Web Basics - HTML

HTML Basics

Lesson Objectives

After completing this lesson, you will be able to:
- Understand the structure of an HTML page.
- Learn to apply physical/logical character effects.
- Learn to manage document spacing.
- New Semantic Elements in HTML 5

What is HTML?

HTML is a language for describing web pages.
- It stands for Hyper Text Markup Language
- HTML is a markup language and not a programming language
- HTML uses markup tags to describe web pages.

Evolution of HTML

HTML 1.0
1990's

HTML 2.0
1994

HTML 3.2
1997

HTML 4.0
1999

HTML 5
2014

HTML5 – The Good News !!!

Good support on modern mobile devices (iOS, Android)
Simpler, more intuitive syntax
Video and Audio can be included without requiring a plug-in
Incremental improvements to previous HTML challenges
Much needed next step in HTML evolution
Creative enhancements: Rounded corners, gradients, text layout
Promising support of Mobile JS Frameworks (Sencha, jQTouch)

HTML5 - Browser Support

Android 2.2

Chrome 6

Firefox 4.0

Safari Mobile

Opera 10.6

IE 9

Safari 5

HTML Elements

Most Web documents are created using HTML.

Documents are saved with extension .html or .htm.

Tags are strings in the language surrounded by a less-than (<) and a greater-than (>) sign.

- Opening tag: <html>   Ending tag: </html>

Can have Attributes

- Attributes are Name-Value pairs added to HTML start tags.

Rules applicable for HTML5 Tags

Rules for HTML5 Tags are:
- The document must included with an HTML5 DOCTYPE.
- Tags and attriutes are case-insensitive.
- Attributes do not need to be quoted.
- End tags are not required for every element.
- Some attributes may be empty such as checked and disabled .
  - For example, <input type=checkbox checked>
- Only void elements such as br, img and link may be "self-closed" with />.

HTML Elements (Code)

Code Snippet

An HTML document appears as follows:

```
<!DOCTYPE HTML>
<html>
    <head>
            <title>Title of page</title>
    </head>
    <body>
            This is my first homepage. <b>This text is
bold</b>
    </body>
 </html>
```

HTML Document Sections

HTML Head Section:
- <head>…</head>
  - Page Title, Base URL, Meta Information

HTML Body Section:
- <body>…</body>
  - Text, Images, Tables Colors, etc.

Head Section: Page Title (Code)

Code Snippet

Document Title is displayed using <title>…..</title> tag.

```
<!DOCTYPE HTML>
<html>
    <head>
            < title>
                    My First Page
            </ title>
    </head>
</html>
```

Head Section: Document Base URL

Code Snippet

```
<!DOCTYPE HTML>
<html>
    <head>
            <title> Document Base URL Manipulation </title>
            <base href="URL/">
    </head>
</html>
```

More Examples:

```
<base href="http://www.state.edu/images/">
<base href="ftp://ftp.state.edu/images/">
```

Head Section: Meta Information

The <meta> tag provides metadata about the HTML document such as descriptions and keywords for search engine.
Metadata will not be displayed on the page, but will be machine parsable.
Examples:

```
<meta …….>

<meta name="keywords" content="HTML, CSS" />

<meta name="author" content="Username">

<meta http-equiv=refresh content=60 />

<meta http-equiv=refresh CONTENT="20;URL=C:/HTML/HTM3.HTM" />

<meta charset="UTF-8">
```

HTML Body Section

<body> Element:
- Represents information content.
- Each document can have at most one <body> element.
- Body element is placed between </head> and </html> elements.
- Attributes supported in <body> element are:
  - Event Handler attributes like ononline, onoffline, onunload, onpagehide, onpageshow, etc..
  - Global attributes like id, style, class, hidden, lang, etc..

Document (Body) Contents

Body Text
- HTML truncates spaces in your text.
- Use <br> to insert new lines.
- Use <p> tag to create paragraphs.

Other Elements of Body Section:
- <table> tags are used to create tables.
- <img> tags are used to insert images.

Comments in HTML Document

Increase code readability.

Ignored by the browser.

Example of HTML comment:

- <!-- This is a Sample HTML Comment -->

Home Page Concepts

Most popular home pages reflects the personality of the sponsoring organization or corporation.

Keep the initial home page short and to the point.

First element visitor sees is a collection of navigation buttons to navigate to other pages.

When you publish a URL in print or any other marketing material, it points to the location of your home page.

Physical Character Effects

Tags applies physical character effects by formatting the characters are listed below:

Tag Name	Description	Example
..	To specify bold text	**Language**
<i>..</i>	Displays content in italic to define a part of text in an alternate voice or mood	*Language*
<u>..</u>	Tags make text between them underlined	<u>Language</u>
<s>..</s>	Tags make text between them appear striked out	~~Language~~
_{..}	To specify subscript text	H_2o
^{..}	To define superscript text	27th May

Logical Character Effects

Heading Styles:
- <hn>……… </hn>

Value of n can range from 1 to 6

Syntax

<h1>This is level 1 heading</h1>

Logical Character Effects (Contd…)

<code>	Displays any code part in the web page.
<var>	Displays any variable on the web page.
<kbd>	Displays computer commands and arguments.
<em>	Highlights specific areas of text enclosed within it.
<strong >	Used for defining important text.
<dfn>	Designed specifically for words and phrases defined in text.
<addres s>	Specifies information about the creator e.g. Address, mailing address.

Special Characters in HTML

Character Entities
- Comprise following three parts:
  - Ampersand (&),
  - Entity name or a #
  - Character code
  - Semicolon (;)
- Included in HTML page using:
  - Character code/Entity number: Include any character using its ISO Latin 1 character code.

  - To display ">" symbol, character code is 62 i.e. >

Managing Document Spacing

Horizontal Spacing
- Use <hr> tag for including horizontal rule in an HTML document

Vertical Spacing
- <p>: Paragraph Break
-
: Line Break

Preformatted Text (Code)

<pre>…</pre> Tags display preformatted blocks of text with a fixed-space font.

<pre> tag displays text with white space, line breaks, and tabs.

Examples:

```
<!DOCTYPE html>
<html>
    <head><title> Preformatted Text</title>
    <body>
            <pre>Browser would display this paragraph
            as you are viewing here.
            No need to provide line or paragraph breaks.
</pre>
        </body>
</html>
```

Divisions in an HTML Document (Code)

The <div> tag defines a division or a section in an HTML document.
The <div> tag is used to group block-elements to format them with CSS.
Syntax:

Example:

```
<div> ........ </div>
```

```
<!DOCTYPE html>
<html>
<body>
<div style="text-align: center">Text is center aligned.</div>
<div style="text-align: left">Text is left aligned.</div>
</body>
</html>
```

<span> in an HTML Document

The HTML <span> tag is used for grouping and applying styles to inline elements.

