# 13. HTML (Hypertext Markup Language) and XHTML (Extensible HTML)

#### a) HTML

- HTML stands for Hypertext Markup Language and is the language is used to create web page.
- HTML currently using the version HTML 5.
- HTML with the HTTP protocol that has made the web a major applications on the Internet
- Hyperlink: It is any kind of text that has links embedded in it.
- Eg:- google.com embedded in to Google text.
- This links point to other documents or to other parts of the same document, or file anywhere on the web.
- HTML document can contain text, images, audios, videos and etc.
- HTML pages are transformed by one machine to other using HTTP protocol
- HTML pages saved on the system by using .html or .htm extension

Format:- **filename.html** or **filename.htm**Example:- **program1.html** or **program1.htm** 

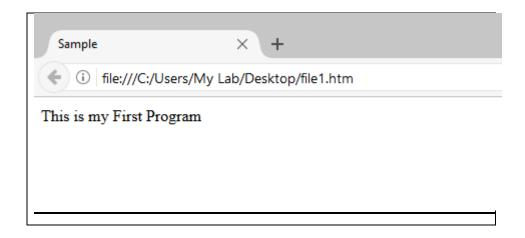
- The format of HTML page is all instruction write between opening (<) and closing(>)
- Sample Program:

```
sample - Notepad — X

File Edit Format View Help

<!DOCTYPE html>
<head>
<title>Sample</title>
</Head>

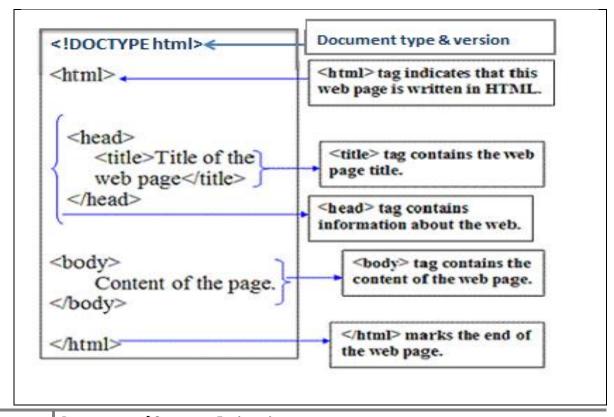
<body>
    This is my First Program
</body>
</html>
```



## b) XHTML (Extensible HTML)

- XHTML almost same as HTML
- XHTML Stricter than HTML
- XHTML is HTML defined as XML application
- XHTML is supported by all browser.
- Why XHTML?:- Many HTML contain bad HTML.
- If any missing tag the output shows error result.

#### Format / Structure of HTML Page 14.



#### I. <HTML> ... </HTML>

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

#### II. The <!DOCTYPE> Declaration

- The <!DOCTYPE html> declaration tag is used by the web browser to understand the version of the HTML used in the document.
- Current version of HTML is 5 and it makes use of the following

#### III. <HEAD> ... </HEAD>

- <HEAD> elements do not directly affect the look of the document.
- The <head> element contains meta information about the document.
- The <head> element can include a title for the document, scripts, styles, meta information, and more.
- The following elements are related to the head element. They can be used to provide important information to the browser

<base/>	Allows base address of HTML document to be specified.  base href="https://www.google.com" />
<link/>	Indicate relationships between documents <li><li><li>k rel="stylesheet" type="text/css" href="theme.css"&gt;</li> </li></li>
<title>&lt;/th&gt;&lt;th&gt;Specifies title of the document. Eg: &lt;TITLE&gt;Sample</title>	
<meta/>	Provide information about HTML document. <meta content="Free Web tutorials" name="description"/>

• Above tags will not be displayed on the page

#### IV. <BODY> ... </BODY>

 The <BODY> of a HTML document contains all the text and images that make up the page, together with all the HTML elements that provide the control/formatting of the page.

## 15. HTML Elements

- A HTML element is an individual component of an HTML document or web page.
- A HTML element usually consists of a start tag and end tag, with the content inserted in between:

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

Start Tag	Content	End Tag
<	This is paragraph Content	
<h1></h1>	This is heading content	
<div></div>	This is division content	

# 16. HTML Attributes

- We have seen few HTML tags and their usage like heading tags <h1>, <h2>, paragraph tag and other tags.
- We used them so far in their simplest form, but most of the HTML tags can also have attributes, which are extra bits of information.
- 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:

## **Attribute Properties**

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



## 17. HTML Basic Tags

The below tags are we commonly using in HTML.

