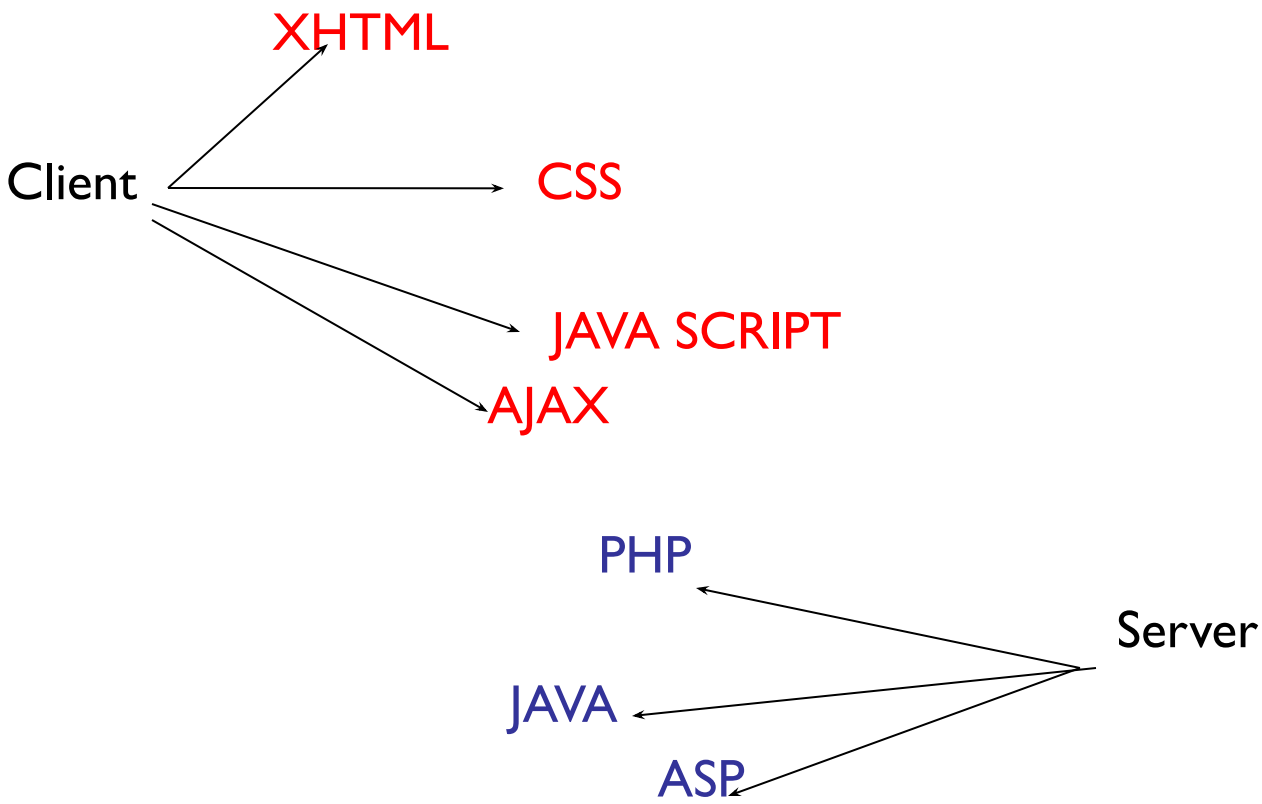
WEBSITE Technologies

Web site - Client & Server part



HTML

HTML VS XHTML

SGML(AICTE- rule)

↓

HTML (CEC)

- Standard notation for describing text-formatting languages (html, xml, xhtml).
- Tim Berners-Lee – HTML - World Wide Web Consortium (W3C)