The span tag is used with inline elements whilst the div tag is used with block-level content.

Example:

```
<!DOCTYPE html>

<html>

<body>

HyperText Markup Language is the standard markup language

used to create <span style="color:blue;font-weight:bold">

static </span> web pages </body>

</html>
```

Block level element

Block elements separate content into blocks

Each block element is displayed on its own with a line break before and after it

Example for block elements are <p>,<div>, <ol>, <ul>, <li> etc..

- <div> element is a block level element that can be used as a container for other HTML elements

Inline element

Inline elements wont separate content into blocks

Inline elements are normally displayed without line breaks.

Inline element is just displayed in the flow of the paragraph

Example for Inline elements are <b>,<i>,<u>,<em>, <a>, <td>, <img>, etc..

- <span> element is an inline element that can be used as a container for text.

Rules

All inline elements and text need to be nested inside another block element before they can go in the <body> element

Block elements are not allowed inside an inline element

Keep block elements out of your <p> element

Put text and inline elements inside block elements before adding them to a <blockquote>

For an example:

- and <ul> can have only
- We can put text, inline elements or block elements inside

Example of Inline and Block elements

```
<!DOCTYPE html>
<html>
<body>
<p>HyperText Markup Language is the standard markup
language used to create <span style="color:blue;font-
weight:bold"> static </span> web pages. JavaScript is a
scripting language used to make web page content as
<span style="color:orange;font-
weight:bold">dynamic</span>.</p>
</body>
</html>
```
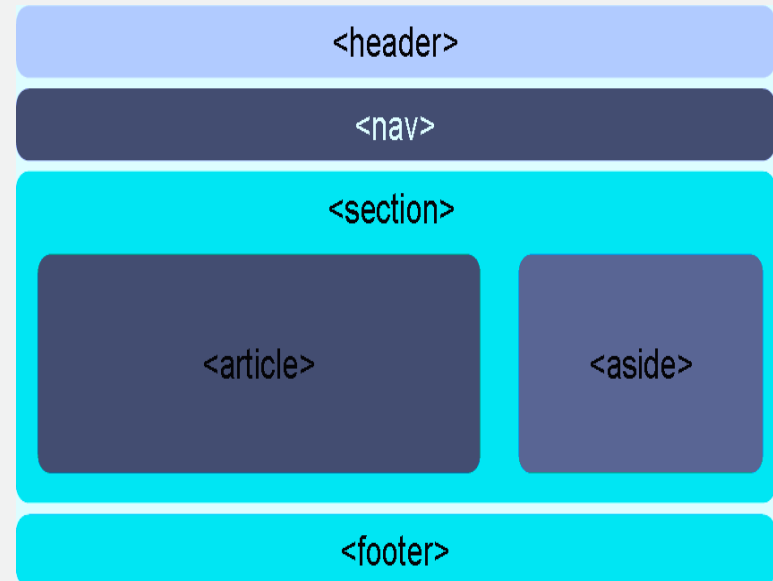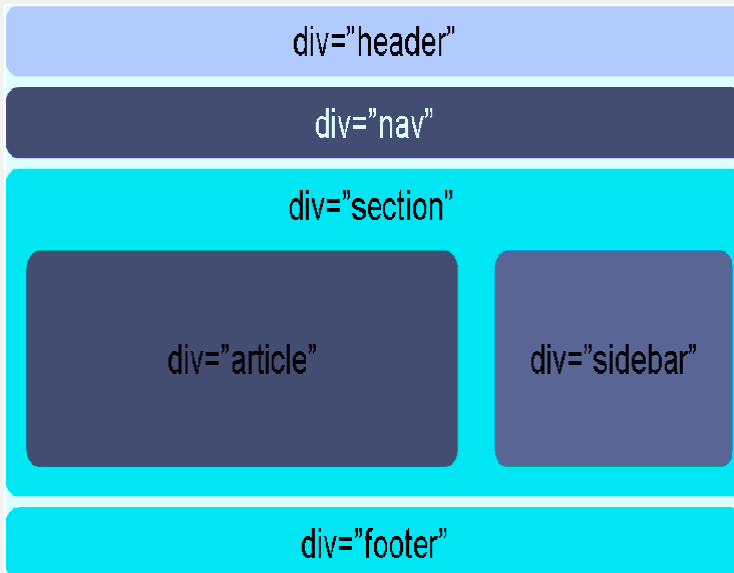
Laying out a page with HTML5

Most HTML 4 pages include a variety of common structures, such as headers, footers and columns

It's common to mark them up using div elements, giving each a descriptive id or class

HTML 5 addresses this issue by introducing new elements for representing each of these different sections

Elements that make it much easier to structure pages

| div="header" |
| div="nav" |
| div="section" |

| div="article" | div="sidebar" |

| div="footer" |

| <header> |
| <nav> |
| <section> |

| <article> | <aside> |

| <footer> |

New Semantic Elements in HTML 5

HTML Tag	Description
<article>	Defines a complete, self-contained block of related elements.
<aside>	Defines some content aside from the content it is placed in (like a sidebar
<footer>	Defines a footer for a document or section which contains the author of the document, copyright information, links to terms of use, contact information
<header>	Defines a header for a document or section. It can be used as a container for introductory content.
<nav>	Defines a set of navigation links
<section>	Defines a section in a document

Summary

In this lesson, you have learnt about
- The structure of an HTML page.
- Physical/logical character effects
- Managing document spacing.
- New Semantic elements in HTML5

Review Question

Question 1:Which of the following are newly added content tags in HTML5?
- Option1: article
- Option2: div
- Option3: section
- Option4: p

Question 2:HTML document is saved with an extension .xml.
- True/False

Question 3:A Var tag is used to display the_____in the web page.

Review Question: Match the Following

1. Code	a) Tag displays user-entered computer commands and arguments
2. Var	b) Tag is used for defining important text.
3. Kbd	c) Tag displays any code part on the web page.
4. Emphasis	d) Tag displays any variable on the web page.
5. Strong	e) This tag designed specifically for words and phrases that are defined in the text.
6. Definition	f) Tag for generic emphasis means this tag highlight specific areas of text.

Web Basics – HTML5

Tables

Creating Tables

Table contains data in the format of rows and columns.
For an example, department information's are displayed in the tabular

format as shown below

Deptno	Dname	Location
10	Accounting	New York
20	Research	Dallas
30	Sales	Chicago
40	Operations	Boston

→ Row

Column named as "Deptno"

The above "Department" table contains 4 rows and 2 columns.