## a) **Heading Tags**

- The <h1> to <h6> tags are used to define HTML headings.
- <h1> defines the most important heading. <h6> defines the least important heading.
- Search engines use the headings to index the structure and content of your web pages.

```
<!DOCTYPE html>
                                          This is heading 1
<html>
<body>
<h1>This is heading 1</h1>
                                          This is heading 2
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
                                          This is heading 3
<h4>This is heading 4</h4>
<h5>This is heading 5</h5>
<h6>This is heading 6</h6>
                                          This is heading 4
</body>
                                          This is heading 5
</html>
                                          This is heading 6
```

## b) Paragraph Tag

- The <P> tag offers a way to structure your text into different paragraphs.
- Each paragraph of text should go in between an opening <P> and a closing </P> tag as shown below in the example.

## c) Line Break Tag

- The <br/>br> tag inserts a single line break.
- The <br/>br> tag is an empty tag which means that it has no end tag.

• The HTML <br/>
<br/>
element produces a line break in text (carriage-return).

```
<!DOCTYPE html>
<html>
<body>

To break lines
in a text,
use the br element.

</body>
</body>
</html>
```

## d) Centering Content Tag

 You can use <CENTER> </CENTER>tag to put any content in the center of the page or any table cell.

## e) <u>Horizontal Lines Tag</u>

- 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.

## f) Preserve formatting Tag

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

## g) Non Breaking Spaces

- You don't not want the client browser to break text; you should use a nonbreaking space
- Entity &nbsp instead of normal space.

```
<!DOCTYPE html>
                                                        This is some text.
<html>
<body>
                                                                                                This text will be center-aligned.
This is some text.
                                                        This is some text.
<center>This text will be center-aligned.
This is some text.
                                                                function testfunction(strText){
<hr>>
                                                                       alert(strText);
<
   function testfunction(strText){
                                                        An example of nonbreaking spaces.... "12 Angry men"
       alert(strText);
<hr>>
An example of nonbreaking spaces.... "12 Angry
men"
</body>
</html>
```

## h) Formatting Tags

- If you use a word processor, you must be familiar with the ability to make text bold, italicized, or underlined.
- Formatting tags indicate how text can appear in HTML.

Tags	Format Name	Description
<b></b>	Bold Text	Anything that appears within <b></b> , is displayed in bold.
<i>:</i>	Italic Text	Anything that appears within <i></i> , is displayed in italicized.
<u></u>	Underlined Text	Anything that appears within <u></u> , is displayed with underline.

<strike></strike>	Strike Text	Anything that appears within <strike></strike> , is displayed with strikethrough
<tt></tt>	Teletype Text	Anything that appears within <tt></tt> , is displayed in teletype text
<sup></sup>	Superscript Text	Anything that appears within <sup></sup> , is displayed in superscript.
<sub></sub>	Subscript Text	Anything that appears within <sub></sub> , is displayed in subscript.
<ins></ins>	Insert Text	Anything that appears within <ins></ins> , is displayed as inserted text.
<del></del>	Deleted Text	Anything that appears within <del></del> , is displayed in as deleted text.
 big>/big>	Larger text	Anything that appears within  big>big>, is displayed one font size larger.
<small></small>	Small Text	Anything that appears within <small></small> , is displayed one font size smaller.

```
<!DOCTYPE html>
                                                              word in blod
<html>
<body>
                                                              word in italicized
<b>word in blod</b>
                                                              word with underline
<i>word in italicized</i>
<u>word with underline</u>
                                                              word with strikethrough
<strike> word with strikethrough</strike>
<tt>word in teletype text</tt>
                                                              word in teletype text
X<sup>2</sup>
I<sub>2</sub>
                                                              X^2
My favorite color is <del>blue</del> <ins>red</ins>!
<big> Big word</big>
                                                              I_2
<small> Small word</small>
                                                              My favorite color is blue red!
</body>
</html>
                                                              Big word Small word
```

## i) Grouping Content Tags

The elements <span> and <div> are used to group and structure a document

Tag Name	Format	Description
DIV	<div> </div>	Defines a division or a section in an HTML document. Use it to group elements for purposes such as styling. Very often used together with CSS.
SPAN	<span> </span>	Used for grouping and applying styles to inline elements. Provides a way to add a hook to a part of a text or a part of a document.