- W3c standardize web technologies

HTML 2.0 (1995)- Initial

↓

HTML 3.2 (1997) – Competition finished

↓

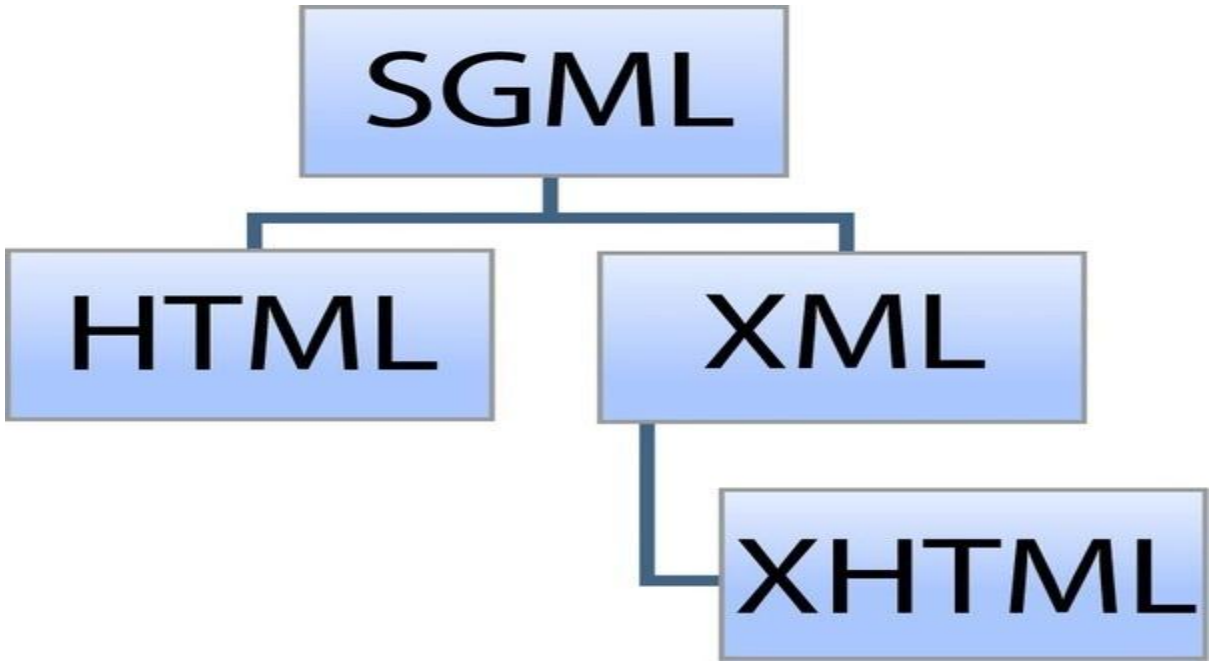
HTML 4.01(1999)

XHTML 1.0 (2000)

* XHTML 1.0 Redefinition of HTML 4.01 using XML.
  1. Strict (we follow)
  2. Transitional
  3. Frameset

XHTML 1.1 (Current)

XHTML 2.0 (developing)



3

HTML	XHTML
Because of its lax syntax rules, HTML is much easier to write	Requires a level of discipline
Many website still running in HTML	Older browsers have problems with some parts of XHTML
HTML documents lack consistency because of no strict rules enforcements	XHTML has strict syntactic rules that impose a consistent structure on all XHTML documents.
Only manual way to detect errors	XHTML document, its syntactic correctness can be checked, either by an XML browser or by a validation tool

BASIC SYNTAX

- Fundamental syntactic units of HTML are called tags.

- SYNTAX : < TAG NAME >

Tag's name surrounded by angle brackets – lower case(A a)

E.g.: <!--misspelled tag name is error & ignored

- Opening tag and its closing tag together specify a container.

- Data between opening & closing tag is **content,** which is displayed in the browser.

 This is simple stuff. // ELEMENT

CONTENT + CONTAINER= ELEMENT

Attributes

- Specify alternative meanings of a tag.
- Within opening tag's name and its right angle bracket
- Lower case
- As key value pair
- =
- Value in double quotes.

e.g This is simple stuff

- Comments for user only:

<!-- anything except two adjacent dashes -->

- Ignore all unrecognized tags & white spaces
- Special tags

```
<p> This is
    simple stuff
</p>
```

o/p : Expected: This is
simple stuff

Actual : This is simple stuff

Standard XHTML Document Structure

- **XHTML = HTML + XML**

- **FIRST LINE:** <?xml version = “1.0” encoding = “utf-8”?>

  <!– - IDENTIFY THIS DOCUMENT IS XML TYPE - ->

- **SECOND LINE:**

  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

- Should contain 4 tags
    1. <html>
        2. <head>
            3.<title>
                4.<body>

- **THIRD LINE:**

    <html xmlns = “http://www.w3.org/1999/xhtml”>

- **Xmlns** is namespace (studied later)
- Each xhtml document has
    1. head- meta data
    2. body - display

Basic Text Markup

1. Paragraph <p>

* XHTML does not allow text to be placed directly in a document body
* Multiple space into single space
* Browser puts as many word to fill a line
* line break are ignored

```
<p>
   Mary had
a
   little lamb, its fleece was white as snow. And
 everywhere that
  Mary went, the lamb
 was sure to go.
</p>
```

Mary had a little lamb, its fleece was white as snow and everywhere that mary went, the lamb was sure to go.

