains one or more <source> tags with different video sources. The browser will choose the first source it supports.

The text between the <video> and </video> tags will only be displayed in browsers that do not support the <video> element.

<video width="320" height="240" controls>

<source src="movie.mp4" type="video/mp4">

<source src="movie.ogg" type="video/ogg">

Your browser does not support the video tag.

</video>

There are three supported video formats in HTML: MP4, WebM, and OGG.

|  |  |  |  |
| --- | --- | --- | --- |
| Browser | MP4 | WebM | Ogg |
| Edge | YES | YES | YES |
| Chrome | YES | YES | YES |
| Firefox | YES | YES | YES |
| Safari | YES | YES | NO |
| Opera | YES | YES | YES |

## Optional Attributes

|  |  |  |
| --- | --- | --- |
| Attribute | Value | Description |
| [autoplay](https://www.w3schools.com/tags/att_video_autoplay.asp) | autoplay | Specifies that the video will start playing as soon as it is ready |
| [controls](https://www.w3schools.com/tags/att_video_controls.asp) | controls | Specifies that video controls should be displayed (such as a play/pause button etc). |
| [height](https://www.w3schools.com/tags/att_video_height.asp) | *pixels* | Sets the height of the video player |
| [loop](https://www.w3schools.com/tags/att_video_loop.asp) | loop | Specifies that the video will start over again, every time it is finished |
| [muted](https://www.w3schools.com/tags/att_video_muted.asp) | muted | Specifies that the audio output of the video should be muted |
| [poster](https://www.w3schools.com/tags/att_video_poster.asp) | URL | Specifies an image to be shown while the video is downloading, or until the user hits the play button |
| [preload](https://www.w3schools.com/tags/att_video_preload.asp) | auto metadata none | Specifies if and how the author thinks the video should be loaded when the page loads |
| [src](https://www.w3schools.com/tags/att_video_src.asp) | *URL* | Specifies the URL of the video file |
| [width](https://www.w3schools.com/tags/att_video_width.asp) | *pixels* | Sets the width of the video player |

**HTML Iframes**

An HTML iframe is used to display a web page within a web page.

Syntax

<iframe src="url" title="description"></iframe>

Iframe - Set Height and Width

Use the height and width attributes to specify the size of the iframe.

The height and width are specified in pixels by default:

<iframe src="demo\_iframe.htm" height="200" width="300" title="Iframe Example"></iframe>

**The <form> Element**

The HTML <form> element is used to create an HTML form for user input:

The <form> element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

All the different form elements are covered in this chapter: HTML Form Elements.

**The <input> Element**

The HTML <input> element is the most used form element.

An <input> element can be displayed in many ways, depending on the type attribute.

Here are some examples:

|  |  |
| --- | --- |
| Type | Description |
| <input type="text"> | Displays a single-line text input field |
| <input type="radio"> | Displays a radio button (for selecting one of many choices) |
| <input type="checkbox"> | Displays a checkbox (for selecting zero or more of many choices) |
| <input type="submit"> | Displays a button for submitting the form |
| input type="button"> | Displays a clickable button |

The "name" attribute is needed to reference the input data after the form is submitted (if you omit the name attribute, no data from the input will be submitted).

**HTML <select> Tag**

The <select> element is used to create a drop-down list.

The <select> element is most often used in a form, to collect user input.

The "name" attribute is needed to reference the form data after the form is submitted (if you omit the name attribute, no data from the drop-down list will be submitted).

The <option> tags inside the <select> element define the available options in the drop-down list.

Example:

Create a drop-down list with four options:

<select name="cars" id="cars">

<option value="volvo">Volvo</option>

<option value="saab">Saab</option>

<option value="mercedes">Mercedes</option>

<option value="audi">Audi</option>

</select>