The difference between the div tag and the span tag is that the div tag is used with block-level elements whilst the span tag is used with inline elements.

```
<!DOCTYPE html>
                                                 This is blue a heading
<html>
<body>
                                                 This is a paragraph.
<div style="color:Red">
 <h3>This is <span
style="color:blue">blue</span> a heading</h3>
 This is a paragraph.
</div>
</body>
</html>
```

## j) HTML Phrase Tags

- Phrase tags have been designed for specific purposes
- The elements <span> and <div> are used to group and structure a document

Tags	Format Name	Description
<em></em>	Emphasized Text	Anything that appears within <em></em> , is displayed as emphasized text.
<mark></mark>	Marked Text	Anything that appears within <mark></mark> , is displayed as marked with yellow ink.
<strong> </strong>	Strong Text	Anything that appears within <strong> </strong> , is displayed as important text.

<abbr><!-- abbr--></abbr>	Text Abbreviation	Anything that appears within <abbr></abbr> . If present, the title attribute must contain this full description.
<acronym> </acronym>	Acronym Element	Anything that appears within <acronym> </acronym> , is displayed short form the word.
<bdo><!-- bdo--></bdo>	Text Direction	Anything that appears within < bdo>, tag is used to override the current text direction.
<dfn></dfn>	Special Terms	Anything that appears within <dfn></dfn> , is displayed as italicized.(same as italic)
   	Quoting Text	Anything that appears within  <
<q></q>	Short Quotations	Anything that appears within <b></b> , is displayed as double quote.
<cite></cite>	Text Citations	Anything that appears within <cite></cite> , is displayed as print publication.
<code></code>	Computer Code	Anything that appears within <code></code> , is displayed as programming code.
<kbd></kbd>	Keyboard Text	Anything that appears within <kbd></kbd> , is tell reader to enter some text.
<samp></samp>	Program Output	Anything that appears within <samp></samp> , is displayed output from a program.
<address></address>	Address Text	Anything that appears within <address> </address> , is contain any address.

```
<!DOCTYPE html>
                                                         Emphasized Text
<html>
<head>
                                                         Marked Text
<title>Page Title</title>
</head>
                                                         Strong Text
<body>
<em>Emphasized Text</em>
                                                         HTML
<mark> Marked Text</mark>
<strong> Strong Text</strong>
                                                         Acronym Element
<abbr title="HyperText Markup Language"> HTML</abbr>
<acronym> Acronym Element </acronym>
                                                         noitceriD txeT
<bdo dir="rtl">Text Direction</bdo>
<dfn> HTML</dfn>
                                                         HTML
<blockguote> Ouoting Text</plockguote>
<q> Short Quotations</q>
                                                              Quoting Text
<cite>Text Citations</cite>
<code>Computer Code</code>
                                                         "Short Quotations"
<kbd>Keyboard Text</kbd>
Program Output
                                                         Text Citations
<address>Address Text</address>
</body>
                                                         Computer Code
</html>
                                                         Keyboard Text
                                                         Program Output
                                                         Address Text
```

## 18. HTML Lists

- HTML support a list style
- List can be very powerful in execution
- Arrange data in a hierarchy
- There are 3 type of lists
  - 1. Unordered List (<UL>)
  - 2. Ordered List (<OL>)
  - 3. Definition List (<DL>)

#### **Unordered List (<UL>)**

- An unordered list is a collection of related item that has no special order or sequence
- The list begins and ends with the tags <UL> and</UL> respectively.

- Each item in list is marked using the <LI> </LI>tags which stands for List Item.
- Each item in the list marked with a bullet, by default it is a disc.

