

What is HTML ???

- HTML, or **H**yper**T**ext **M**arkup **L**anguage is designed to specify the logical organization of a document, with important hypertext extensions.
- HTML instructions divide the text of a document into blocks called *elements*.
- These can be divided into two broad categories:
 - Those that define how the **BODY** of the document is to be displayed by the browser, and
 - Those that define information about the document, such as the **title** or relationships to other documents.
- The detailed rules for HTML (the names of the tags/elements, how they can be used) are defined using another language known as the SGML (**S**tandard **G**eneralized **M**arkup **L**anguage).
- HTML is a set of special codes that can be embedded in text to add formatting and linking information.
- HTML is the language interpreted by a Browser.
- The HTML file must have an extension **".htm"** or **".html"**.
- Any text editor can be used to create HTML file.

Versions of HTML

HTML 2.0

- HTML 2.0 (RFC 1886) was developed by the IETF's HTML Working Group, which closed in 1996.
- It set the standard for core HTML features based upon current practice in 1994.
- Note that with the release of RFC 2854, RFC 1866 has been obsoleted and its current status is *HISTORIC*.

HTML 3.2

- W3C's first Recommendation for HTML which represented the consensus on HTML features for 1996.
- HTML 3.2 added widely-deployed features such as tables, applets, text-flow around images, superscripts and subscripts, while providing backwards compatibility with the existing HTML 2.0 standard

HTML 4.0

- First released as a W3C Recommendation on 18 December 1997.
- A second release was issued on 24 April 1998 with changes limited to editorial corrections.
- This specification has now been superseded by HTML 4.01.

HTML 4.01

- HTML 4.01 is the current official standard.
- It includes support for most of the proprietary extensions, plus support for extra features (Internationalized documents, support for **Cascading Style Sheets**, extra TABLE, FORM, and JavaScript enhancements), that are not universally supported.
- This is the last version of HTML.
- For future, HTML is being replaced by a new language, called XHTML – for the **eXtensible HyperText Markup Language**.

HTML Elements

- The HTML instructions, along with the text to which the instructions apply, are called HTML *elements*.
- The HTML instructions are themselves called **tags**, and look like <element_name> -- that is, they are simply the element name surrounded by left and right angle brackets.
- The content in the web-page is written after the starting tag, and closed with the end tag.
 - E.g: **<element_name>** text to be written HERE **</element_name>**
- The end tag has slash character in front of it.
- HTML tags are not case sensitive, **** means same as ****.

Empty Elements

- Some elements are *empty* -- that is, they do not affect a block of the document in some way.
- These elements do not require an ending *tag*.
 - An example is the <HR> element, which draws a horizontal line across the page.

HTML Tag Attributes

- Many elements can have arguments that pass parameters to the interpreter handling the element.
- These arguments are called *attributes* of the element.
- An attribute is a customizable option for a tag.
- In other words, attributes are used to define the properties of a tag.
 - Example: `<p align = "left"> Trial Example </p>`.
 - In the above example the align attribute allows you to specify how text in a paragraph is arranged on the page.
- Not all tags supports attributes.
- Some tags support multiple attributes, and the attributes are listed one after another in the start tag, seperated by space.
- Attributes are always set to the opening tag.

HTML Tags Lists

| TITLE | TAG | DESCRIPTION |
|------------------------------|---------------------------------------------|--------------------------------------------------|
| <u>Basic Elements</u> | | |
| Document Type | <code><HTML> </HTML></code> | document root element, beginning and end of file |
| Title | <code><TITLE> </TITLE></code> | document title, must be in header |
| Header | <code><HEAD> </HEAD></code> | descriptive info, such as title |
| Body | <code><BODY> </BODY></code> | bulk of the page, notes body of document |
| <u>Formatting</u> | | |
| Bold | <code> </code> | bold text style |
| Italic | <code><I> </I></code> | italic text style |
| Underline | <code><U> </U></code> | underlined text (not widely implemented) |
| Strikeout | <code><STRIKE> </STRIKE></code> | strike-through text (not widely implemented) |
| Strikeout | <code><S> </S></code> | strike-through text (not widely implemented) |
| Subscript | <code><SUB> </SUB></code> | subscript numbers like footnotes |
| Superscript | <code><SUP> </SUP></code> | superscript numbers like cross - reference |

