Contents

What is a Web Page?

- Web page is text file containing HTML
- HTML – Hyper Text Markup Language
  - A notation for describing
    - document structure (semantic markup)
    - formatting (presentation markup)
- The markup tags provide information about the page content structure

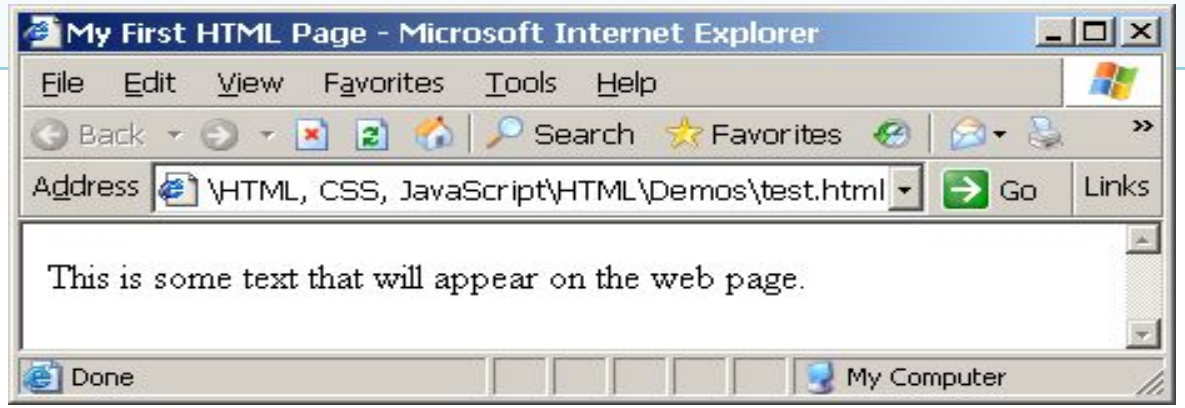
Creating HTML Pages

- An HTML file must have an `.htm` or `.html` file extension
- HTML files can be created with text editors:
  - NotePad, NotePad ++, PSPad
- Or HTML editors (WYSIWYG Editors):
  - Microsoft FrontPage
  - Macromedia Dreamweaver
  - Netscape Composer
  - Visual Studio

First HTML Page

test.html

```
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
     <p>This is some text...</p>
  </body>
</html>
```



HTML Structure

- HTML is comprised of “elements” and “tags”
  - Begins with `<html>` and ends with `</html>`
- Elements (tags) are nested one inside another:

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

- Tags have attributes:

```
<img src="logo.jpg" alt="logo" />
```

- HTML describes structure using two main sections: `<head>` and `<body>`

HTML Code Formatting

- The HTML source code should be formatted to increase readability and facilitate debugging.
  - Every block element should start on a new line.
  - Every nested (block) element should be indented.
  - Browsers ignore multiple whitespaces in the page source, so formatting is harmless.
- For performance reasons, formatting can be sacrificed

First HTML Page: Tags

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
     <p>This is some text...</p>
  </body>
</html>
```

Opening tag

Closing tag

An HTML element consists of an opening tag, a closing tag and the content inside.

First HTML Page: Header

HTML header

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
     <p>This is some text...</p>
  </body>
</html>
```

First HTML Page: Body

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    <p>This is some text...</p>
  </body>
</html>
```

HTML body

First HTML Page

test.html

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
     <p>This is some text...</p>
  </body>
</html>
```

Basic HTML Tags

1. Headings
2. Paragraph
3. Colors
4. Fonts
5. List
6. Anchor Tag
7. Image
8. Table
9. Form

1) Headings

- Headings are important because search engines use the headings to index the structure and content of your web pages.

<h1> text </h1> -- largest of the six
<h2> text </h2>
<h3> text </h3>
<h4> text </h4>
<h5> text </h5>
<h6> text </h6> -- smallest of the six

align=*"position"* --left (default), center or right

2) paragraph

- defines a paragraph
- Add **align**=*"position"* (left, center, right)
- Multiple 's do not create blank lines
- Use <br> for blank line
- Fully-specified text uses and , but is optional

3) Colors

- Values for **bgcolor** and **color**
  - many are predefined (red, blue, green, ...)
  - all colors can be specified as a six character hexadecimal value: #RRGGBB
  - #FF0000 – red
  - #888888 – gray
  - #00FF00 –green
  - #000000 – black

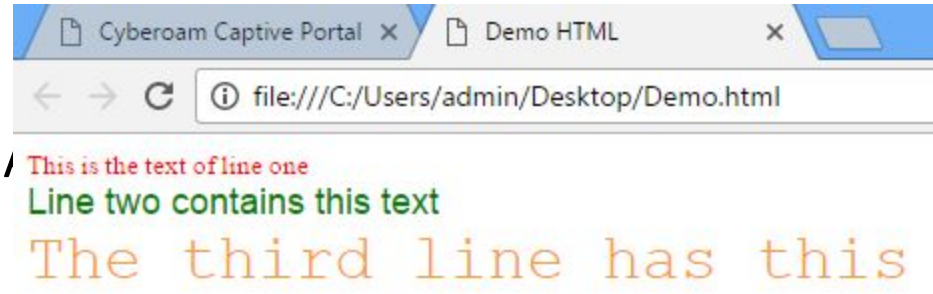
4) Fonts

- The <font> tag specifies the font face, font size, and color of text.
- The <font> tag is not supported in HTML5.

```
<font color="red" size="2" face="Times Roman">
This is the text of line one </font>

<font color="green" size="4" face="
Line two contains this text </font>

<font color="#FF9933" size="6" face="Courier“>
The third line has this additional text </font>
```