Attribute Name	Value	Description
type	Square, disc, circle	Specify the type of bullet you like

```
<!DOCTYPE html>
<html>
<body>

<h4>An Unordered List:

Coffee

Tea

Tea

Milk

i>Nordered List:

Coffee

Tea

Milk

/li>
/li>
/li>
/body>
</html>
```

# Ordered List (<OL>)

- An unordered list is a collection of related item that has a special order or sequence
- The list begins and ends with the tags <OL> and</OL> respectively.
- Each item in list is marked using the <LI> </LI>tags which stands for List Item.
- Each item in the list is automatic numbered.

Attribute Name	Value	Description
type	1, I, i, a, A	Specify the type of numbering you like
start	value	Starting position of numbering

```
<!DOCTYPE html>
<html>
<html>
<body>
Coffee

1. Coffee

2. Tea

3. Milk

**Col>
Coffee
Tea
Milk

**Coffee
Milk

**Col>
Milk
Milk
</html>

**Coffee

**Coffee

**Colfee

**
```

## **Definition List (<DL>)**

- HTML support Definition list.
- The definition list is the ideal way to present a glossary, list of terms, or other name/value list
- The list begins and ends with the tags <DL> and</DL> respectively.
- Each item in list using the <DT> </DT>tags which stands for a Term.
- Each definition of a term using <DD></DD>

# 19. Hyperlink and Anchor Tag

- Hyperlink is a text that reference to a link.
- The <a> tag defines a hyperlink, which is used to link from one page to another.
- An anchor can point to any resource on the web which can be image, audio, video, etc.

Syntax: <a href="url" > Text to be displayed</a>

Example: <a href=<u>www.google.com</u>>Google</a>

- The <a> tag is used to create an anchor to link from, the href attribute is used to address the document to link to, and the words between the open and close of the anchor tag will be displayed as hyperlink.
- The most important attribute of the <a> element is the href attribute, which indicates the link's destination.
- By default, links will appear as follows in all browsers:
- ✓ An unvisited link is underlined and blue
- ✓ A visited link is underlined and purple
- ✓ An active link is underlined and red

Attribute name	Value	Description
href	URL	This indicates the link's destination.
name	Text value	The name attribute specifies the name of an anchor. The name attribute is used to create a bookmark inside a document. <a name="chaptor4">Chapter 4</a>
target	_blank _parent _self _top	Where to open the target URLblank - the target URL will open in a new windowself - the target URL will open in the same frame as it was clickedparent - the target URL will open in the parent frameset _top - the target URL will open in the full body of the window

#### **20. Table and its Attributes**

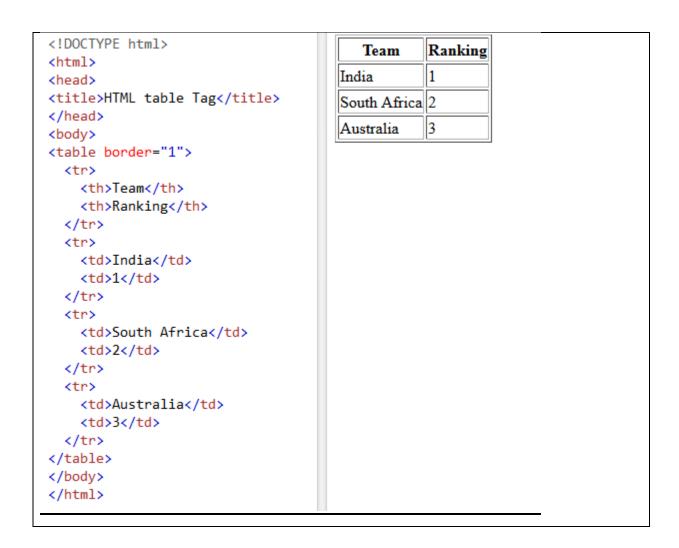
- Tables are used to place content nearly anywhere on a web page
- The opening table tag and closing table tag
- HTML tables allow web authors to arrange data into rows and columns of cells.