Creating Tables

An HTML table can be created using <table> elements
- <table>
  - Define an HTML table
  - Other elements like <tr>, <caption>,.. can be nested inside <table> element

An HTML table has two kinds of cells
- Header Cells
  - <th>
    - Defines a table header

Standard Cells

- <tr>
  - Defines a table row
  - A row can have one or more <td> or <th> elements

<td>
- Defines a table cell data

Employee Name	Salary
Lathika	55000
Sandeep	32000
Ajay	99322

Header Cells

Standard Cells

Creating Tables

Syntax

```
<table>
    <tr> <th>Column1 Header</th> <th>Column2
Header</th></tr>
    <tr> <td>Cell 1,1</td> <td>Cell 1,2</td>
</tr>
    <tr> <td>Cell 2,1</td> <td>Cell 2,2</td>
</tr>
</table>
```

Creating Tables

Some more elements which can be used while creating tables are:

- <thead>
  - Group header content in an HTML table
- <tbody>
  - Group the body content in an HTML table
- <tfoot>
  - Group footer content in an HTML table
- <caption>
  - Defines a caption for the table
  - <caption> element should follow with <table> element immediately.
  - <caption> element value will be center aligned and displayed above the table

Creating Tables

Syntax

```
Table column headings:
<table>
    <caption>This is table caption</caption>
<tr>
<th>COLUMN 1</th>
<th>COLUMN 2</th>
<th>COLUMN 3</th>
</tr>
</table>
```

Creating Tables

Syntax

```
<table>
<thead>
<tr><td>.....</td></tr>
</thead>
<tfoot>
<tr><td>.....</td></tr>
</tfoot>
<tbody>
<tr><td>....</td></tr>
<tbody>
</table>
```

Blank Data Cell (Code)

Inserting Blank Data Cell :
- <td></td>
- <td>
</td>

Nested Tables (Code)

A cell can contain another table within it.

```
<table>
<tr> <th>Zone</th> <th> State </th> </tr>
<tr> <td>South</td>
<td><table>
<tr> <th>Name</th> <th>Capital City</th> </tr>
<tr> <td>Karnataka</td> <td>Bangalore</td> </tr>
<tr> <td>Tamilnadu</td> <td>Chennai</td> </tr>
<tr> <td>Andhra Pradesh</td> <td>Hyderabad</td>
 </tr>
</table></td></tr>
</table>
```

Zone	State	
South	Name	Capital City
	Karnataka	Bangalore
	Tamilnadu	Chennai
	Andhra Pradesh	Hyderabad

Table Formatting

Cell Spanning
- Table cells can span across more than one column or row.
- Types of cell spanning
  - Row spanning
  - Column spanning

Example of Colspan

Employee Name	Salary
HR	
Lathika	55000
Sandeep	32000
SALES	
Sonia	43000
Raju	30022
Ajay	99932

- Example of Rowspan

Department Name	Employee Name	Salary
HR	Lathika	55000
	Sandeep	32000
Sales	Sonia	43000
	Raju	30022
	Ajay	99932

Cell Spanning (Code)

Row spanning/Column spanning:
- Use rowspan and colspan attribute either in <td> or <th> element.

```
<table>
<tr>
    <th rowspan=m>Multiple Column
Header</th>
    <th colspan=n>Multiple Row
Header</th>
</tr>
</table>
```

m & n are integers specifying number of rows and columns respectively.

Cell Spanning Demo

Deptno	Name	Salary
10	Sita	34000
	Ram	24000
20	Laksman	45000
	Lava	32000
	Kusha	42000
Total Salary		1222

Grouping of Columns

<colgroup> tag specifies a group of one or more columns in a table for formatting

The <col> tag specifies column properties for each column within a <colgroup> element.

Use <colgroup> and <col> tags to group columns with common properties like
- Span attribute :
  - Identifies number of columns in the current group.
  - Default value is 1
  - Provide span attribute and omit <col> tag

Example for grouping 3 columns and applying background color as green

```
<table>
        <colgroup span="3" style="background-color:green"> </colgroup>
        <col>
        <col>
        <tr>
                table contents......
        </tr>
</table>
```

Lesson Summary

After completing this module you know:
- Structure of an HTML table
- Control table format such as cell spanning
- Use tables to format contents of an HTML Page.

Summary

Review - Questions

Question 1: Cell spanning is used to joining cells together to make a larger cell.
- True/False

Question 2: The <col> tag defines the attribute values for one or more columns in a table.
- True/ False

Question 3: In which tag usage of rowspan/colspan attribute is valid?
- <th>
- <tr>
- <td>
- None of the above

Web Basics – HTML 5

List

Numbered List

List of items can be numbered or ordered is called numbered/ordered List

Tags can be used for creating ordered list are:

-
-

 tag

- Defines a list item.
- Should be used as a child tag of either <OL> or <UL> tag.

 tag

- defines an ordered list.
- An ordered list can be numerical or alphabetical.
- Attributes in <ol> tag are
  - start
  - type

Example

- **Example (Code)**

- **Output**

```
<!DOCTYPE html>
  <html>
       <body>
       <h2>My favorite cricket teams</h2>
       <ol>
            <li>INDIA</li>
            <li>SRILANKA</li>
       </ol>
     </body>
  </html>
```

My favorite cricket teams

1. INDIA
2. SRILANKA

Attributes in <OL> tag

Type Attribute:
- Specifies the kind of marked to use in the list
- Valid values for the Type Attribute
  - A-Uppercase letters
  - a-Lowercase letters
  - I-Uppercase Roman letters
  - i-Lowercase Roman letters
  - 1-Standard numbers, default

Start Attribute
- Specifies the start value of an ordered list

Example

▪Example:

```
<!DOCTYPE html>
<html>
    <body>
        <H2>MY favorite cricket teams<H2>
            <ol start="2" type="a">
                <li>INDIA
                <li>SRILANKA
                <li>PAKISTAN
                 <li>AUSTRALIA
                <li>SOUTH AFRICA
            <ol>
    </body>
</html>
```

- **Output**

My favorite cricket teams

b. INDIA
c. SRILANKA
d. PAKISTAN
e. AUSTRALIA
f. SOUTH AFRICA

Bulleted List

List of items prefixed with bullets is called Bulleted /Unordered List <ul> tag
- defines an unordered list.
- An unordered list items will be marked with bullets (small black circles).

- **Example**

```
<!DOCTYPE html>
<html>
  <body>
          <h2>My favorite cricket teams</h2>
          <ul>
                  <li>INDIA</li>
                  <li>SRILANKA</li>
          </ul>
  </body>
</html>
```

- **Output**

My favorite cricket teams

- INDIA
- SRILANKA

Attributes in <UL> tag

Style Attribute:

▪ Can be used in <UL> tag to define the style of the marker.