5) List

Ordered List

1. Block-A
2. Block-B
3. Block-C
4. Block-D

a) Block-A
b) Block-B
c) Block-C
d) Block-D

A. Block-A
B. Block-B
C. Block-C
D. Block-D

i. Block-A
ii. Block-B
iii. Block-C
iv. Block-D

I. Block-A
II. Block-B
III. Block-C
IV. Block-D

Unordered List

- Block-A
- Block-B
- Block-C
- Block-D

- Block-A
- Block-B
- Block-C
- Block-D

- Block-A
- Block-B
- Block-C
- Block-D

5.1) Ordered List

```
<ol>
  <li> Item one </li>
  <li> Item two </li>
  <ol type="I" >
    <li> Sublist item one </li>
    <li> Sublist item two </li>
    <ol type="i">
      <li> Sub-sub list item one </li>
      <li> Sub-sub list item two </li>
    </ol>
  </ol>
</ol>
```

Types:

Type = 1 (default)
Type = a
Type = A
Type = I
Type = i

Output

1. Item one
2. Item two
    I. Sublist item one
    II. Sublist item two
        i. Sub-sub list item one
        ii. Sub-sub list item two

5.2) Unordered List

```
<ul>
  <li> One </li>
  <li> Two </li>
  <ul type="circle">
    <li> Three </li>
    <li> Four </li>
    <ul type="square">
      <li> Five </li>
      <li> Six </li>
    </ul>
  </ul>
</ul>
```

Types:

Type = disc (default)
Type = circle
Type = square

Output

- One
- Two
  - Three
  - Four
    - Five
    - Six

6) <a> Anchor Tag (Hyperlinks)

- The <a> tag defines a hyperlink, which is used to link from one page to another.

Link to an absolute URL:
If you get spam, contact
Microsoft to report the problem.

Link to a relative URL:
See these references
concerning our fine products.

Link to a section within a URL:

Reference Section.

7) Images

- Syntax :

- **src** is required
- **alt** will specify the text to display if the Image not found
- **width**, **height** may be in units of pixels or percentage of page or frame
  - width="357"
  - height="50%"

Images (cont.)

<img src="dolphin.jpg" align="left" width="150" height="150" alt="dolphin jump!">

align=*position*	Image/Text Placement
Left	Image on left edge; text flows to right of image
Right	Image on right edge; text flows to left
Top	Image is left; words align with top of image
Bottom	Image is left; words align with bottom of image
Middle	Words align with middle of image

Image (cont.) => align="bottom"