2. **Line Breaks
**

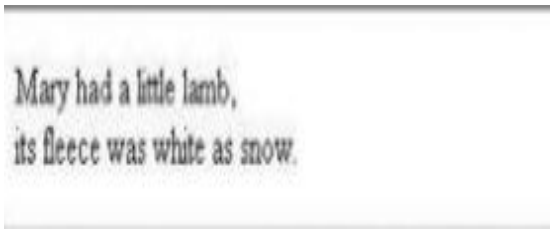
* Text requires a line break without the preceding blank line

*No content and therefore has no closing tag

* **Slash** indicates that the tag is both an opening and closing tag.

*Space before the slash represents the absent content.

```
<p>
Mary had a little lamb, <br />
  its fleece was white as snow.
</p>
```



3. **Preserving White Space**

* <pre> …….</pre>
* Preserve the white space in text
* Prevent eliminating multiple spaces & ignoring embedded line breaks
* O/p element in monospace

```
<p><pre>
Mary
    had a
        little
            lamb
</pre>
```

```
Mary
    had a
        little
            lamb
```

4. **Headings <hx> ……**

* Six level of heading
* <h1> - larger
*<h4> - use default size of text
*Vertical break before & after

```
<h1>Heading 1</h1>
<h2>Heading 2</h2>
<h3>Heading 3</h3>
<h4>Heading 4</h4>
<h5>Heading 5</h5>
<h6>Heading 6</h6>
```

5 .Block Quotations

* Set off from the normal flow of text in a document

* Depends on browser- boldl/ italics/ double quotes

* <blockquote> ……</blockquote>

* Usually content indented, either on the left or right side or both

Abraham Lincoln is generally regarded as one of the greatest presidents of the United States. His most famous speech was delivered in Gettysburg, Pennsylvania, during the Civil War. This speech began with

> "Fourscore and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.
>
> Now we are engaged in a great civil war, testing whether that nation or any nation so conceived and so dedicated, can long endure."

Whatever one's opinion of Lincoln, no one can deny the enormous and lasting effect he had on the United States.

```
<body>
  <p>
    Abraham Lincoln is generally regarded as one of the greatest
    presidents of the United States. His most famous speech was
    delivered in Gettysburg, Pennsylvania, during the Civil War.
    This speech began with
  </p>
  <blockquote>
    <p>
      "Fourscore and seven years ago our fathers brought forth on
      this continent, a new nation, conceived in Liberty, and
     dedicated to the proposition that all men are created equal.
    </p>
    <p>
      Now we are engaged in a great civil war, testing whether
      that nation or any nation so conceived and so dedicated,
      can long endure."
    </p>
  </blockquote>
  <p>
    Whatever one's opinion of Lincoln, no one can deny the
    enormous and lasting effect he had on the United States.
  </p>
```

6.Content-based style

* For Font

* Indicates the particular kind of text that appears in their content

* Three mostly used

1. **emphasis** tag, -italics
2. **strong** tag, - bold
3. **code** tag, <code> - monospace- coding

```
<body>
    <p> The following code is about the calculatio of price:</p>
    <em> The main content is </em>
    <strong> Equation ,</strong>
    <code> cost = quantity * price </code>
</body>
```

The following code is about the calculatio of price:

The main content is **Equation** , `cost = quantity * price`

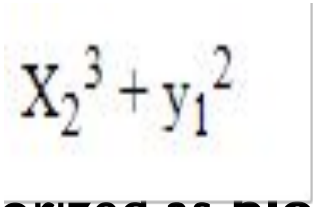
- Subscript and superscript characters can be specified by

1. <sub>

2. <sup>

* It is Not content based tag

** X₂³ + y₁²*



XHTML tags are categorized as **block** or **inline**

1. Inline :content on the current line – No line break

2. **block** : breaks the current line so that its content appears on a new line

7. Character Entities

1. Characters do not appear on keyboard (degree)

2. Characters have special meaning.so cannot be typed as themselves **E.g** *< , >, &*

3. Non-breaking space- hard space- do not squeeze them out.

*For these, browser provided Collection of special characters

*These special characters are defined as **entities**, which are **codes** for these characters.

