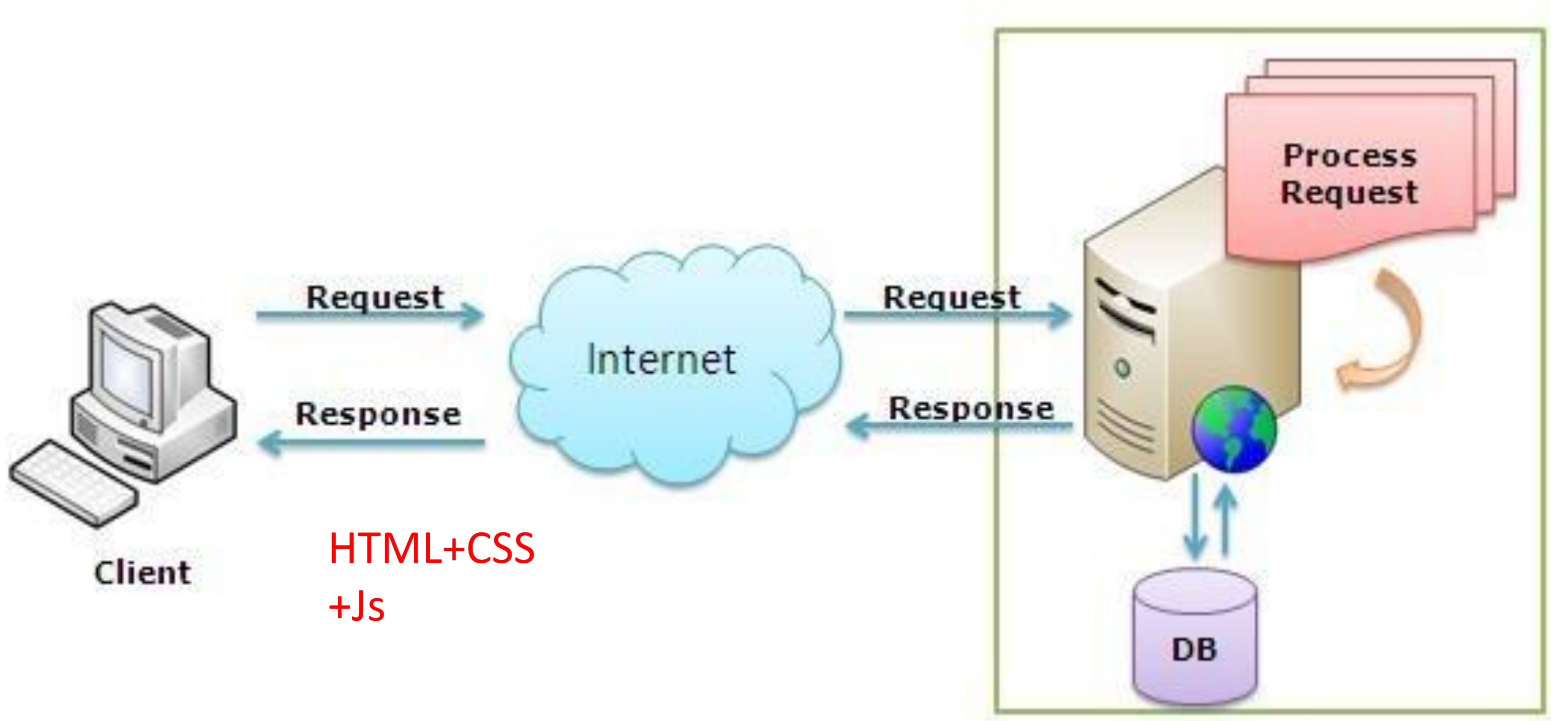
Introduction

Terms

- WWW
- E-mail
- FTP
- Internet
- Browser
- Server
  - Apache
  - IIS

Web Vs Windows Application



HTML+CSS
+Js

Difference

- Hyper Text Markup Language
- Hyper Text Transfer Protocol

How does Web Browser Work?

- http://www.yahoo.com/index
  - http → protocol
  - Yahoo.com → domain name
  - index → name of the file
  - There will be default page

How does Web Browser Work?