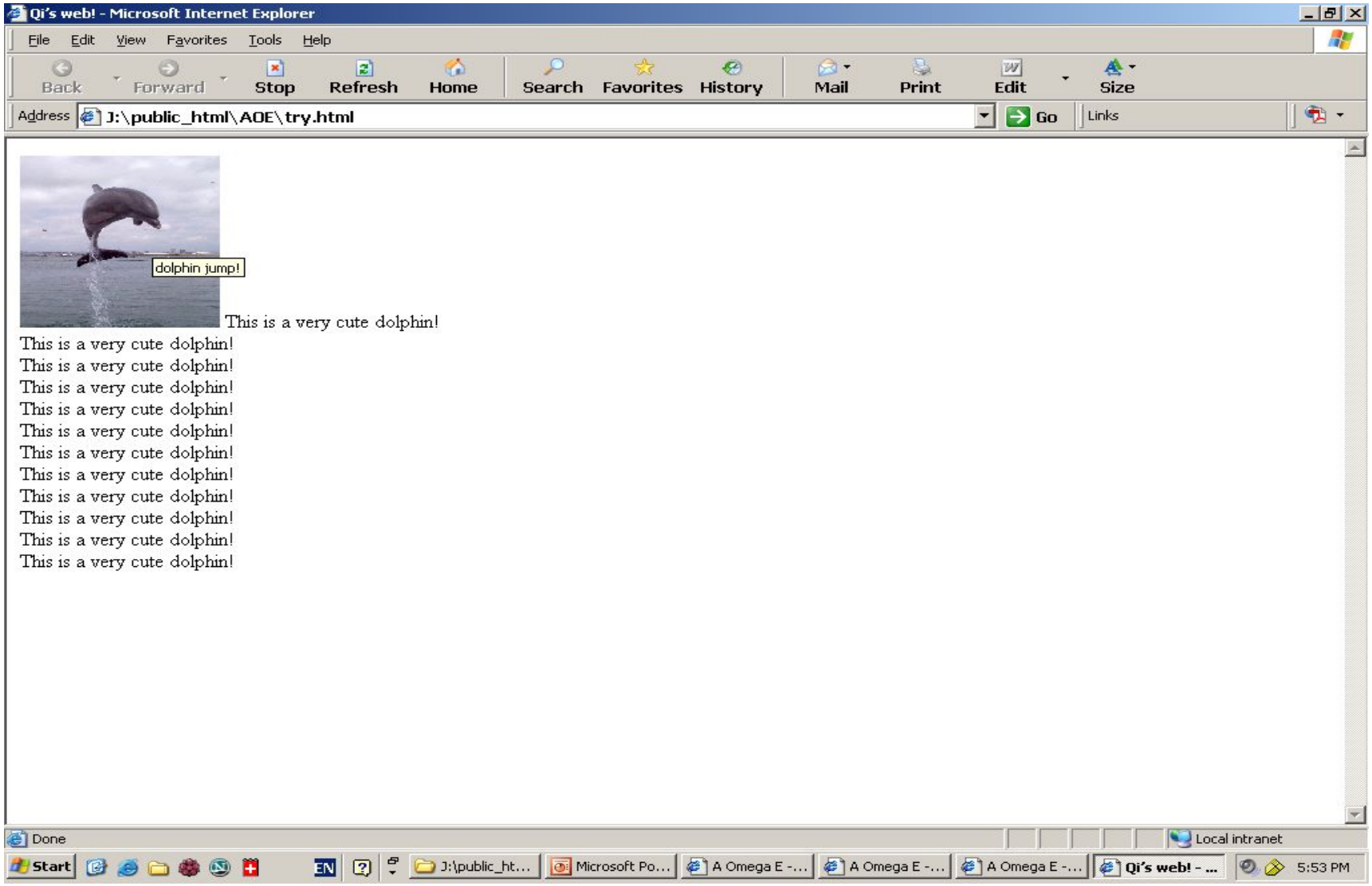
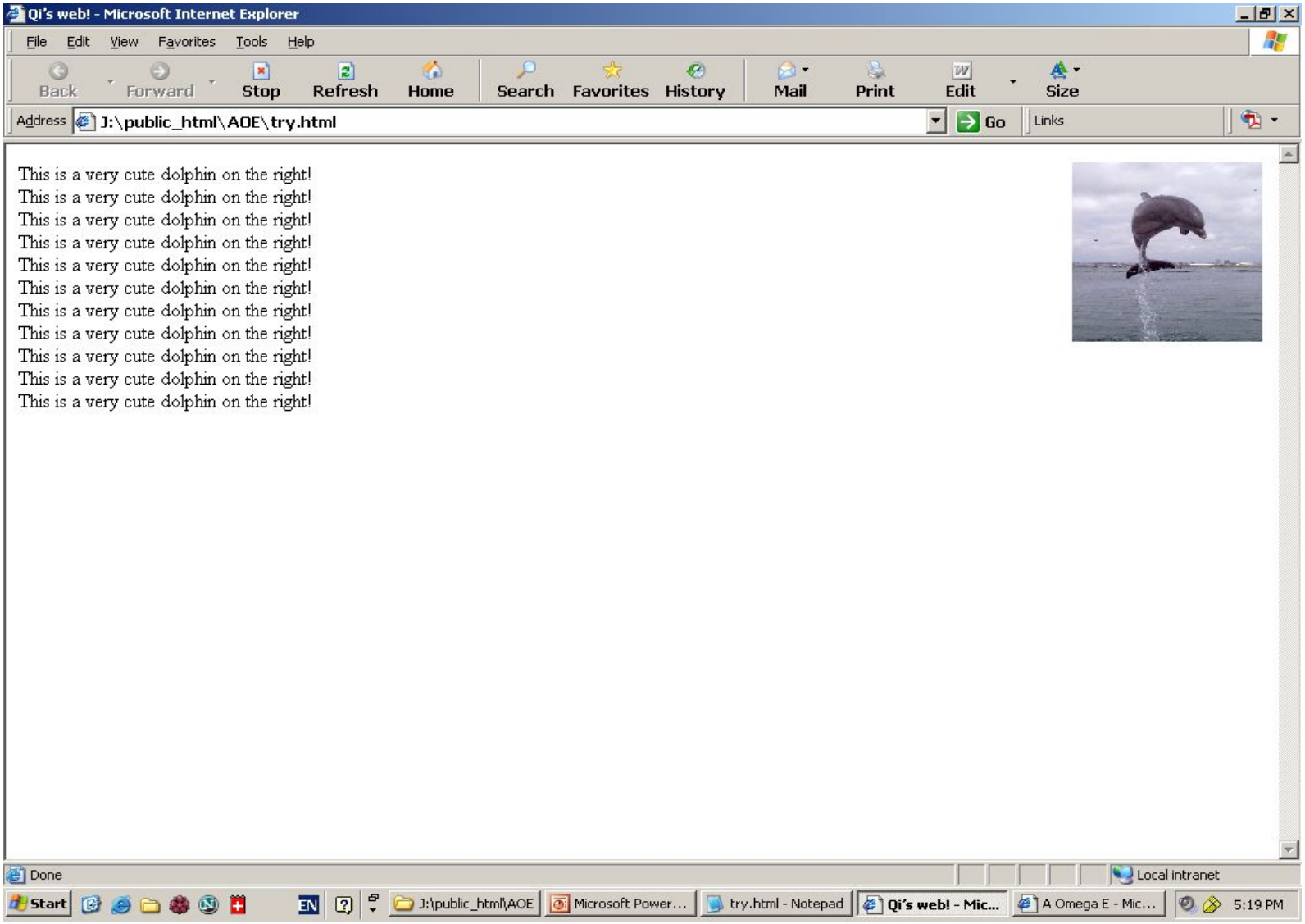