* An entity in a document is replaced by its associated character by the browser

Table 2.1 Some commonly used entities

Character	Entity	Meaning
&	`&`	Ampersand
<	`<`	Is less than
>	`>`	Is greater than
"	`&quot;`	Double quote
'	`&apos;`	Single quote (apostrophe)
¼	`&frac14;`	One-quarter
½	`&frac12;`	One-half
¾	`&frac34;`	Three-quarters
°	`&deg;`	Degree
(space)	` `	Nonbreaking space

8. Horizontal Rules <hr />

* inline tag
* <hr />
* Places a **line** across the screen
* default size : 3px

---

9. **Meta Element**

* Meta data: provide information about the document
* Used by search engines for crawling
* No content- information is carried in attributes

- Two attributes

    1. **name-** keyword, author, title, description
    2. **content-** descriptive data

```
<meta name = "Title" content = "Don Quixote" />
<meta name = "Author"  content = "Miguel Cervantes" />
<meta  name = "keywords"  content = "novel,
 Spanish literature, groundbreaking work" />
```

10. Images <img />

* Insert images into display

* Suitable images types are:

*GIF- 8bit-Graphic Interchange Format

*jpeg/jpg-24bit-Joint Photographic Experts Group

*PNG: Portable Network Graphics

*jpeg has reduced size – good compression mechanism- preferred

* Jpg less transparency but many color

* PNG- replacement of GIF-(good transparency + many color) but more space needed.

****

* inline tag

* four attributes:

1. **src-** specify the location of image file
    * absolute
    * relocative
2. **alt-** text to be displayed when it is not possible to display the image
3. **height & width-** in pixel- optional

11. **Hypertext Links <a>**

* Inline

* Pointer to some other document

* Can point to web page, image, video & audio- hyperlink

* Specify the target as URL (absolute or relative path)

*only one attribute is required: href (hypertext reference).

*The value assigned to href specifies the target of the link.

* source- target

*Clickable link the user sees, is restricted to text, line breaks, images, and headings i.e an image can be a link

E. g **<a href="register.html"> CLICK HERE </ a>**

- E.g image become a link

```
<a href = "c210data.html" >
  <img src = "small-airplane.jpg"
       alt = "An image of a small airplane" />
    Information on the Cessna 210
</a>
```

*If target of a link is some element within the document
(use # pound)

How to specify it ?

* Every target element include **id** attribute- which can be used

* id value is unique within the document.

E.g **<h2 id = “avionics”> Avionics </h2>**

** What about avionics? **

** Avionics **

- this link points to avionics named element in AIDAN1 page

12. **LISTS**

* Unordered (bullet) - **<ul>**
* Ordered (1,2,3……)- **<ol>**
* Definition lists (In Text books)- **<dl>**

- All are s block tag.

- Each item in a list is specified with an **<li>** tag (list item). Any tags can appear in a list item, including nested lists.

- List item is implicitly preceded by a bullet.

- Order of items is important
- Sequential no's-Arabic numerials
- List can be nested-

  <!– not ok -->

   <!-- ok -->

- Ordered lists can be nested in unordered lists and vice versa.

- Definition lists are used to specify lists of terms and their definitions, as in glossaries

<dl> : within

<dt> : term to be define

<dd> : definition itself

- Defined term @ left margin & Definition are indented or line following it

```
<dl>
    <dt>IP </dt>
    <dd> Internet protocol </dd>
    <dt>lex</dt>
    <dd> Lexical analyzer</dd>
</dl>
```

output: IP

Internet protocol

Lex

Lexical analyzer

```
<ul>
   <li>ICE CREAM</li>
   <li>CHOCOLATE</li>
   <li>BIRIYANI</li>
</ul>
```

OUTPUT: *ICE CREAM
*CHOCOLATE
*BIRIYANI

```
<ol>
   <li>ICE CREAM</li>
   <li>CHOCOLATE</li>
    <li>BIRIYANI</li>
</ol>
```

OUTPUT: 1.ICE CREAM
2. CHOCOLATE
3. BIRIYANI

13. **Table <table>**

- Table is a matrix of cells.
- Two kinds of lines
  1. Border (around table)
  2. Rules (separate cell)
- Attributes:
  * border
  * margin
  * rowspan & colspan
  * cellpadding & cellspacing
- No border attribute -neither a border nor rules.
- border="border" -default size for border & rules.