Tag format	Description
	Defines a header cell in a table
	Defines a row in a table
	Defines a cell in a table
<caption> </caption>	Defines a table caption
<thead> </thead>	To create a separate table header
	To indicate the main body of the table
<tfoot> </tfoot>	To create a separate table footer

Attribute Name	Value	Description
align	Left, center, right	Specifies the alignment of a table
bgcolor	Color name	Specifies the background color for a table
border	0 or 1	specifies whether or not the table is being used for layout purposes
bordercolor	Color name	Specifies the color for a border
cellpadding	number	Specifies the space between the cell wall and the cell content
cellspacing	number	Specifies the space between cells
height & width	Pixel or %	Specifies the width and height of the table

## **Table Merging**

rowspan	fruits	Merge the 2 rows
colspan	fruits	Merge the 2 columns



#### 21. **Frames and IFrames**

- The frame tag allows you to open multiple HTML documents
- Multiple views offer designers a way to keep certain information visible, while views are scrolled or replaced.
- Frame is a HTML tag that is used to divide the web page into various frames/windows
- The frames can be organized in terms of rows and columns.

- Used as <frame> tag, it specifies each frame within a frameset tag.
- Iframe as <iframe> is also a tag used in HTML but it specifies an inline frame
- Which means it is used to embed some other document within the current HTML document.
- The <iframe> tag is not somehow related to <frameset> tag, instead, it can appear anywhere in your document.
- Frame and iframe, both tags are used to fit several frame windows on a web screen.
- Frame object represents an HTML frame and IFrame object represents an HTML inline frame.
- Both have the properties of frame border, height, align, name, scrolling, source, etc.
- Frames allow several pieces of information to be seen together side by side, but it faced a lot of criticism due to many factors.
- One of them was that different browsers react differently with frames.

Attribute Name	Value	Description
frameborder	0, 1	Specifies whether or not to display a border around a frame
marginheight	pixels	Specifies the top and bottom margins of a frame
marginwidth	pixels	Specifies the left and right margins of a frame
src	URL	Specifies the URL of the document to show in a frame
name	text	Specifies the name of a frame
scrolling	Yes, no, auto	Specifies whether or not to display scrollbars in a frame

## 22. Form tag and its Attributes

- Forms is defined with opening <form> and closing </form> tags.
- The <form> </form> tag is used to create an HTML form for user input.
- Form is an area that can contain form elements. Form elements are elements that allow the user to enter information (like text fields, textarea fields, drop down menus, radio buttons, checkboxs, etc.) in a form.
- When user clicks on the "submit" button, the content of the form is sent to another file.
- The form's action attribute defines the name of the file to send the content to.
- The file defined in the action attribute usually does something with the received input.

## **Attributes:**

Attribute Name	Value	Description
accept	file_type	Specifies a comma-separated list of file types that the server accepts
action	URL	Specifies where to send the form-data when a form is submitted

method	get post	Specifies the HTTP method to use when sending form-data
name	text	Specifies the name of a form
enctype	Encode type	Specifies how the form-data should be encoded when submitting it to the server (only for method="post")

```
<!DOCTYPE html>
<html>
<html>
<body>

form action="/action_page.php" method="get">
First name: Mouse

Submit

First name: Mouse

Submit

First name: Mouse

Submit

Submit

Submit

First name: Mouse

Submit

Su
```

## 23. Get and Post Methods

- The Hypertext Transfer Protocol (HTTP) is designed to enable communications between clients and servers.
- HTTP works as a request-response protocol between a client and server.
- A web browser may be the client, and an application on a computer that hosts a web site may be the server.
- Example: A client (browser) submits an HTTP request to the server; then the server returns a response to the client. The response contains status information about the request and may also contain the requested content.

## **Two HTTP Request Methods: GET and POST**

- Two commonly used methods for a request-response between a client and server are: GET and POST.
  - There are two ways the browser client can send information to the web server.

#### a) The GET Method

#### b) The POST Method

- Before the browser sends the information, it encodes it using a scheme called URL encoding.
- After the information is encoded it is sent to the server.

#### a) GET Method

- The GET method sends the encoded user information appended to the page request.
- The page and the encoded information are separated by the ? character.

http://www.test.com/index.htm?name1=value1&name2=value2

- The GET method produces a long string
- The GET method is restricted to send upto 1024 characters only.
- Never use GET method if you have password or other sensitive information to be sent to the server.
- GET can't be used to send binary data, like images or word documents, to the server.
- The PHP provides \$\_GET associative array to access all the sent information using GET method.