Image (cont.) => align="right"



8) Table

<table> table tag
<caption> optional table title
<tr> table row

```
<table border=1>
 <caption>
 <tr>
      <th>H
      <th>H
 </tr>
 <tr>
      <td>R
      <td>R
 </tr>
 <tr>
      <td>Row2 Col1 Data</td>
      <td>Row2 Col2 Data</td>
 </tr>
</table>
```

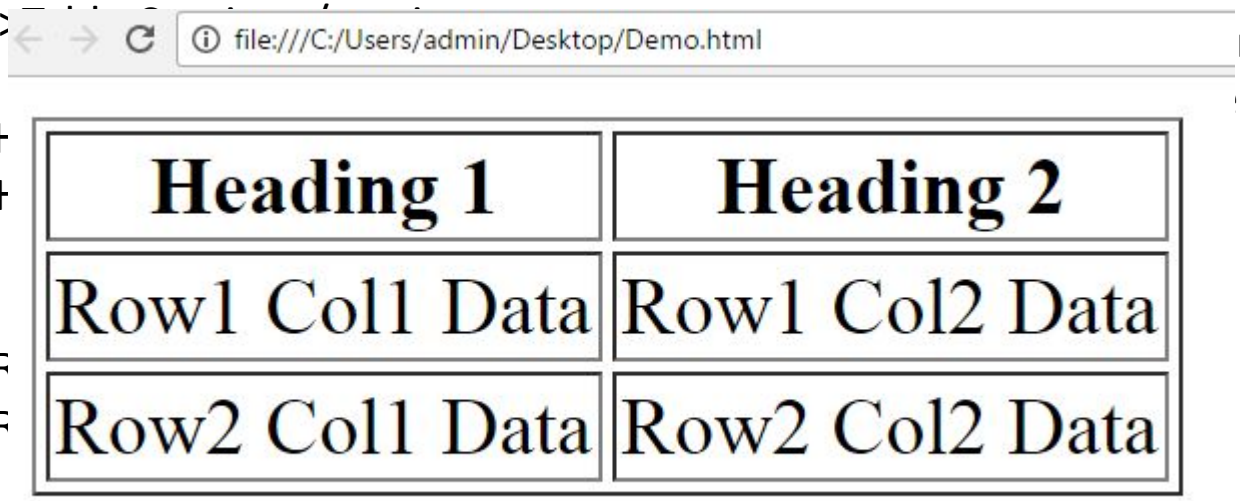


Table Element Attributes

- **align=*position*** -- left, center, right for table
- **border=*number*** -- width in pixels of border (default 0)
- **cellspacing=*number*** -- spacing in pixels between cells, default about 3
- **cellpadding=*number*** -- space in pixels between cell border and table element, default about 1
- **width=*number*[%]**-- width in pixels or percentage of page/frame width

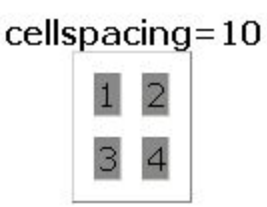
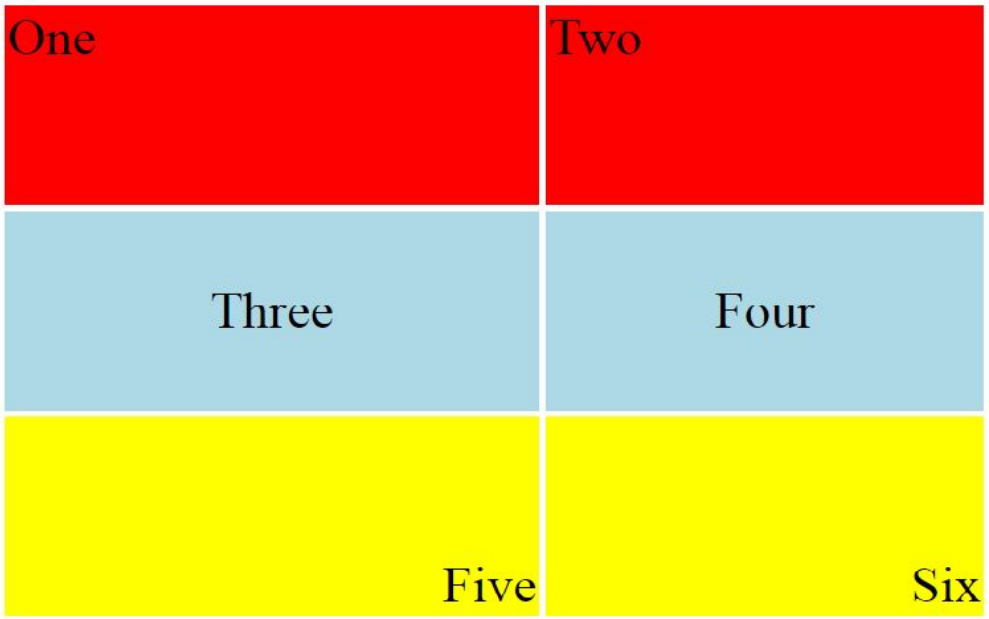