- border = “3” specifies a border 3 pixels
- border=“0” no border and no rules
- If border= nonzero value

  then

  rules=1px
- Row of a table is specified with < tr>
- Row heading is specified using <th> - known as label tag
- Data cell of a row is specified with a data tag, <td>

	Apple	Orange	ScrewDriver
Breakfast	1	0	1
Lunch	1	1	0
Dinner	2	1	0

rowspan & colspan

- Tables have multiple levels of row or column labels in which one label covers two or more secondary labels.

Fruit Juice Drinks			
	Apple	Orange	ScrewDriver
Breakfast	1	0	1
Lunch	1	1	0
Dinner	2	1	0

```
<table border="border">
 <tr>
 <th colspan="3">Fruit     Juice Drinks</th>
 </tr>

 <tr>
    <th></th>
    <th>Apple</th>
    <th>Orange</th>
    <th>ScrewDriver</th>
```

- make the cell as wide as the specified number of rows /column below it in the table.

align and valign Attributes

- Used to specify the placement of the content within cell

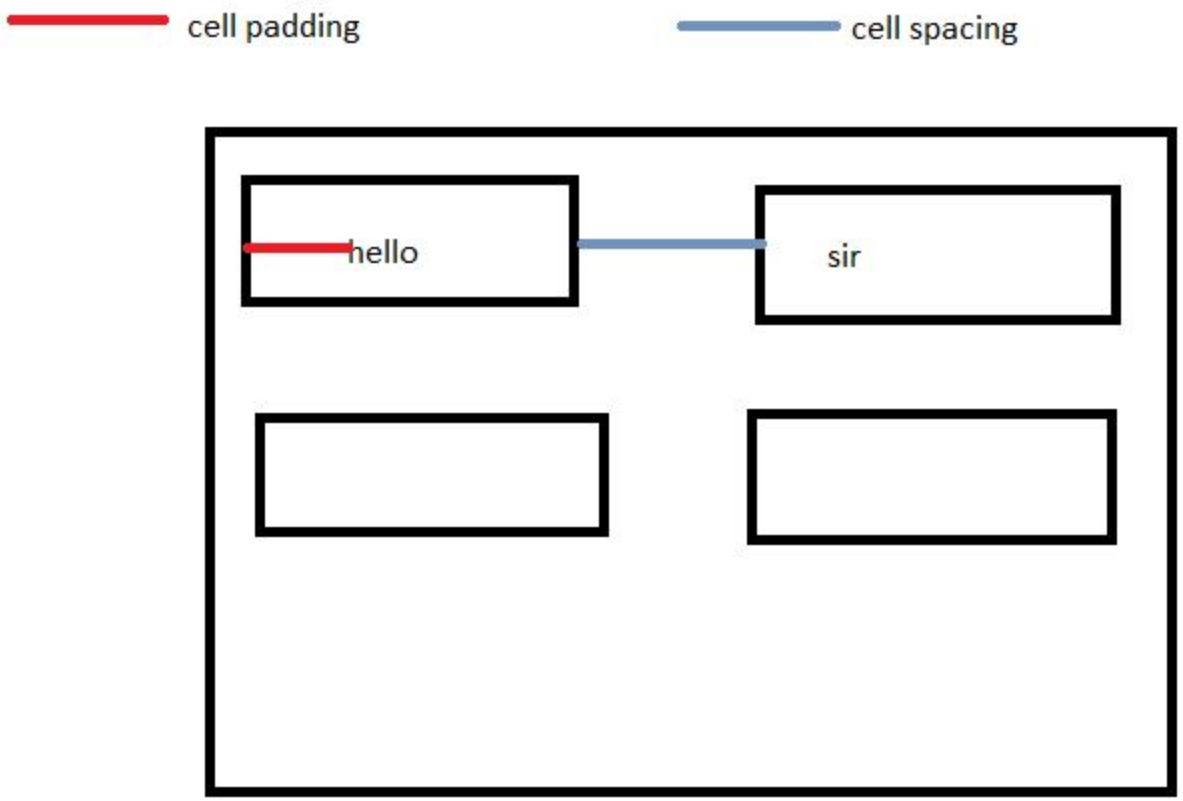
- align- horizontal placement of the content
  - left, right & center
- valign- vertical placement of the content
  - top & bottom