| | | |
|----------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------|
| | | numbers |
| Typewriter | <TT> </TT> | teletype or mono spaced text |
| Pre formatted | <PRE> </PRE> | pre formatted text (display text spacing as-is) |
| Center | <CENTER> </CENTER> | centers text and images |
| Blinking | <BLINK> </BLINK> | blinking text, Netscape only |
| Font Size | | local font size(ranges from 1-7) |
| Change Font Size | | controls font size rendered |
| Font Color | | controls font color rendered |
| Select Font | | the style of the text, such as Times New Roman |
| Marquee | <MARQUEE> </MARQUEE> | scrolling text (IE only) |
| <u>Links</u> | | |
| Link Something | | links text or graphic to another URL |
| Link to Location | | links text or graphic an anchor in an other document |
| Link to Location in Current Page | | links text or graphic an anchor in current document |
| Target Window | | links text or graphic to a URL in a new browser widow |
| Action on Click | | takes effect when user clicks on the item (Javascript) |
| Mouseover Action | | takes effect when user moves pointer over item |
| Link to Email | | creates blank e-mail to indicated address with visitor's default e-mail client |
| <u>Graphics and Sound</u> | | |
| Display Image | | displays image from the indicated URL |
| Alignment | | aligns the image |

| | | |
|-----------------------------------|------------------------------------------|---------------------------------------------------------------------|
| Dimensions | | the dimensions, in pixels, of the image |
| Border | | border, in pixels, around the image |
| Movie Clip | | insert movie clip |
| <u>Dividers</u> | | |
| Paragraph | <P> </P> | paragraph (closing tag often unnecessary) |
| Align Text | <P ALIGN=LEFT CENTER RIGHT> </P> | aligns paragraph |
| Justify Text | <P ALIGN=JUSTIFY> </P> | justify's paragraph's text |
| Line Break | | a single carriage return |
| Horizontal Rule | <HR> | horizontal line |
| Alignment | <HR ALIGN=LEFT RIGHT CENTER> | alignment of horizontal line |
| Thickness | <HR SIZE=?> | thickness, in pixels, of horizontal line |
| Width | <HR WIDTH=?> | width, in pixels, of horizontal line |
| Width Percent | <HR WIDTH="%"> | width(as a percentage of page width), in pixels, of horizontal line |
| Solid Line | <HR NOSHADE> | horizontal line without the 3D cutout look |
| No Break | <NOBR> </NOBR> | prevents line breaks |
| <u>Structural Elements</u> | | |
| Heading | <H?> </H?> | document header, the ? defines 6 levels (#'s 1-6) |
| Strong Emphasis | | strongly emphasized text, usually displayed as bold |
| Address | <ADDRESS> </ADDRESS> | author information |
| Large Font Size | <BIG> </BIG> | uses a large text size |
| Small Font Size | <SMALL> </SMALL> | use a small text size |
| Comments | <INS CITE="URL"> </INS> | comments on the additions in a new version |
| <u>Backgrounds</u> | | |
| Tiled Background | <BODY BACKGROUND= "URL"> | causes the image to tile as the background of the page |

| | | |
|------------------|---------------------------------|--------------------------------------------------------------------|
| Watermark | <BODY BGGPROPERTIES= "FIXED"> | static image which remains in the same location as visitors scroll |
| Background Color | <BODY BGCOLOR= "#\$\$\$\$\$\$"> | solid background color of the page |
| Text Color | <BODY TEXT= "#\$\$\$\$\$\$"> | color of the text throughout the page |
| Link Color | <BODY LINK= "#\$\$\$\$\$\$"> | color of all links throughout the page |
| Visited Link | <BODY VLINK= "#\$\$\$\$\$\$"> | color of all links that have already been clicked on by visitor |
| Active Link | <BODY ALINK= "#\$\$\$\$\$\$"> | color of link while being selected |