#### b) POST Method

- The POST method transfers information via HTTP headers.
- The POST method does not have any restriction on data size to be sent.
- The POST method can be used to send ASCII as well as binary data.
- The data sent by POST method goes through HTTP header so security depends on HTTP protocol.
- By using Secure HTTP you can make sure that your information is secure.
- The PHP provides \$\_POST associative array to access all the sent information using POST method.

#### 24. **Control Tags**

- Forms are created with the basic elements of the graphical user interface common to most GUI operating systems.
- These elements include buttons, textboxes, radio buttons, checkboxes, and list boxes.
- Most of the elements are created by setting the type= attribute of the <INPUT> tag.

Control Tags	Description
Label	The HTML <label> element represents a caption for an item in a user interface.</label>
Button	The HTML <button> element represents a clickable button.</button>
Text Boxes	Textbox code to create a textbox for your HTML documents
Textarea	The HTML textarea element represents a multi-line plain-text editing control.
Radio Button	Radio buttons are used when you want to let the visitor select one - and just one - option from a set of alternatives.
Checkboxes	Input elements of type checkbox are rendered by default as square boxes that are checked (ticked) when activated
List Boxes	used along with one or more <option> elements, creates a drop-down list of options for a web form</option>
File	The idea behind file input in HTML forms is to let users include entire files from their system into a form submission. The files could be text files, image files

Control Tags	Format	
Label	<label>Name</label>	
Button	<input name="button1" type="submit" value=" click"/>	
Text boxes	<input name="text1" type="text"/>	

Test area	<input name="textarea1" type="textarea"/>	
Radio button	<pre><input type='radio"name=radio1' value="yes"/></pre>	
checkboxes	<pre><input name="check1" type="checkbox" value="sslc"/></pre>	
List boxes	<select name="list1"><option>bmw</option></select>	
file	<input name="filetoupload" type="file"/>	



## 25. Multimedia Objects in HTML

- Multimedia Objects are
  - a) Image <img>
  - b) Audio <audio>
  - c) Video < video >

#### a) Image

- Images are very important than text
- Images contain more than thousand words
- Syntax of image insert into the web page using tag <img>

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

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

Attributes	Values	Description
src	"C:\Users\MyLab\Desktop\g oogle.png"	Specifies the URL or location of an image
alt	"Google Image"	Specifies an alternate text for an image
width	pixels or %	Specifies the width of an image
height	pixels or %	Specifies the height of an image
border	pixels	Specifies the width of the border around an image
align	top, bottom, middle, left, right	Specifies the alignment of an image according to surrounding elements

#### b) Audio

- The <audio> tag defines sound, such as music or other audio streams.
- The <audio> tag is new in HTML5.
- HTML audio tag is used to define sounds such as music and other audio clips.
- Currently there are three supported file format for HTML 5 audio tag.
  - mp3
  - wav
  - ogg
- The HTML <audio> element is used to embed sound content in documents.
- It may contain one or more audio sources, represented using the src attribute or the <source> element

Attributes	Values	Description
src	"C:\Users\MyLab\Desktop\d ance.ogg"	Specifies the URL or location of an audio
autoplay	autoplay	Specifies that the audio will start playing as soon as it is ready
controls	controls	Specifies that audio controls should be displayed (such as a play/pause button etc).

## c) <u>Video</u>

- The <video> </video>tag specifies video, such as a movie clip or other video streams.
- Use the HTML <video> element to embed video content in a document.
- The <source> element allows you to specify alternative video files which the browser may choose from.

Attributes	Values	Description
src	"C:\Users\MyLab\Desktop\d ance.mp4"	Specifies the URL or location of an video
autoplay	autoplay	Specifies that the video will start playing as soon as it is ready
controls	controls	Specifies that video controls should be displayed (such as a play/pause button etc).
width	pixels or %	Specifies the width of the video player
height	pixels or %	Specifies the height of the video player

```
<!DOCTYPE html>
<html>
<body>
<img src="smiley.gif" alt="Smiley face" width="42" height="42"><br>
<video width="320" height="240" controls>
 <source src="movie.mp4" type="video/mp4">
</video><br>
<audio controls>
 <source src="horse.mp3" type="audio/mpeg">
</audio>
</body>
</html>
                                                                                         0:00 / 0:13
                                                                                  0:02 / 0:02
```