- The browser requests DNS for the IP address corresponding to www.yahoo.com
- DNS replies with the IP address for www.yahoo.com (120.10.23.21)
- The browser makes a TCP connection with the computer 120.10.23.21

How does Web Browser Work?

- The client makes an explicit request for the webpage to the webserver using HTTP request.
  - GET /index.htm
  - Host: yahoo.com

How does Web Browser Work?

- The request is handed over to the HTTP software running on the client machine to be transmitted to the server
- The HTTP software on the client now hands over the HTTP request to the TCP/IP software running on the client
- The TCP/IP software running on the client breaks the HTTP request into packets and sends them over TCP to the web server (yahoo.com)
-

How does Web Browser Work?

- The TCP/IP software running on the web server reassembles the HTTP request using packets received and gives it to the HTTP software running on the web server.
- The HTTP software running on the web server interprets the HTTP request(index.htm). It requests operating system running on the server for that file.
- The operating system on the web server locates index.htm file and gives it to the HTTP software running on the web server.

How does Web Browser Work?

- The HTTP software running on the web server adds some headers to the file to form HTTP response.
  - Date and time when response is being sent
  - HTML text corresponding to the requested file.

How does Web Browser Work?

- The HTTP software on the web server now hands over this HTTP response to the TCP/IP software running on the web server.
- The TCP/IP software running on the web server breaks the HTTP response into packets and sends it over the TCP connection to the client. Once all packets have been transmitted correctly to the client , the TCP/IP software on the web server informs the HTTP software on the web server.

How does Web Browser Work?

- The TCP/IP software on the client computer checks the software for correctness and reassembles them to form the original web page in the HTML format. It informs the HTTP software on the server that the web page was received correctly.

How does Web Browser Work?

- HTTP software on the web server terminates the TCP connection between itself and the client.
- The TCP/IP software on the client now hands over the web page to the web browser for interpretation.

HTTP

- Stateless protocol

What is a Scripting Language

- It's a special type of programming language meant to deal with Web Page interactions
- It adds dynamic behavior to the Web page (programming logic to a web page)
- HTML and CSS are mainly used for presentation of information(to show content, add effects and other formatting)
- Scripting language can be used when we want to take some action on base of any activity done by user on web page
- Eg: Activities like validating user input on forms, displaying dynamic ads on page, image slideshow on web pages can be done using scripting language.

Client Side Scripting Vs Server side scripting

Client Side scripting	Server Side scripting
Adds interactivity on client browser	Performs interaction from server side
Runs on client browser. No extra software needed	Requires a web server with language parser support
Used mainly for form validations, controlling behavior of browser	Used for request/response manipulation and handling
Cannot connect to database or read/write files	Interacts with db and can do file operations
Can view source code by clicking on view source on browser	Cannot view source code since its executed on server
Example : Javascript	Example: ASP, PHP etc

What is HTML?

- Hyper Text Markup Language
- Language used to design a layout
- To specify hyperlinks
- A document may contain- text, images, etc.
- HTML is not case sensitive
- HTML programming is done through notepad or any text editor
- The file is saved as .htm or .html

What HTML is made up of ?

- TAGS
- ATTRIBUTES

✓ All HTML TAGS are contained in angle brackets < >
Eg. <HEAD> , <H1>, <TABLE>,<FONT>

✓ TAG is a coded HTML command to display a part of a webpage.

✓ Attribute is a special word used inside a TAG to specify additional information to TAG such as color, alignment etc

✓ HTML tags come in pairs

HTML Document Structure

Every HTML document has the following structure:

```
<HTML>
<HEAD>
<TITLE> Title of page is written here</TITLE>
</HEAD>
<BODY>
Html TAGS which define the page
</BODY>
</HTML>
```

TAGS

- <HTML>….</HTML> IDENTIFIES THE AS AN HTML DOCUMENT.