Table Row <tr> Attributes

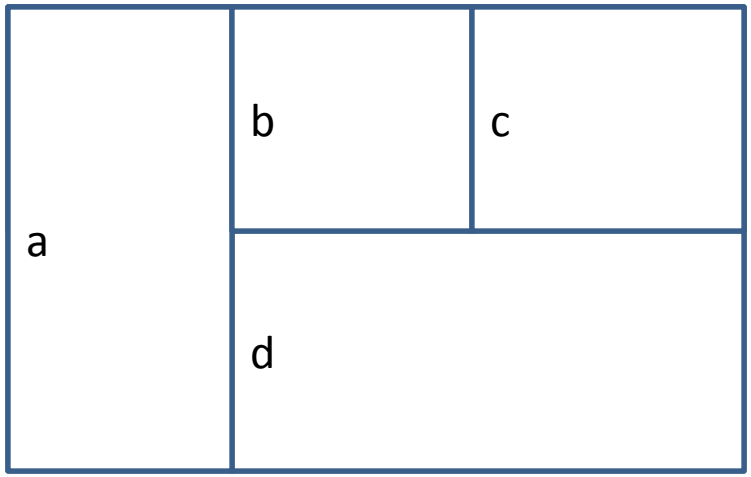
Valid for the table row:
align -- left, center, right
valign -- top, middle, bottom
bgcolor -- background color



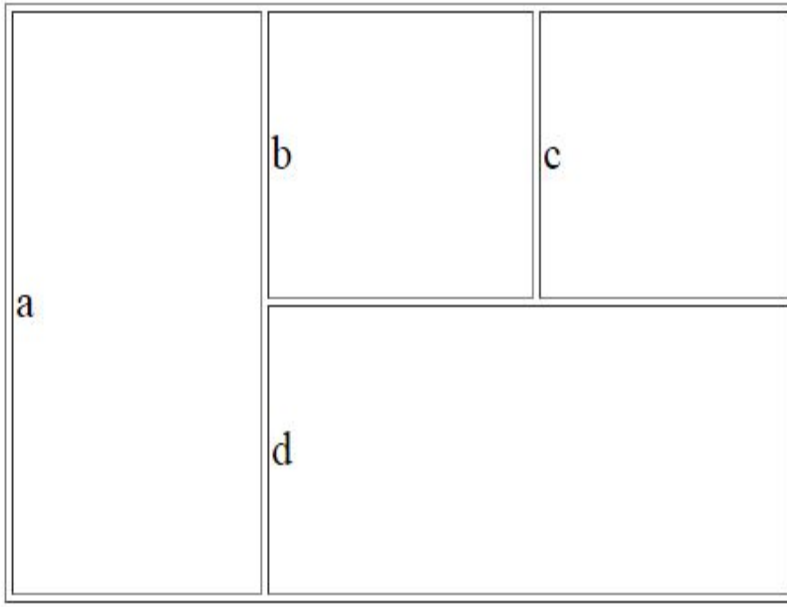

```
<table align="center" width="300" height="200">
	<tr align="left" valign="top" bgcolor="red">
		<td>One</td>
		<td>Two</td>
	</tr>
	<tr align="center" valign="middle" bgcolor="lightblue">
		<td>Three</td>
		<td>Four</td>
	</tr>
	<tr align="right" valign="bottom" bgcolor="yellow">
		<td>Five</td>
		<td>Six</td>
	</tr>
</table>
```