Style Attribute Value	Description
list-style-type:disc	The list items will be marked with bullets (default)
list-style-type:circle	The list items will be marked with circles
list-style-type:square	The list items will be marked with squares
list-style-type:none	The list items will not be marked
list-style-image: url('logo.gif');	The list items will be marked with an image

Example

▪ <UL style="list-style-type:circle"> will be used to prefix unordered list of items with square.

Example (Code):

- **Example**

```
<!DOCTYPE html>
<html>
   <body>
          <h2>My favorite cricket teams</h2>
          <ul style="list-style-type:square">
                 <li>INDIA</li>
                 <li>SRILANKA</li>
          </ul>
   </body>
</html>
```

- **Output**

My favorite cricket teams

- INDIA
- SRILANKA

Lesson Summary

In this lesson, you have learnt about:
- Types of available list items
- Create bulleted, numbered and glossary listed items

Review Question: Questions

Question 1:Which tag is used at the beginning of an Ordered List
-
-
-

Question 2:To create a bulleted list <UL> tag is used
- True/ False

Question 3:_____attribute is used to modify the appearance of bullets

Review Question: Match the Following

1. \<dd>
2. \<dt>
3. \<ol type=I>
4. \<ol type=A>
5. \<ol type=1>
6. \

a. 1-Standard numbers
b. Square Form
c. A-Uppercase letters
d. I-Uppercase Roman letters
e. Data Definition
f. Data Term

Web Basics – HTML5
Working with Links

Hyperlink in HTML

Links allow users to navigate and find information on the Internet as easy as possible.

HTML links are hyperlinks.

A hyperlink is a text or an image you can click on, and jump to another document.

Tag to create a link is <a> which stands for anchor.

Syntax:

> **link**
>
> **text**

By default, links will appear as this in all browsers:
- An unvisited link is underlined and text is highlighted in blue color (Click me)
- A visited link is underlined and text is highlighted in purple color (Click me)
- An active link is underlined and text is highlighted in red color (Click me)

How does Hyperlink works?
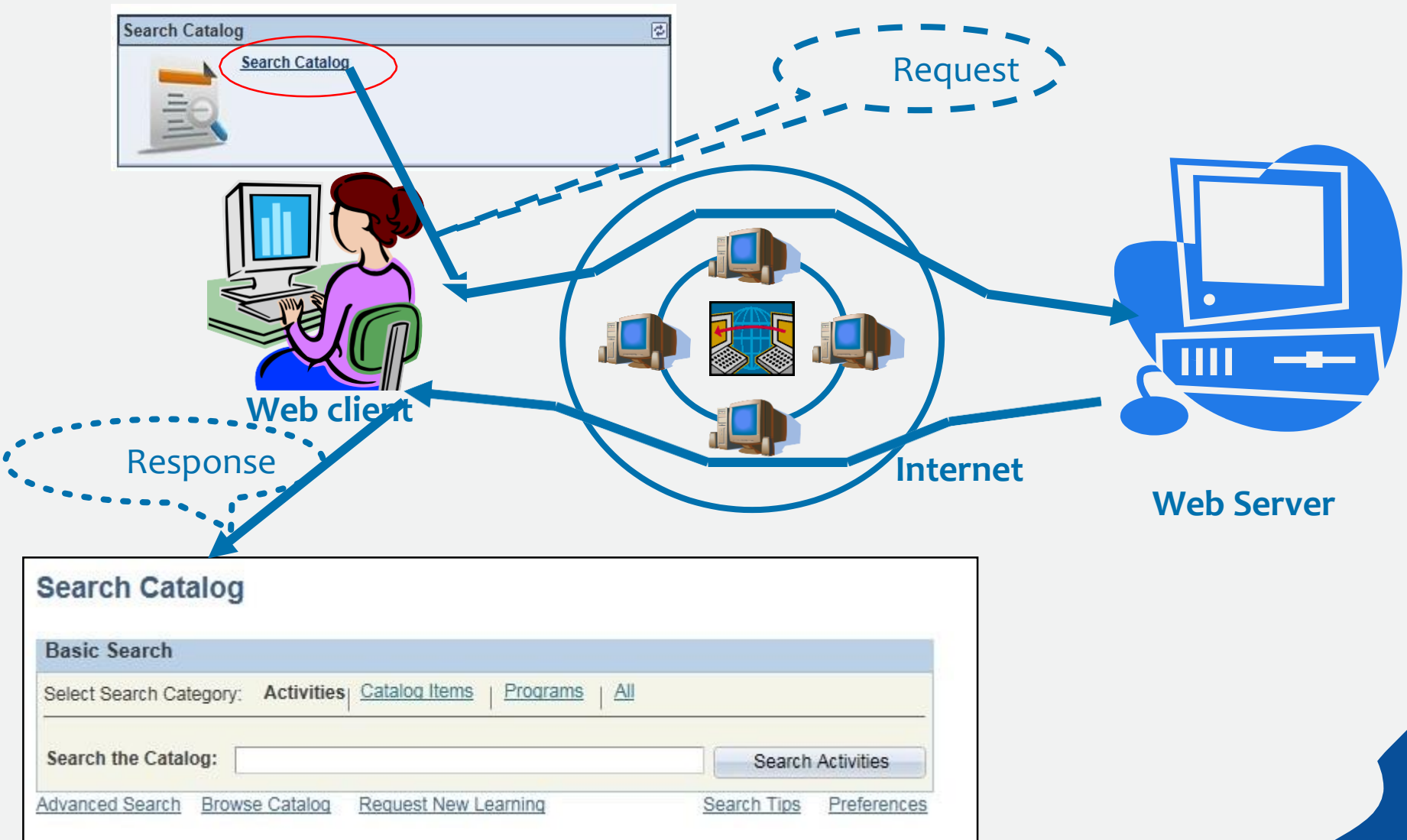
Create Links

- Link to local document in an application(Relative linking)

> Click Here

- Link to local document in an application(Absolute linking)

> <a
> href="http://localhost:8080/Example/contactus.html"
> >Click Here

- Link to web document

> I have some <a
> href="http://www.state.edu/info/info.htm">
> information about education.

Links to an E-Mail

Link to an electronic mail:

- An URL tag called "mailto" identifies the address to which an e-mail has to be sent.

- Syntax:

```
<a href="mailto:mailid?subject =content&cc=cc-mailid&bcc=bcc-mailid">Link text</a>
```

- Examples:

```
<a href="mailto:eDude@igate.com?subject =More Info">Contact Me</a>

Please <a href="mailto:author@igate.com>mail</a>your comments to  me
```

CC and BCC in Email (Code)

```html
<!DOCTYPE html>
<html>
<body>
<!----add the CC and BCC's--->
<a href="mailto:edude@capgemini.com?Subject=Hello&Cc=jane@capgemini.com&bcc=joe@capgemini.com"> Mail us </a>
</body>
</html>
```

Links to Specific Part of a Page

id attribute, used in the anchor tag identifies a section of a page.