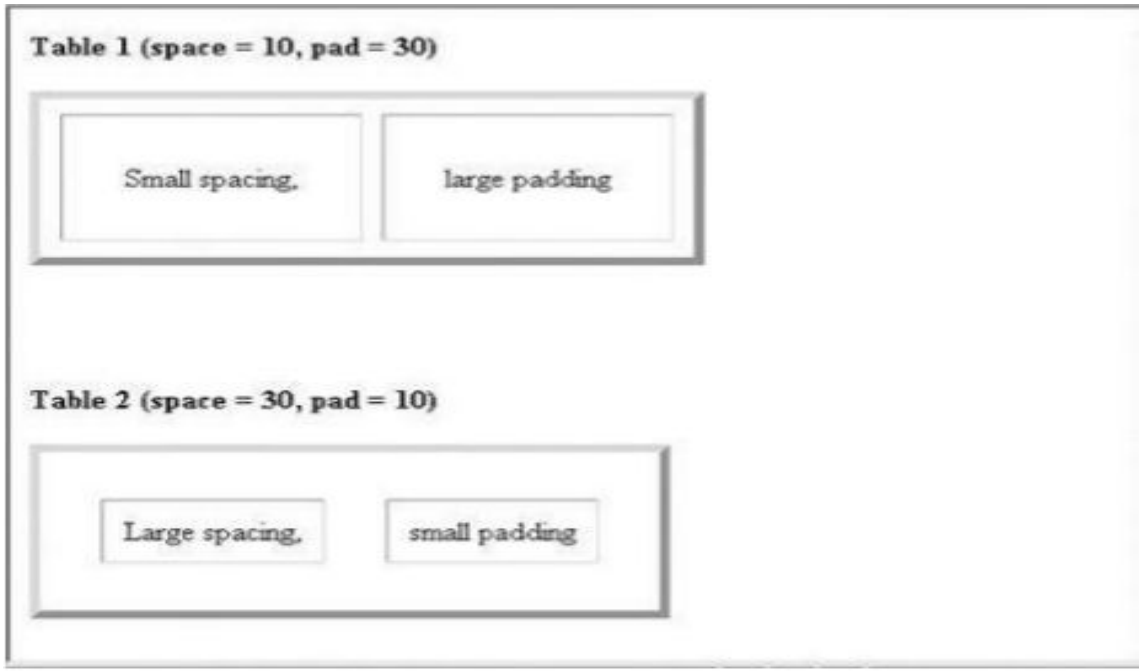
	column 1	column 2	column3
align	left	center	right
valign	default	top	bottom

```
  <table border="border">
<tr align="center">
<th></th>
<th>column1</th>
<th>column2</th>
<th>column3</th>
</tr>
<tr>
<td >align</td>
<td align="left"    > left </td>
<td align="center"> center </td>
<td align="right"  > right </td>
</tr>
<tr>
<td> valign </td>
<td> default </td>
 <td valign="top"> top </td>
<td valign="bottom"> bottom </td>
</tr> </table>
```

cellpadding and cellspacing :

- **cellpadding : Spacing b/w the content of a table cell & cell's inner wall**
- **Cellspacing: spacing between adjacent cells.**






```
<b>Table 1 (space = 10, pad = 30) </b><br /><br />
<table border = "5"  cellspacing = "10"  cellpadding = "30">
  <tr>
    <td> Small spacing, </td>
    <td> large padding </td>
  </tr>
</table>
<br /><br /><br /><br />
<b>Table 2 (space = 30, pad = 10) </b><br /><br />
<table border = "5"  cellspacing = "30"  cellpadding = "10">
  <tr>
    <td> Large spacing, </td>
    <td> small padding </td>
  </tr>
</table>
```

Table has 3 parts :

1. <thead> </thead>
2. <tfoot> </tfoot>
3. <tbody> </tbody>

// not given in note- please refer text book

14. Forms

- Used to collect input from user.
- Controls or widget (input control, checkbox control)
- Control tags are inline tags
- Control have value (provided by user)
- Every form requires a submit button
- On clicking submit button, form data is encoded and sent to the web server for processing (server side scripting).

<form>

- Block tag
- All controls should appear inside of it.
- Two attributes

1. action : URL of server side application which process data
2. method : way of transferring data to server side-2 ways

*get :- by url

-?