Irregular Table

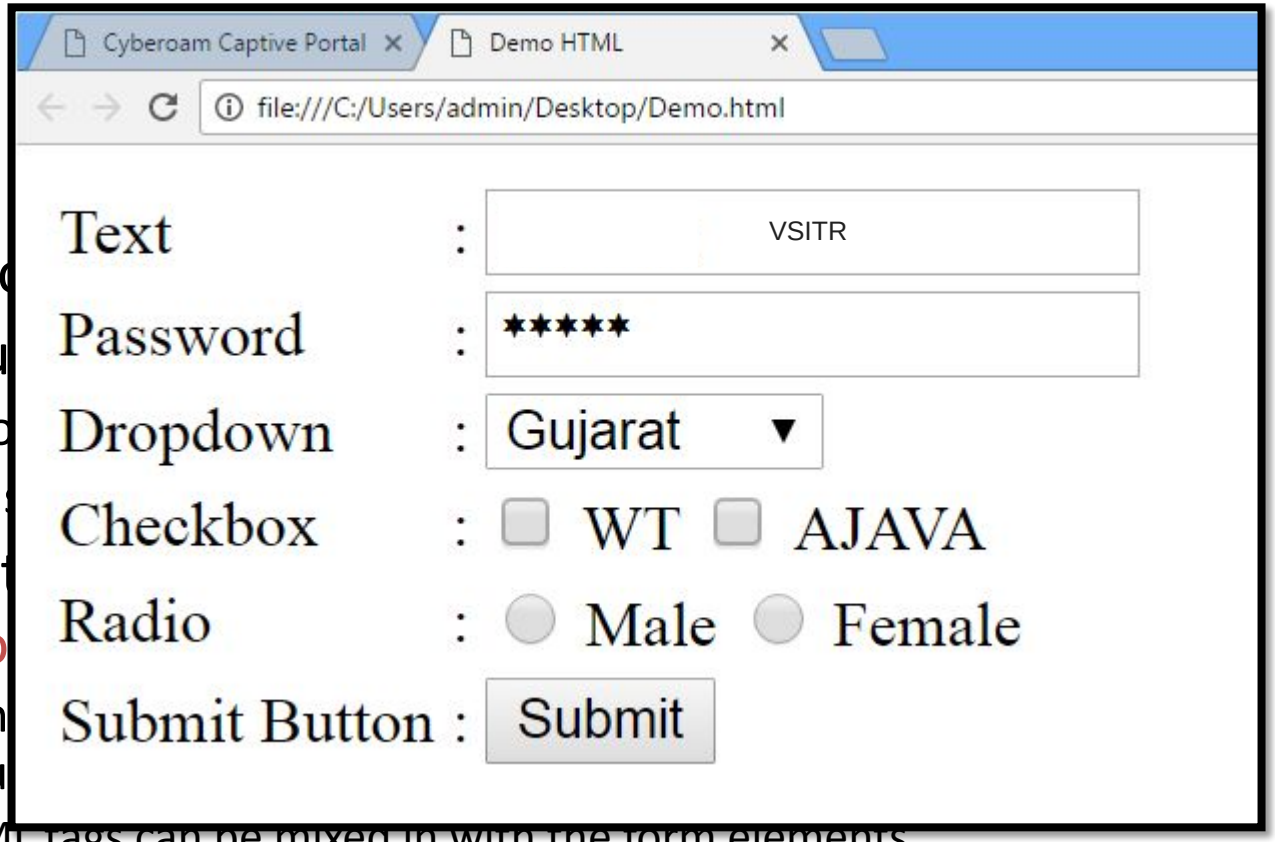
Valid for the table cell:
colspan
- how many columns this cell occupies
rowspan
- how many rows this cell occupies




```
<table align="center" width="300" height="200" bord
<tr>
	<td colspan="1" rowspan="2">a</td>
	<td colspan="1" rowspan="1">b</td>
	<td colspan="1"  rowspan="1" >c</td>
</tr>
<tr>
	<td colspan=“2"  rowspan="1">d</td>
</tr>
</table>
```



9) HTML Form



- <form> is just an
- HTML forms are u
  - Usually the purpo
  - The information i
- A form is an area f
  - The syntax is: <fo
  - Form elements in drop-down menu
  - Other kinds of HTML tags can be mixed in with the form elements
  - A form usually contains a Submit button to send the information in the form elements to the server
  - The form's ***parameters*** tell browser how to send the information to the server (there are two different ways it could be sent)

The <form> Tag

- The <form ***arguments***> … </form> tag encloses form elements (and probably other HTML as well)
- The arguments to form tell what to do with the user input
  - **action="*url*" (required)**
    - Specifies where to send the data when the Submit button is clicked
  - **method="get" (default)**
    - Form data is sent as a URL with ?form_data info appended to the end
    - Can be used *only* if data is all ASCII and not more than 100 characters
  - **method="post"**
    - Form data is sent in the body of the URL request
    - Cannot be bookmarked by most browsers
  - **target="*target*"**
    - Tells where to open the page sent as a result of the request
    - ***target*= _blank** means open in a new window
    - ***target*= _top** means use the same window

Input tags

- Text field
  - Example: <input type="text" name="inputname"/>

VSITR

- Password field
  - Example: <input type="password" name="inputname"/>

.....

- Radio buttons
  - Example:

```
<input type="radio" name="gender">  Male
<input type="radio" name="gender"> Female
```

Male Female

- Check boxes
  - Example:

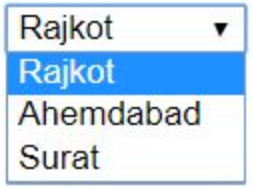
```
<input type="checkbox" name="Roll1"> Roll No 1  <b
<input type="checkbox" name="Roll2"> Roll No 2  <b
<input type="checkbox" name="Roll3"> Roll No 3  <br/>
```

Roll No 1
Roll No 2
Roll No 3

Input tags (cont.)