- HTML DOCUMENT BEGINS WITH <HTML> AND ENDS WITH </HTML>

- <HEAD>….</HEAD> CONTAINS THE INFORMATION OF DOCUMENT

TAGS

- <TITLE>….</TITLE>
- CONTAINS THE DOCUMENT TITLE WHICH IS DISPLAYED IN THE BROWSERS TITLE BAR

- <BODY>….</BODY>

CONTAINS ALL TAGS,ATTRIBUTES & INFORMATION

TO BE DISPLAYED IN THE WEB PAGE.

<BODY> TAG IS ENTERED BELOW THE CLOSING

</HEAD> TAG AND ABOVE THE CLOSING OF

<HTML> TAG

HTML writing tools

- Need a text editor
- Notepad, frontpage, etc.

Viewing HTML

HTML document can be viewed in a browser like IE, Firefox, Opera, Safari etc.

Container Elements

- These require starting and ending tags.
- These are paired tags.

Eg: <HTML>…</HTML> , <HEAD>…</HEAD> , <TITLE>…</TITLE>

Empty Elements

- These require starting tag.

Eg: <BR>, <HR>, <IMG>, <LINK>

HEADINGS

Six levels of headings are available.

<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

PARAGRAPH

- <P> defines a paragraph
- Add ALIGN="*position*" (left, center, right)
- But </P> is optional

- PARAGRAPH ALIGNMENTS

  < P ALIGN=LEFT> </P>

- LINE BREAKS

  <BR>

- CENTRE TAG

  <CENTER>…</CENTER>

Text Formatting Tags

```
<FONT COLOR="red" SIZE="2" FACE="Times Roman">
This is the text of line one </FONT>

<FONT COLOR="green" SIZE="4" FACE="Arial">
Line two contains this text </FONT>

<FONT COLOR="blue" SIZE="6" FACE="Courier"
The third line has this additional text </FONT>

<BLOCKQUOTE> Defines a long quotation </BLOCKQUOTE>
```

To display a horizontal line:

```
<HR SIZE=4 WIDTH=“50%”>
<HR SIZE=4 NOSHADE>
```

<PRE> Preformatted Text

- <PRE> Defines preformatted text
- It preserves both spaces and line breaks

```
<PRE>
if (a < b) {
    a++;
    b = c * d;
}
else {
    a--;
    b = (b-1)/2;
}
</PRE>
```

LISTS

Ordered Lists:

- List of items are marked with numbers
- An ordered lists start with the <OL> tag
- Each list item start with the <LI> tag

LISTS

Ordered Lists:

```
<OL TYPE="1">
  <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-sublist item one </LI>
      <LI> Sub-sublist item two </LI>
    </OL>
  </OL>
</OL>
```

LISTS

UnOrdered Lists:

- List of items are marked with bullets
- An ordered lists start with the <UL> tag
- Each list item start with the <LI> tag
- Type Attribute can have the value:

TYPE= CIRCLE
TYPE=SQUARE
TYPE=DISC

LISTS

Unordered Lists:

```
<UL TYPE="disc">
  <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>
```

LISTS

Definition Lists:

- List of terms and Explanation of terms
- Definition lists start with the <DL> tag
- Definition list term starts with <DT> tag
- Each definition list definition starts with <DD> tag

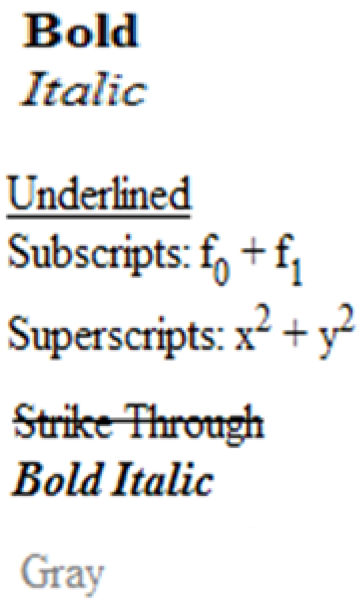
LISTS

Definition Lists:

```
<DL>
<DT> Coffee </DT>
<DD> Black Hot Drink </DD>
<DT> Milk </DT>
<DD> White Cold Drink </DD>
</DL>
```