Set HREF to the section name. Precede the name with a # symbol

```
<a id="address1"></a>
B 44, Sector 59, Noida, Uttar Pradesh 201301, India


…Contents of the page…
I am working in <a href="#address1">Careerera</a>
```

Providing Target for a Hyperlink

Target attribute of the <a> tag specifies where to load the linked document.
Document 2

It takes following values:
- name of the existing window/target
- _blank
- _self
- _parent
- _top

By default it loads the linked document in the current window.

_blank (Code)

Target attribute of the <a> tag specifies where to load the linked document.
Document 2

It takes following values:
- name of the existing window/target
- _blank
- _self
- _parent
- _top

By default it loads the linked document in the current window.

_self (Code)

"_self":
- Puts new document in the same window and frame as the current document.
- Works the same as if you had not used TARGET at all.

This code produces this go to:

```
<a href="selftarget.html" target="_self">next</a> page
```

_top (Code)

"_top":

- loads linked document in the topmost frame. This means that the new page fills the entire window.

```
<a href="selftarget.html"
target="_top">top</a>
```

_parent (Code)

"_parent":

- Used when a frameset file is nested inside another one
- A link in one of the inner frameset documents which uses "_parent" loads the new document where the inner frameset file had been

```
<a href="bigframe.html" target="_parent">bigframe</a>
```

Hyperlinks in Lists Items (Code)

Add links to list items and table contents:

```
<ul>
  <li><a href=home.html>mumbai</a></li>
  <li><a href=home.html>pune</a></li>
  <li><a href=home.html>nasik</a></li>
</ul>
```

Hyperlinks in Table Elements (Code)

Add links to table contents:

```
<table border=1>
<tr><th>team<th>points<th>grade</tr>
<tr><td>
<a
href=home.html>mumbai</a></td><td>90</td><td>a</td>
</tr>
<tr><td>
<a href=home.html>pune</a></td><td>86</td><td>b</td>
</tr>
<tr><td>
<a href=home.html>nasik</a></td><td>80</td><td>c</td>
</tr>
</table>
```

Summary

In this lesson, you have learnt about
- How hyperlink works in web pages
- Creation of hyperlinks in web pages
- Including hyperlinks to list items and table contents

Summary

Review Question

Question 1: The id attribute along with # used in the anchor tag identifies:
- Page section.
- Path to load the linked document.
- Address to send the e-mail to.

Question 2: URL tag mailto, identifies the address from where e-mail is to be received.
- True/ False

Question 3: _____ attribute of the <a> tag specifies where to load the linked document.

Review Question: Match the Following

1. "_blank"	a. Identifies address to send the e-mail to.
2. "_self"	b. Only filename is needs to be specified.
3. "_top"	c. Gives entire address of the page.
4. mailto	d. Puts the new document in the same window and frame as the current document
5. Relative Linking	e. Opens the new document in a new window.
6. Absolute Linking	f. Loads linked document in the topmost frame.

Web Basics – HTML5

Image Handling

Roles of images in web pages

Web pages are comprised of text and images.
Some of the roles of images in web pages are
- To make web page content more interesting to be read
- To increase clarity on web page content by transmitting right message
- Provoking reactions
- To ensure that the user response is anticipated

Some of the widely used image formats
- GIF : Graphical Interchangeable Format
- JPEG : Joint Photographic Expert Group
- PNG : Portable Network Graphics

Adding images in webpages

Images are added into a HTML document using <img> tag.
<img> tag has 2 required attributes such as src and alt

Syntax:

****

The src attribute defines the url (web address) of the image
Alt attribute defines alternative text to display for non-graphical browsers. The alt attribute is required

Example:

<img src="html5.gif" alt="The official HTML5 Icon">

Attributes of an Inline Image

Other attributes of <img> tag are:
- width: Sets the width of the image.
- height: Sets the height of the image.

Text & Image Alignment (Code)

Style Attribute:
Can be used in <img> tag to define the alignment of text and image.

Style Attribute Value	Description
vertical-align:bottom	The bottom of the element is aligned with the lowest element on the line
vertical-align:middle	The element is placed in the middle of the parent element
vertical-align:top	The top of the element is aligned with the top of the tallest element on the line
float:right	The element floats to the left
float:left	The element floats to the right
float:none	The element floats to the none

<br clear=LEFT/RIGHT> can be used to stop text flowing around an image

Demo

The Example of image alignment

HTML allows for simple aligning of text and images by adding the style attributes to the tag. HTML 5 expanded this attribute by specifying float:left and float:right options. When you use these options, text flows down the right or left side of an image aligned to them. The text flow continues until either the text passes the image, the text ends, or the browser encounters a tag.

HTML5 allows vertical alignment of text and images by adding the style attribute with values as vertical-align:bottom, vertical-align:top,.. When you use these options, text is vertically aligned top/bottom/middle. The text flow continues until either the text passes the image, the text ends, or the browser encounters a br tag with clear attribute.

Use of Image as a Hyperlink (Code)

Images used as hyperlinks:

```
<a href="5image1.html"><img src="home.gif"></a>
```

Images contained within a table:

```
<table>
<tr><th>Product</th><th>Cost</th><th>Image</th></tr>
<tr> <td>Pencil</td> <td>$8</td>
    <td><img src="pencil.gif"></td> </tr>
<tr> <td>Brush</td> <td>$15</td>
    <td><img src="paintbrush.gif"></td></tr></table>
```

Lesson Summary

In this lesson, you have learnt about:

- Role of images in web pages
- How to add images in web pages
- How to use images as hyperlinks

Question 1: Client-side image maps are usually faster than server-side image maps.
- True/ False

Question 2: _____contain the linking information on the server.

Web Basics – HTML5

Frames

Introduction to FRAME

With frames, more than one HTML document content can be nested in a web page.

Need for frames in webpage:
- Reusability
- Static navigation can be visible all the time
- Design issues can be resolved.
- Advertisement can be displayed which promotes web site

Introduction to IFRAME

Inline Frame Element (<iframe>) is used to embed another HTML page into the current page.

<iframe> can be used within a HTML document body just like an <img> tag.

Syntax:

> **<iframe src="url"></iframe>**

Types of documents which can be embedded using IFRAME are

- Image(GIF, JPEG, etc..)
- PDF
- Audio
- Video
- HTML document, etc..