Lists

| | | |
|-----------------|------------------------------|---------------------------------------------|
| Unordered List | | list with bulleted items |
| List Item | | indicates an item on the list |
| Bullet Type | <UL TYPE=DISC CIRCLE SQUARE> | shape of bullet for the whole list |
| Bullet Type | <LI TYPE=DISC CIRCLE SQUARE> | shape of bullet for specific list item |
| Ordered List | | numbered list |
| Numbering Type | <OL TYPE=A a i i 1> | type of numbering for the whole list |
| Numbering Type | <LI TYPE=A a i i 1> | type of numbering for specific list item |
| Starting Number | <OL START=?> | starting number for list |
| Starting Number | <LI VALUE=?> | starting number for this & subsequent items |
| Definition List | <DL> </DL> | a list of definitions |
| Definition Term | <DT> </DT> | definition term |
| Definition | <DD> </DD> | definition of a term |
| Menu List | <MENU> </MENU> | display menu type list |
| Directory List | <DIR> </DIR> | directory link |

Tables

| | | |
|-----------------|----------------------------------|--------------------------------------------|
| Define Table | <TABLE> </TABLE> | signals the beginning of a table |
| Table Alignment | <TABLE ALIGN= LEFT RIGHT CENTER> | aligns the table within the browser window |

| | | |
|-----------------|------------------------------------------------------------|-----------------------------------------------------------------------------|
| Table Border | <TABLE BORDER=?> </TABLE> | border of table, you can set the value (aka width) |
| Cell Spacing | <TABLE CELLSPACING=?> | places specific amount of space between the individual cells within a table |
| Cell Padding | <TABLE CELLPADDING=?> | places specific amount of space between the cells border and its contents |
| Desired Width | <TABLE WIDTH=?> | width of table in pixels |
| Width Percent | <TABLE WIDTH=%> | width of table in percentage of page |
| Table Color | <TABLE BGCOLOR="#\$\$\$\$\$\$"> </TABLE> | overall background color of table |
| Border Color | <TABLE BORDERCOLOR="#\$\$\$\$\$\$"> </TABLE> | the color of the table border |
| Table Row | <TR> </TR> | table row |
| Alignment | <TR ALIGN= LEFT RIGHT CENTER MIDDLE BOTTOM> | alignment of the table row |
| Table Cell | <TD> </TD> | specific table cell, must appear within table rows |
| Alignment | <TD ALIGN= LEFT RIGHT CENTER VALIGN= TOP MIDDLE BOTTOM> | alignment of the table cell |
| Columns to Span | <TD COLSPAN=?> | identifies the the number of columns the cell should span |
| Rows to Span | <TD ROWSPAN=?> | identifies the the number of rows the cell should span |
| Desired Width | <TD WIDTH=?> | width of cell in pixels |
| Width Percent | <TD WIDTH="%"> | width of cell as percentage of table |
| Cell Color | <TD BGCOLOR="#\$\$\$\$\$\$"> | background color of table cell |
| Header Cell | <TH> </TH> | table cell for header information (bold & centered) |
| Alignment | <TH ALIGN= LEFT RIGHT CENTER MIDDLE BOTTOM> | alignment of the header cell |
| Table Body | <TBODY> | identifies the specific body section of the table |
| Table Footer | <TFOOT> </TFOOT> | separates group of cells to serve as footer material |