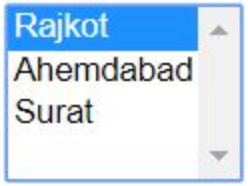
- Dropdown list
  - <select> tag is used to create a drop-down list in HTML.
  - <option> tags inside the <select> tag define the available options in the list.
  - Example:

```
<select>
        <option value="1">Rajkot</option>
        <option value="2">Ahemdabad</option>
        <option value="3">Surat</option>
</select>
```



  - Example (multiple select):

```
<select multiple="multiple">
        <option value="1">Rajkot</option>
        <option value="2">Ahemdabad</option>
        <option value="3">Surat</option>
</select>
```



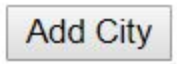
Input tags (cont.)

- Text area
  - <textarea> tag defines a multi-line text input control.
  - Example :

```
<textarea rows="8" cols="30">
        VSITR ITR
</textarea>
```

- Submit Button
  - Submit button is used to submit the data to the form action url.
    - Example :

```
<input type="submit" value="Add City">
```



XHTML

Introduction to XHTML

- Problems were initially caused in the development of HTML by a lack of standards.
- Browser makers tended to add proprietary extensions that limited those who could see the sites in the way that was intended .
- This was been termed the “**browser wars**” of **1990s**.
- The **W**orld **W**ide **W**eb **C**onsortium (**W3C**) became the main source for standards that browsers were to follow.

Introduction to XHTML (Cont.)

- The evolution of HTML led to the **separation** of formatting instructions from content, leading to the development of CSS.
- HTML was **redeveloped** as XHTML, using **XML** to apply more strict approach to web coding.
- **XHTML** provides a **more stable platform for CSS**

XHTML

- XHTML stands for E**X**tensible **H**yper**T**ext **M**arkup **L**anguage
- XHTML is almost **identical** to HTML 4.01
- XHTML is a **stricter** and **cleaner** version of HTML 4.01
- XHTML is HTML defined as an XML application
- XHTML is supported by all major browsers.

Characteristics of XHTML

- **DOCTYPE** is mandatory
- XML **namespace** attribute in <html> is mandatory
- **<html>, <head>, <title>,** and **<body>** is mandatory
- elements must be properly **nested**
- elements must always be **closed**
- elements must be in **lower case**
- documents must have one **root** element
- Attribute names must be in **lower case**
- Attribute values must be **quoted**
- Attribute **abbreviation** is **forbidden**

XHTML DOCTYPE

- An XHTML document must have an XHTML DOCTYPE declaration.
- XHTML 1.0 document type definitions are corresponds to **four** Dtds:
  - Strict
  - Basic
  - Transitional
  - Frameset
- The most **commonly** used is the **XHTML Transitional** document.

XHTML DOCTYPE (Cont.)

- XHTML 1.0 Strict:

```
<!DOCTYPE html
 PUBLIC "-//W3C//Dtd XHTML 1.0 S
"http://www.w3.org/tr/xhtml1/Dtd
```

- XHTML 1.0 Transitional:

```
<!DOCTYPE html
PUBLIC "-//W3C//Dtd XHTML 1.0
"http://www.w3.org/tr/xhtml1/D
```

- XHTML 1.0 Basic:

```
<!DOCTYPE html
PUBLIC "-//W3C//Dtd XHTML 1.0
"http://www.w3.org/tr/xhtml1/D
```

- XHTML 1.0 Frameset:

```
<!DOCTYPE html
PUBLIC "-//W3C//Dtd XHTML 1.0
"http://www.w3.org/tr/xhtml1/Dtd/xhtml1-frameset.dtd" >
```

This DTD contains all HTML elements and attributes, but does **NOT INCLUDE** presentational or deprecated elements (like **font**). **Framesets** are **not allowed**.

This DTD contains all HTML elements and attributes, INCLUDING presentational and deprecated elements (like font). **Framesets** are **not allowed**.

This DTD is equal to XHTML 1.0 Strict, but allows you to **add modules** (for example to provide ruby support for East-Asian languages).

This DTD is equal to XHTML 4.01 Transitional, but **allows** the use of **frameset** content.

XHTML Document Structure

- A basic XHTML document consists of the following main parts:
  - xml **version**
  - The **DOCTYPE** (Dtd)
  - html document **root**
  - **xmlns** attribute for the html element
  - **head** element with a child **title** element
  - **body** element

1.	HTML stands for Hypertext Markup Language.	XHTML stands for Extensible Hypertext Markup Language.
2.	It was developed by Tim Berners-Lee.	It was developed by W3C i.e World Wide Web Consortium.
3.	It was developed in 1991.	It was released in 2000.
4.	It is extended from SGML.	It is extended from XML and HTML.
5.	The format is a document file format.	The format is a markup language.
6.	All tags and attributes are not necessarily to be in lower or upper case.	In this, every tag and attribute should be in lower case.
7.	Doctype is not necessary to write at the top.	Doctype is very necessary to write at the top of the file.
8.	It is not necessary to close the tags in the order they are opened.	It is necessary to close the tags in the order they are opened.