IFRAME Tag Attributes

Attribute Name	Attribute Value	Description
name	Name of the frame	Mentions the name of iframe.
height	pixels	Denotes the height level of iframe.
width	pixels	Denotes the width level of iframe.
src	URL of the file	The address/URL of the content to be fixed in iframe.
sandbox	"", allow-forms, allow-same-origin, allow-scripts, allow-top-navigation	Creates limitations for iframe contents.
seamless	seamless	Defines that iframe should look like the part of the containg document.
srcdoc	HTML code	The HTML content of a page to be shown in iframe.

Example

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

    <iframe src="HTML5.pdf" width="600" height="400">
     <p>Your browser does not support iframes.</p>
     </iframe>


     <p>Inline Frame Element  is used to embed another HTML
page into the current page. can be used within a HTML document
body just like an tag. A section that contains embedded content
is called the parent context.</p>

</body>
</html>
```

Lesson Summary

In this lesson, you have learnt about
- Need of frames in webpages
- Embedding of content in HTML document using <iframe> tag.

Review – Match the Following

1. src	a. Sets the height of the frame.
2. NAME	b. Sets the width of the frame.
3. WIDTH	c. Creates limitations for iframe contents.
4. HEIGHT	d. Assigns a name to a frame.
5. SANDBOX	e. Source document's URL is displayed in this frame.

Web Basics – HTML5

HTML Forms for User Input

Lesson Objectives

After completing this module you will be able to:

- Understand the role of forms in web pages
- Understand various HTML elements used in forms.

  - Single line text field
  - Text area
  - Check box
  - Radio buttons
  - Password fields
  - Pull-down menus
  - File selector dialog box

HTML Forms for User Input

HTML forms are used to accept user inputs and then submit data for processing.

 A *form* is an area that contains form elements.

Types of elements which can be included in a form are

- Label
- Single line text field
- Password field
- Text area
- Drop down menu
- Radio button
- Checkbox
- File selector box, etc..

HTML Forms for User Input

User input forms are created using <form> tag.

Syntax:

```
<form method="get/post" action="URL"
  enctype="Encryption Type">
    Field definitions
</form>
```

- **action:** the URL of the script
- **method:** the HTTP request method to use, sometimes GET, but usually POST
- **enctype:** Specifies how the data is to be encoded.

HTML Forms for User Input

Some more attributes which can be used in <form> tag are

Attribute Name	Attribute Value	Description
name	Form name as a string	Mentions the name of a form.
autocomplete	On, off	Specifies whether a form should have autocomplete on or off
target	_blank, _self, _parent, _top	Specifies where to display the response that is received after submitting the form
novalidate	novalidate	Specifies that the form should not be validated during form submission.

HTML Form Elements

<input> element is the most used form tag.

An <input> tag includes the following attributes

- name: Name of the field which is required to send data(Key/Value pair) during form submission
- id: A unique identified of the field
- value: Sets a default value of the field
- maxlength: Specifies the maximum number of characters allowed in an <input> element
- readonly: Specifies that an input field is read-only
- size: Specifies the width, in characters, of an <input> element
- Disabled: specified that an input element should be displayed.
- type attribute of <input> tag specifies the field type

Text- related Elements

Text related elements can be created as shown below:

Code	Element
<input type="text">	Single line text box
<input type="password">	Password field
<input type="hidden">	Hidden field

- ▪ If input exceeds more than one line, then create Multi-line input control using HTML <textarea> tag
- ▪ Syntax:

  <textarea rows=" " cols=" " name=" ">
  - • Rows : Number of rows of text area box
  - • Cols: Number of columns of text area box
  - • Name: name of the element

Checkbox Element

If more than one option is required to be selected from multiple options, then create checkbox as shown below:

- <input type="checkbox">
- Use checked attribute for selecting any checkbox to be selected by default

Example:

<input type="checkbox" name="hobbies" value="Reading Books"> Reading Books <input type="checkbox" name="hobbies" value="Net Surfing"> Net Surfing
<input type="checkbox" name="hobbies" value="Singing" checked> Singing

Select your Hobbies: ☐ Reading Books ☐ Net Surfing ☑ Singing

Radio Button

If only one option is required to be selected from multiple options, then create radio button as shown below:

- <input type="radio">
- Use checked attribute for making a radio button to be selected by default

Example:

<input type="radio" name="sector" value="Public">
Public
<input type="radio" name="sector" value="Private">
Private

Select your sector in which you are working: ○ Public ○ Private

Drop down list

Drop down list allow the user to select one or more values from a pre-determined options

Tags for creating drop down list with options are:

- <select> : Creates drop down list
- <option>: Defines an option in a select list.

Tag name	Attribute	Description
<select>	Name	Defines a name for the drop down list
	Size	Defines the number of visible options in a drop down list
	Multiple	Allow to select multiple options at once
	Disabled	Disable drop down list
<option>	value	Specifies the value to be sent to a server
	Selected	Makes option to be selected by default

Drop down list - Example

```
<!DOCTYPE html>
<html>
<body>Select a country:
     <select name="country">
              <option value="Germany">Germany</option>
              <option value="India" selected>India</option>
              <option value="China">China</option>
              <option value="Japan" >Japan</option>
     </select>
</body>
</html>
```

Select a country: India ▼

File Upload

File upload will allow the user to upload a file from the desktop to an application in browser.

The below code is used to define a file-select field and a "Browse..." button (for file uploads):

- <input type="file"/>

Attribute	Description
Name	Defines a name for the file upload dialog box
Disabled	Disable element
Accept	Specify MIME type to describe the file type which accepts by a server

In <form> tag, use enctype="multipart/form-data" if file need to be uploaded using file selector form element.

File Upload- Example

```html
<!DOCTYPE html>
<html>
<body>
      <form method="post" action="success.html"