| | | |
|----------------------|-----------------------------------------------------|-------------------------------------------------------------------------------|
| | | for the table (must come before <THEAD>) |
| Table Header | <THEAD> </THEAD> | separates group of cells to serve as header material for the table |
| Table Caption | <CAPTION> </CAPTION> | caption for a table |
| Alignment | <CAPTION ALIGN=TOP BOTTOM LEFT RIGHT> | alignment for the caption of a table |
| <u>Frames</u> | | |
| Frame Document | <FRAMESET> </FRAMESET> | creates layouts of frames (instead of <BODY>) |
| Row Heights | <FRAMESET ROWS=,,,> </FRAMESET> | comma separated list of size of each row within the frameset (pixels or %) |
| Column Widths | <FRAMESET COLS=,,,> </FRAMESET> | comma separated list of size of each column within the frameset (pixels or %) |
| Borders | <FRAMESET FRAMEBORDER= "yes no"> </FRAMESET> | identifies if a frame has a visible border or not |
| Border Width | <FRAMESET BORDER=?> </FRAMESET> | width of frame border if visible |
| Border Color | <FRAMESET BORDERCOLOR="#\$\$\$\$\$"> </FRAMESET> | color of frame border if visible |
| Frame Spacing | <FRAMESET FRAMESPACING=?> </FRAMESET> | number of pixels of reserved space between frames |
| Define Frame | <FRAME> | specific contents of an individual frame |
| Display Document | <FRAME SRC="URL"> | identifies the initial contents of the frame |
| Frame Name | <FRAME NAME="****" _blank _self _parent _top> | assigns a name to the current frame |
| Margin Width | <FRAME MARGINWIDTH=?> | distance between content and frame's left and right margins |
| Margin Height | <FRAME MARGINHEIGHT=?> | distance between content and frame's top and bottom margins |
| Scroll bar | <FRAME SCROLLING="YES NO AUTO"> | controls how the window is or isn't scrolled |
| Not Re-sizable | <FRAME NORESIZE> | prohibits the document viewer from changing |

| | | |
|--------------|-----------------------------------|-------------------------------------|
| | | dimensions of the frame |
| Borders | <FRAME FRAMEBORDER="yes no"> | controls whether frame has a border |
| Border Color | <FRAME BORDERCOLOR="#\$\$\$\$\$"> | color of border of frame |

HTML Lists

- HTML provides three type of lists.
- They are listed below:

1. Ordered List:

- A list of multi-line paragraphs, listed separately and ordered numerically in some way.
- The list items are marked with numbers.
- <OL ...> creates an ordered list.
- "Ordered" means that the order of the items in the list is important.
- By default, the number starts with 1,2,3.....
- An ordered list starts with the tag.
- Each list item starts with the tag.

▪ Example:

```
<ol>
<li>Coffee</li>
<li>Milk</li>
</ol>
```

- Here is how it looks in a browser:

1. Coffee
2. Milk

2. Unordered List:

- A list of multi-line paragraphs, listed separately and usually marked by a bullet or similar symbol (Unordered List)
- <UL ...> creates an unordered list.
- The *unordered* part means that the items in the list are not in any particular order.
- The list items are marked with bullets (typically small black circles).
- An unordered list starts with the tag.
- Each list item starts with the tag.

- Example:

```
<ul>
<li>Coffee</li>
<li>Milk</li>
</ul>
```

- Here is how it looks in a browser:

- Coffee
- Milk

3. Definition List:

- A definition list is **not** a list of items.
- This is a list of terms and explanation of the terms.
- A definition list starts with the <dl> tag.
- Each definition-list term starts with the <dt> tag.
- Each definition-list definition starts with the <dd> tag.

- Example:

```
<dl>
<dt>Coffee</dt>
<dd>Black hot drink</dd>
<dt>Milk</dt>
<dd>White cold drink</dd>
</dl>
```

- Here is how it looks in a browser:

```
Coffee
  Black hot drink
Milk
  White cold drink
```

Frames

- Frames allows to display more than one web-page in a single browser at a same instance of time.
- HTML tags <frameset>.....</frameset> is used to divide a browser screen into two or more HTML recognizable unique regions.