-query string

-depends on browser

-limit on size

-less security

* post : as separate message to application pgm- no size limit

<form action=“ ” method=“get”>

control tags

</form>

The <input> Tag:

- All form controls are Inline tag
- Used to generate :
  - * text control
  - * password
  - * checkbox
  - * radio button
  - * action buttons
- Possible attributes:
  - * type: specifies the particular kind of control
  - * name : name of controls – used to get value- not in submit & reset
  - * value : required only in checkbox & radio- initialize
- Values of these controls are sent to the server when the Submit button is clicked

- Text control (text box) creates a horizontal box into which the user can type text.

  * single line command
  * default 20 characters
  * size : no of characters-30-scrolled
  * maxlength : maximum no of characters
  *name : not appeared in the display

```
<form action="" method="post">
 <input type="text" name="txt_user" size="30" />
                (or)
<input type="text" name="txt_user" size="30"></input>
 </form>
```

- password control: content is in bullet letter

```
<input type="password" name="txt_pwd" size="30" />
```

- Labeling : for maintains

- No connection between the label and the control.
- Text box and its label are encapsulated together
- Use : * used by speech synthesizer
  * cursor move to control while selecting label content
  *label content is differentiated from other content

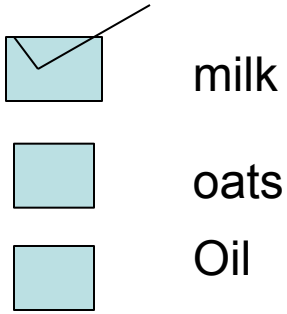
<label> Phone: <input type = “text” name = “phone” /> </label>

Checkbox and radio controls :

- are used to collect multiple-choice input
- button that is either on or off (checked or not)
- If on, the value of the button is the string assigned to its value attribute.
- If off: then its value is not in the form

- Checkbox button requires a **name** & **value** attribute in its <input>
- If attribute checked="checked", button is initially on

```
<input type="checkbox" name="a" value="milk" checked="checked">
    milk </input>
<input type="checkbox" name="a" value="oats" > oats</input>
<input type="checkbox" name="a" value="Oil" > oil</input>
```



- only one radio button can be pressed at any time.
- Only one selection is possible
- All radio buttons in a group must have the **name** attribute

```
<input type="radio" name="gender" checked="checked"
                value="m">Male  </input>
<input type="radio" name="gender" value="f">Female </input>
```

- Value passed to server is either m or f based on selection

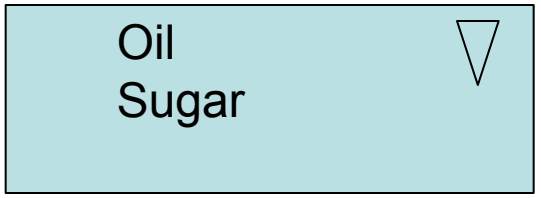
<select> Tag

- Many checkbox/ radio button consume screen space
- Multiple-choice data from a user
- Drop down list with selection of one item at a time

- multiple="multiple" for selecting more than one item
- Size ="3" means 3 items are displayed always, default is 1.
- Item is specified using <option>
- <Option> contain **selected** attribute for preselection.

```
<select name="items" multiple="multiple">
<option> Rice </option>
<option selected="selected">Oil</option>
<option> Sugar </option>
</select>
```

if size=1



if size=2

<textarea>

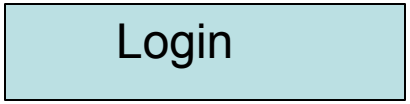
- Multiline text box
- Used to enter address like details
- Cols & rows attribute used to resize the text area

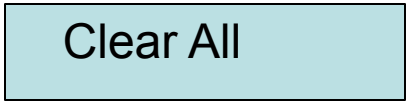
```
<textarea name="address" cols="6" rows="8">

</textarea>
```

Action Button:

1. submit button: used to send form date to server for processing
2. reset button : clear the form data

```
<input type="submit" value="Login"/>
<input type="reset" value="Clear All"/>
```





HTML 5

- W3c 2012 recommendation.

- <!doctype html>

- Native Support for audio & video: no plugin need
- Support computer & mobile browser
- Many addition semantic tag
    - *<header>, <footer>, <section>
- Additional attribute
    - *date, time, calendar,range
- Support canvas, audio, svg image, videos

XHTML vs HTML (syntactic)

- Case sensitivity
- Closing tag
- Quoted attribute values
- id and name attributes
- Element nesting
- Syntax validator