Formatting tags

```
<B>Bold</B><BR>
<I>Italic</I><BR>
<U>Underlined</U><BR>
Subscripts: f<SUB>0</SUB> + f<SUB>1</SUB><BR>
Superscripts: x<SUP>2</SUP> + y<SUP>2</SUP><BR>
<STRIKE>Strike Through</STRIKE><BR>
<B><I>Bold Italic</I></B><BR>
<FONT COLOR="GRAY">Gray</FONT><BR>
```



Bold
Italic
Underlined
Subscripts: $f_0 + f_1$
Superscripts: $x^2 + y^2$
~~Strike Through~~
Bold Italic
Gray

Images

- To display image in a document use <IMG> tag
- To display image we need SRC attribute (source)
- Value of SRC attribute is the URL of the image
- ALT attribute define an “alternate text” for an image(if the browser can’t load images)
- WIDTH, HEIGHT may be in units of pixels or percentage of page or frame
  - WIDTH="357"
  - HEIGHT="50%“

  Example:

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

<A> Anchors (HyperLinks)

- **Link to an absolute URL:**

If you get spam, contact <A HREF="htttp://www.microsoft.com"> Microsoft </A> to report the problem.

- **Link to a relative URL:**

See these <A HREF="#references"> references </A> concerning our fine products.

- **Link to a section within a URL:**

Amazon provided a <A HREF="www.amazon.com/#reference"> reference for our company. </A>

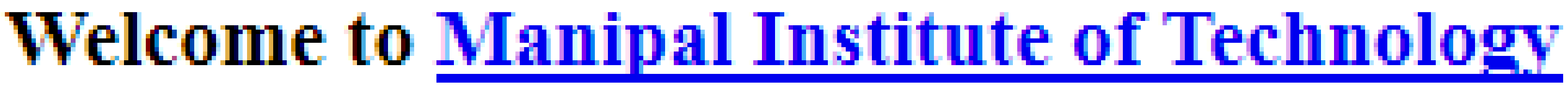
- **Naming a Section**

<H2> <A NAME="#references"> Our References </A> </H2>

URL (Uniform Resource Locator) is used to address a document on World Wide Web.

HYPERLINKS

```
<BODY>
<H3>Welcome to  <A HREF="http://www.manipal.edu">
<STRONG>Manipal Institute of Technology</STRONG></A>
</H3>
</BODY>
```



Welcome to Manipal Institute of Technology

Tables

- <TABLE> table tag
- <CAPTION> optional table title
- <TR> table row
- <TH> table column header
- <TD> table data element

Tables

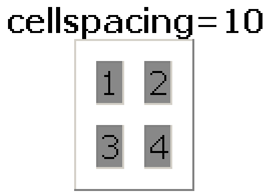
```
<TABLE BORDER=1>
 <CAPTION>Table Caption</CAPTION>
 <TR><TH>Heading1</TH>      <TH>Heading2</TH></TR>
 <TR><TD>Row1 Col1 Data</TD><TD>Row1 Col2
Data</TD></TR>
 <TR><TD>Row2 Col1 Data</TD><TD>Row2 Col2
Data</TD></TR>
 <TR><TD>Row3 Col1 Data</TD><TD>Row3 Col2
Data</TD></TR>
</TABLE>
```

<TABLE> Element Attributes

- ALIGN=*position* -- left, center, right for table
- BORDER=*number* -- width in pixels of border (including any cell spacing, 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
- BGCOLOR=*color* -- background color of table, also valid
- for <TR>, <TH>, and <TD>