- Each unique region is called frame.
- Each frame can be loaded with a different document and hence, allow multiple HTML documents to be seen concurrently.
- The disadvantages of using frames are:
 - The web developer must keep track of more HTML documents
 - It is difficult to print the entire page.
- The major advantages of using frames are:
 - 1) It can be given an individual URL, so it can load information independent of the other frames on the page;
 - 2) It can be given a NAME, allowing it to be targeted by other URLs, and;
 - 3) It can resize dynamically if the user changes the window's size. (Resizing can also be disabled, ensuring a constant frame size.)

The Frameset Tag

- The <frameset> tag defines how to divide the window into frames.
- Each <frameset> defines a set of rows **or** columns.
- The <frameset> tags require one of the following two attributes depending on whether the screen has to be divided into rows or columns.
- The two attributes are:
 1. Rows:
 - This attribute is used to divide the screen into multiple rows.
 - The each row can be set with different values depending on the required size of the row.
 2. Cols:
 - This attribute is used to divide the screen into multiple columns.
- The values for both Rows and Cols can be:
 - A number in pixels.
 - Expressed as a percentage of the screen resolution.
 - The symbol *, which indicates the remaining space.
- Example of <frameset> tag:
 - <frameset rows="33%,33%,*" >**
divides the browser screen into 3 equal horizontal sections.
 - <frameset cols="33%,*" >**

divides the browser screen into 2 different vertical sections.

The <frame> Tag

- Once the screen is divided into rows and columns, each unique section can be loaded with different HTML documents.
- This is achieved by using the <frame> tag.
- The <frame> tag defines what HTML document to put into each frame.
- The attributes of the <frame> tag are:

| Attributes | Description |
|------------------|--------------------------------------------------------------------------------------------------------------------------------|
| SRC="url" | Indicates the url of the document to be loaded into the frame. |
| MARGINHEIGHT="n" | Specifies the amount of white space to be left at the top and bottom of the frame. |
| MARGINWIDTH="n" | Specifies the amount of white space to be left along the sides of the frame. |
| NAME="name" | Gives the same unique name so it can be targeted by other documents. The name given must begin with an alphanumeric character. |
| NORESIZE | Disables the frames resizing capability. |
| Scrolling | Controls the appearance of horizontal and vertical scrollbars in a frame. This takes the values YES/NO/AUTO. |

- Example of using <frame> tag:

```
<frameset cols="25%,75%">
```

```
<frame src="frame_a.htm">
```

```
<frame src="frame_b.htm">
```

```
</frameset>
```

- In the example above we have a frameset with two columns.
- The first column is set to 25% of the width of the browser window.
- The second column is set to 75% of the width of the browser window.
- The HTML document "frame_a.htm" is put into the first column, and the HTML document "frame_b.htm" is put into the second column.

HTML Links

- A link is a connection from one Web resource to another.
- A *link* has two ends -- called *anchors* -- and a direction.
- The link starts at the "source" anchor and points to the "destination" anchor, which may be any Web resource (e.g., an image, an HTML document, an element within an HTML document, etc.).
- The text or an image that provides such linkages is called hypertext, hyperlink, or hotspot.

What is Hyperlink???

- A Hyperlink is a connection between an HTML element such as text, an image, or anything else on a page and other resource.
- That link might be to another web-page, an external image, or an e-mail address.

Difference between Hyperlink and Normal HTML Text:

- Appears in blue color.
 - The default color setting in a browser for hyperlink text or image.
 - The color can be set dynamically via HTML program if required.
- The Hyperlink text/image is underlined.
- When the mouse cursor is placed over it, the standard arrow shaped mouse cursor changes to the shape of a hand.

Changing the color of Links:

- To change the link color there are three attributes that can be specified with the **<body>** tag.
- These are:
 - LINK
 - ALINK
 - VLINK