        enctype="multipart/formdata">
        Select a photo to upload:
        <input type="file" name="photo"/>
      </form>
</body>
</html>
```

Select a photo to upload: [_____] [Browse...]

Button

Different types of button which is possible to be created in HTML5 are as shown below:

Field type	Element	
<input type="button">	Button	A clickable button, that activates a JavaScript when it is clicked
<input type="submit">	Submit button	Defines a button for submitting a form
<input type="reset">	Reset button	Define a reset button (resets all form values to default values)

Summary

After completing this module you now:
- Understand the role of forms in web pages
- Understand various HTML elements used in forms like:
  - Single line text field
  - Text area
  - Check box
  - Radio buttons
  - Password fields
  - Pull-down menus
  - File selector dialog box

Review Question

Question 1: Radio Buttons are used when you want the user to select:
- Option 1: one of a limited number of choices.
- Option 2: one or more options of a limited number of choices.
- Option 3: many of unlimited number of choices.

Question 2: METHOD attribute states the method to use when you send the form to the server.
- True/ False

Question 3:The_____ attribute of form specifies how the data is to be encoded.

Review Question: Match the Following

1. Check Boxes	a. Populate data in the list.
2. Radio Buttons	b. Create a select list.
3. Password fields	c. Include form data without rendering it to the user.
4. Hidden Input Type	d. Entered text is shown as asterisks.
5. <select> tag in Drop Down List	e. Only one option of a limited number of choices.
6. <option> tag in Drop Down List	f. One or more options of a limited number of choices

Web Basics – HTML5
New Form Elements

Introduction to HTML5 Enhanced Form Elements

A Form is one of the most basic and essential feature of any web site

HTML5 brings to the table several new input types, a total of 13

HTML5 introduces these data types via the
                                                                                                                                                                                               <input type="_NEW_TYPE_HERE_"/> format

One of the key design decisions in HTML5 is backward compatibility

It provides automatic validity of the fields as per the format

The browser inspects the input type and if it finds that it is of a specific type

Placeholder

Place Holder - A placeholder is a textbox that hold a text in lighter shade when there is no value and not focused

Syntax is –

<input id="first_name" placeholder="This is a placeholder">

This is how place holder looks like on supporting browser

Once the textbox gets focus, the text goes off and you shall input your own text
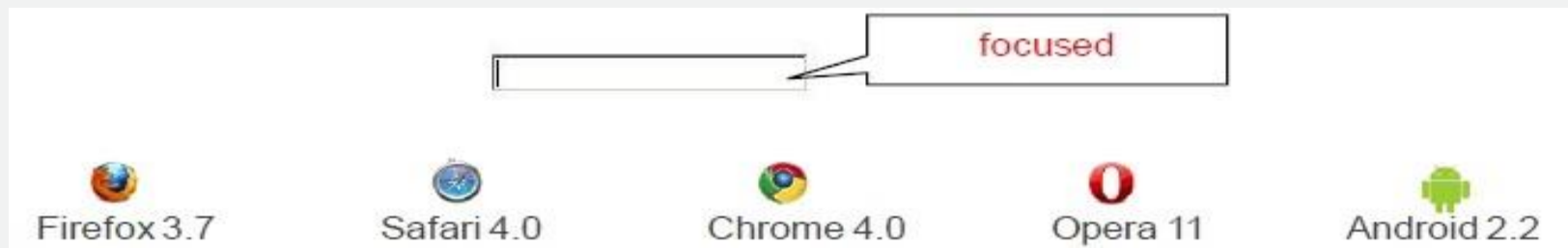
Auto Focus
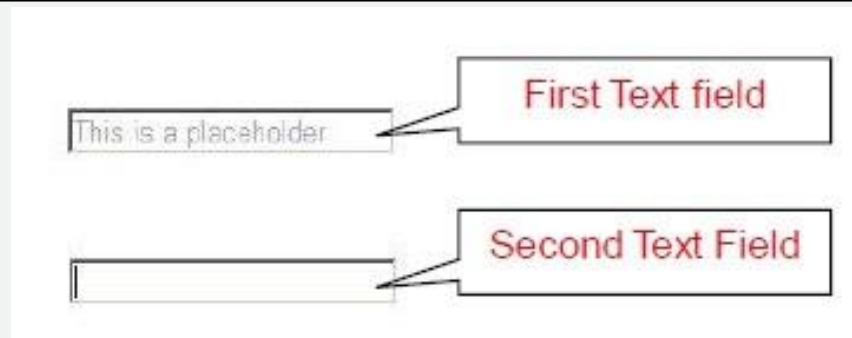
Auto Focus - Autofocus is a Boolean attribute of form field that make browser set focus on it when a page is loaded
Syntax is –

<input id ="Text2" type="text" autofocus/>

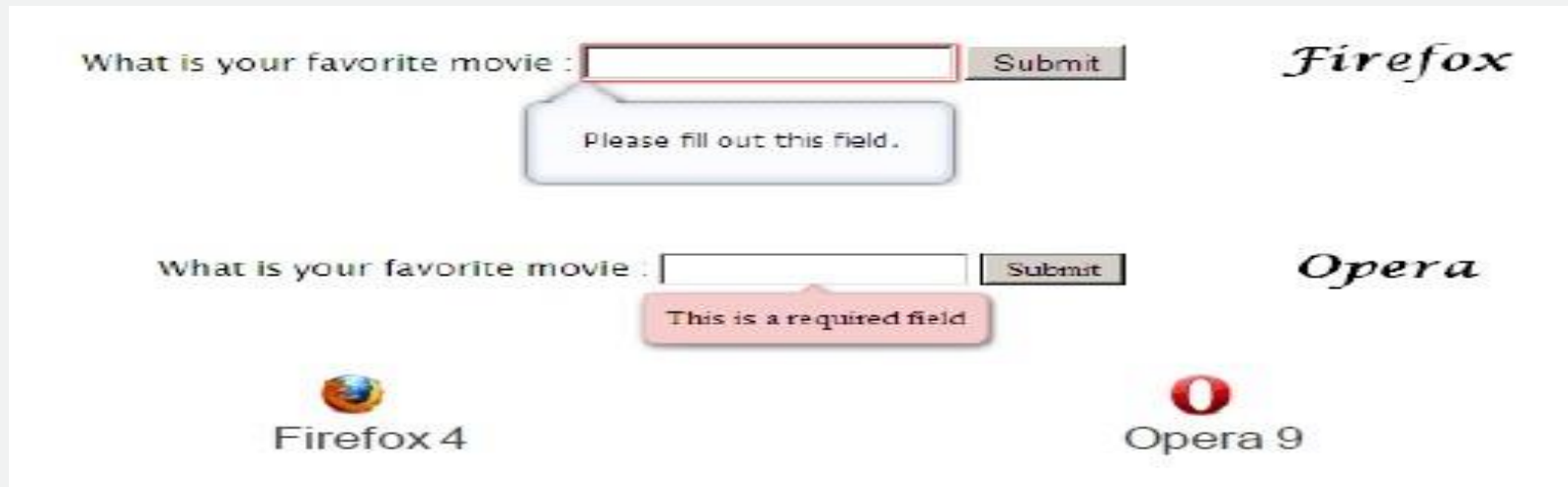Firefox 4   Safari 4.0   Chrome 3.0   Opera 10   Android 2.2

Required

Required - A field with "required " attribute must be filled in with value before submission of a form

Syntax is –

<input name="name" type="text" required />

The picture below shows us how Firefox and Opera prompt user to fill in value if a "Required field" is left blank upon submission

Pattern

Pattern - A value filled in the field must be checked against the regular expression specified in pattern attribute.

Syntax is –

Pincode: <input type="text" name="pin_code" pattern="[0-8]{6}" title="666666">

The picture below shows us how browser prompt user to fill in valid value if a "field with Pattern attribute" is filled with invalid value upon submission

Email

Email - This field is used to check whether the string entered by the user is valid email id or not.

Syntax is –