TABLES

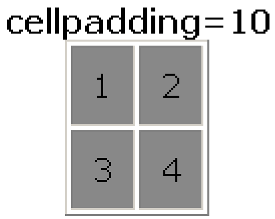
- **cellspacing=10**



cellspacing=10

1	2
3	4

- **cellpadding=10**



cellpadding=10

1	2
3	4

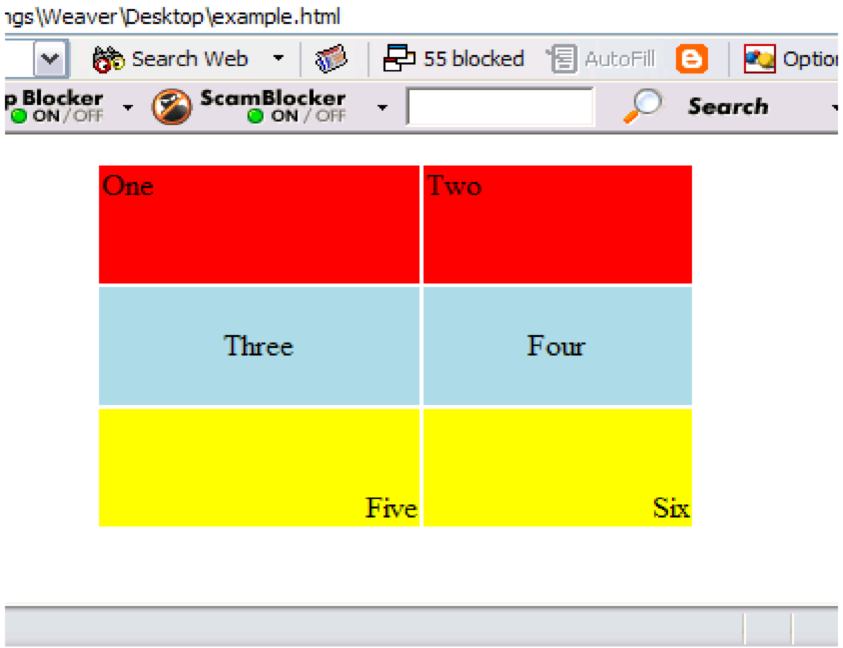
<TR> Table Row Attributes

Valid for the table row:

ALIGN -- left, center, right

VALIGN -- top, middle, bottom

BGCOLOR -- background color



One	Two
Three	Four
Five	Six

```
<TABLE ALIGN="center" WIDTH="300" HEIGHT="200">
<TR ALIGN="left" VALIGN="top" BGCOLOR="red"><TD>One</TD><TD>Two</TD>
<TR ALIGN="center" VALIGN="middle" BGCOLOR="lightblue"><TD>Three</TD><TD>Four</TD>
<TR ALIGN="right" VALIGN="bottom" BGCOLOR="yellow"><TD>Five</TD><TD>Six</TD>
</TABLE>
```

<TD> Table Cell Attributes

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" border="1">
<TR>
<TD colspan="1" rowspan="2">a</TD>
<TD colspan="1" rowspan="1">b</TD>
</TR>
<TR>
<TD colspan="1" rowspan="1">c</TD>
</TR>
</TABLE>
```

FORMS

- Used to select different kind of user input.
- Forms is an area that contain form elements
- Form elements are elements that allow to enter information in a form
- Defined by < FORM> tag
- Action attribute defines the name of the file to which the contents are sent

FORMS

- INPUT Tag:

Type of input is specified with TYPE attribute.

- Text Fields:

Used when we want to type numbers or text.

<input type=“text” name=“first name”>

FORMS

- Radio Buttons:

Used when we want user to select one of a limited number of choices.

- Check Boxes:

Used when we want user to select one or more options of a limited number of choices.

- Submit Button:

When user clicks on submit button, the content of the form is send to the server.

FORMS

```
<HTML>
<HEAD>
…
</HEAD>
<BODY>
<FORM>
First name: <input type="text" name="firstname" /><br>
Last name: <input type="text" name="lastname" /><br>
Password: <input type="password" name="pwd" /><br>
<input type="radio" name=“gender" value="male" /> Male<br>
<input type="radio" name=“gender" value="female" /> Female<br>
<input type="checkbox" name="vehicle" value="Car" /> I have <br>a car <br>
Username: <input type="text" name="user" />
<input type="submit" value="Submit" /></FORM>
</BODY>
</HTML>
```

FORMS

- <TEXTAREA rows=“10” cols=“30”> Deifnes a text area </TEXTAREA>

- <SELECT> Defines a selectable list of items.

```
<SELECT name=“cars”>
<OPTION value=“alto”> ALTO </option>
<OPTION value=“santro”> SANTRO </option>
…
</SELECT>
```