DIFFERENCE IN HTML and XHTML

Frame and Frameset

The <frameset> tag in HTML is used to define the frameset. Obsolete in HTML5.

```
<!DOCTYPE html>
<html>
    <head>
        <title>frameset attribute</title>
    </head>

    <!-- frameset attribute starts here -->
    <frameset rows = "20%, 60%, 20%">
        <frame name = "top" src = "attr1.png" />
        <frame name = "main" src = "gradient3.png" />
        <frame name = "bottom" src = "col_last.png" />
        <noframes>
            <body>The browser you are working does not
                                support frames.</body>
        </noframes>
    </frameset>
    <!-- frameset attribute ends here -->
</html>
```

https://www.geeksforgeeks.org/html-frameset-tag/

XHTML Document Structure (Ex.)

```
<?xml version="1.0" ?>
<!DOCTYPE HTML PUBLIC "-//W3C//Dtd XHTML 1.00 Strict//EN"
    "http://www.w3.org/tr/xhtml1/Dtd/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
   <head>
      <title>Hello</title>
   </head>
   <body>
      hellooooooooo
   </body>
</html>
```

META Tag

- Metadata is data (information) about data.
- The <meta> tag provides metadata about the HTML document.
- Metadata will **not be displayed** on the page.
- Meta elements are typically used to specify **page description**, **keywords**, **author** of the document, **last modified** and other metadata.
- The metadata can be used by search engines (**keywords**), browsers (how to **display** content or **reload** page) or other web services.

Meta Tag Attributes

Attribute	Value	Description
charset	*character_set*	Specifies the character encoding for the HTML document
content	*text*	Specifies the value associated with the http-equiv or name attribute
http-equiv	content-security-policy content-type default-style refresh	Provides an HTTP header for the information/value of the content attribute
name	application-name author description generator keywords viewport	Specifies a name for the metadata

Character Entities

- Character entities are used to display reserved characters in HTML.
- Characters that are not present on your keyboard can also be

Result	Description	Entity Name	Entity Number
	non-breaking space		
<	less than	&lt;	&#60;
>	greater than	&gt;	&#62;
&	ampersand	&amp;	&#38;
"	double quotation mark	&quot;	&#34;
'	single quotation mark (apostrophe)	&apos;	&#39;
¢	cent	&cent;	&#162;
£	pound	&pound;	&#163;
¥	yen	&yen;	&#165;
€	euro	&euro;	&#8364;
©	copyright	&copy;	&#169;
®	registered trademark	&reg;	&#174;

Introduction to HTML 5

- The DOCTYPE declaration for HTML5 is very simple:

  <!DOCTYPE html>

- The character encoding (charset) declaration is also very simple:

  <meta charset="UTF-8">

- New HTML5 Elements:
  - New semantic elements like <header>, <footer>, <article>, and <section>.
  - New form control attributes like number, date, time, calendar, and range.
  - New graphic elements: <svg> and <canvas>.
  - New multimedia elements: <audio> and <video>.
  - Some Elements Removed in HTML5

Introduction to HTML 5 (cont.)

- The following HTML4 elements have been removed from HTML5:

HTML 4	HTML 5
<acronym>	<abbr>
<applet>	<object>
	CSS
<dir>	
<font>	CSS

HTML 4	HTML 5
<strike>	CSS
<tt>	CSS
<basefont>	CSS
<big>	CSS

HTML 5 Validation

- Form validation is a “technical process where a web-form checks if the information provided by a user is correct.”
- The form will either alert the user that something is not in correct format and need to fix to proceed, or the form will be validated and the user will be able to continue with their process.
- Form can be validated both in Client-Side as well as Server-Side, it is recommended to validate the form in both the side.
- Form validation generally performs two functions.
- 1.**Basic Validation**
- Emptiness
- Length Validation etc……
- 2.**Data Format Validation**
    - Secondly, the data that is entered must be checked for correct **form** and **value**.
- Email Validation
- Mobile Number Validation
- Enrollment Number Validation etc.…

- We can use **required** attribute in order to stop user sending empty data to server.

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

- We can use **pattern** attribute in order to force some format on user before sending the data to server.

```
<input type="text" name="txtName" pattern="[0-9]{10}"/>
```

- We can use **title** attribute for custom error message.

```
<input  type="text" name="txtName"
                pattern="[0-9]{10}"
                title="Please enter 10 digit mobile number"
                required/>
```

HTML VS HTML 5

Difference Between Html and Html5

Html	Html5
Doctype declaration in Html is too longer <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">	DOCTYPE declaration in Html5 is very simple "<!DOCTYPE html>
character encoding in Html is also longer <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">	character encoding (charset) declaration is also very simple <meta charset="UTF-8">
Audio and Video are not part of HTML4	Audio and Videos are integral part of HTML5 e.g. <audio> and <video> tags.
Vector Graphics is possible with the help of technologies such as VML, Silverlight, Flash etc	Vector graphics is integral part of HTML5 e.g. SVG and canvas
It is almost impossible to get true GeoLocation of user browsing any website especially if it comes to mobile devices.	JS GeoLocation API in HTML5 helps identify location of user browsing any website (provided user allows it)
Html5 use cookies.	It provides local storage in place of cookies.
Not possible to draw shapes like circle, rectangle, triangle.	Using Html5 you can draw shapes like circle, rectangle, triangle.
Does not allow JavaScript to run in browser. JS runs in same thread as browser interface.	Allows JavaScript to run in background. This is possible due to JS Web worker API in HTML5
Works with all old browsers	Supported by all new browser.