```
<input id="email" name="email" type="email" />
```

Browser's that don't support this field will treat this as a simple text field
This is how it looks like on form

Email: nettutsplus.com   Submit Form

nettutsplus.com is not
a legal email address

Opera
10.63

Data List

Data List - Datalist is seems like type-ahead auto suggest textbox as you can see in Google search box

Syntax is –

```
<input id="country_name"
name="country_name" type="text"
list="country" />
<datalist id="country">
<option value="Australia">
<option value="Austria">
<option value="Algeria">
<option value="Andorra">
<option value="Angola">
</datalist>
```

Search

Search - In HTML5, we can define a textbox as search box instead of a normal textbox
- Supported by Chrome 8 & Safari 5
- Syntax is

```
<input id="mysearch" type="search" />
```

Number

Up and down button provided to increase and decrease the value.
Min and max parameters provided to limit the values.
Browser will treat it as simple textfield if it doesn't support this type.
Syntax is

```
<input id="movie" type="number" value="0"/>
```

Limiting the values for this field...

```
< input id="user_lic" type="number" min="5" max="30" step="5" value =""/>
```

Range

Also known as slider
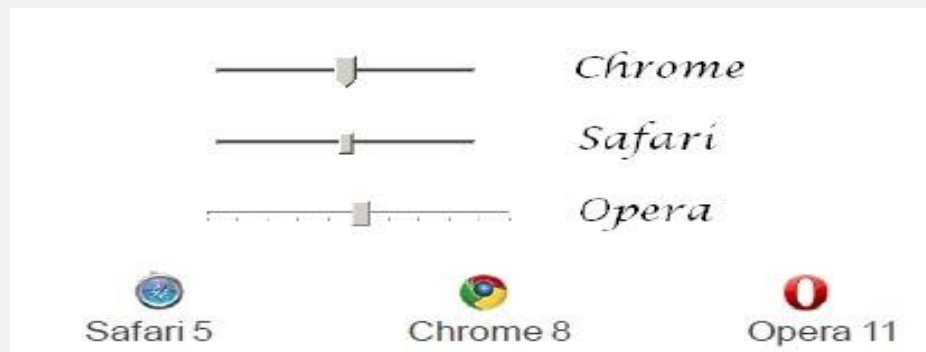Before HTML5, programmers used to write lines of code for range/slider
Easy to implement
Look and feel is different for different browser's
Browser will treat it as simple textfield if it doesn't support this type
Syntax

```
<input id="test" type="range"/>
```

Date

Date
- Important and mostly used element
- Simple to implement
- Before HTML5, programmers used to write lines of javascript code for date picker
- Input type for date:- date, week, month, time, datetime (gives UTC time), datetime-local (local time)

Syntax is

```
<input id="meeting" type="date" value=""/>
```

Audio

Audio - HTML5 is likely to put an end to audio plug-in such as Microsoft Windows Media player, Microsoft Silverlight , Apple QuickTime and the famous Adobe Flash

MIME type's - audio/mpeg, is optional but its always better to provide
Only .mp3, .wav, and .ogg (vorbis) formats are supported till date
If quick time player is not available, then safari won't support this tag
Other properties like auto play, loop, preload area also available
Syntax is –

```
<audio controls>
<source src="vincent.mp3" type="audio/mpeg"/>
<source src="vincent.ogg" type="audio/ogg"/>
</audio>
```
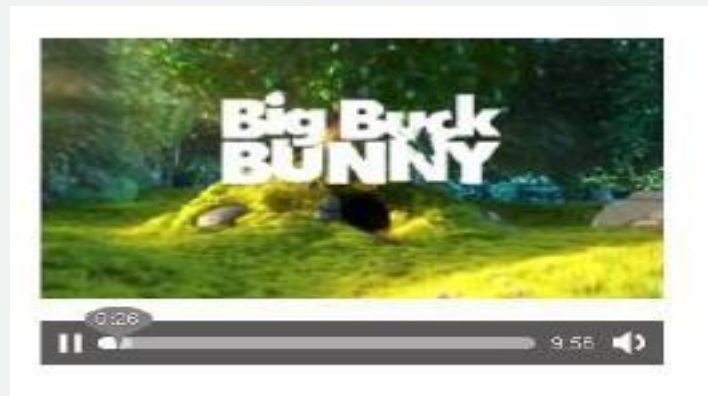
Video

Video – HTML5 video tag is exactly similar to audio but with few extra attributes

Attributes
- Width : Width of video area
- Height : Height of video area
- Poster : Still Image file projected on screen before video gets displayed

Syntax is –

<video src="http://.......ogv" controls width="300" height="250"></video>

Article

Article

- Represents independent component on page
- Separates itself form other elements on page
- Can be used most effectively in forum posts, blogs, magazine or newspaper etc.

Syntax is

```
<article>
<header>
<h1>The Very First Rule of Life</h1>
<p>Published : <time pubdate="pubdate">2008-10-08</time></p>
</header>
<p>If there's a microphone anywhere near you, assume it's hot and
sending whatever you're saying to the world. Seriously.</p>
<p>...</p>
<footer>
<a href="?comments=1">Show comments...</a>
</footer>
</article>
```

Modernizr

➢ **What's is Modernizr**

- It is (http://www.modernizr.com) an open source

- It's a JavaScript library that detects HTML5 & CSS3 features supported by Web Browser

➢ **How does this work?**

- Import JavaScript library in your HTML header

```
<script src="modernizr.min.js" type="text/javascript"></script>
```

```
if (Modernizr.audio)
{/* properties for browsers that support audio */}
else{
/* properties for browsers that does not support audio */
}
```

Canvas

➤ **Why do you need Canvas?**

  – A canvas is a rectangle in your web page within which you can use JavaScript to draw shapes

  – Canvas can be used to represent something visually in your browser

    • Simple Diagrams
    • Fancy user interfaces
    • Animations
    • Charts and graphs
    • Embedded drawing applications
    • Working around CSS limitations

➤ **Syntax is**

```
<canvas id="myCanvas"></canvas>
<script type="text/javascript">
var canvas=document.getElementById('myCanvas');
var ctx=canvas.getContext('2D');
ctx.fillStyle='#FF0000';
ctx.fillRect(0,0,80,100);
</script>
```

HTML5 Training

HTML5 Canvas

In this lesson, you have learnt about:

- HTML5 introduces new and enhanced form elements those who caters to every need of modern Web Designing

- It also introduces a new JavaScript library, Modernzr, that helps you detect HTML5 feature capabilities of your websites

Review Question

Question 1: A_____ is a textbox that hold a text in lighter shade when there is no value and not focused

Question 2: A_____is a JavaScript library that helps you add HTML5 capabilities to your websites