Introduction to HTML

MIT - AITI

What is HTML?

- HTML, otherwise known as HyperText Markup Language, is the language used to create Web pages

- Using HTML, you can create a Web page with text, graphics, sound, and video

Tags

- The essence of HTML programming is tags
- A tag is a keyword enclosed by angle brackets (Example: <I>)
- There are opening and closing tags for many but not all tags; The affected text is between the two tags

More Tags...

- The opening and closing tags use the same command except the closing tag contains and additional forward slash /

- For example, the expression `<B> Warning </B>` would cause the word 'Warning' to appear in bold face on a Web page

Nested Tags

- Whenever you have HTML tags within other HTML tags, you must close the nearest tag first
- Example:

    <H1> <I> The Nation </I> </H1>

Structure of a Web Page

- All Web pages share a common structure

- All Web pages should contain a pair of <HTML>, <HEAD>, <TITLE>, and <BODY> tags

<HTML>
<HEAD>
<TITLE> Example </TITLE>
</HEAD>
<BODY>
This is where you would include the text and images on your Web page.
</BODY>
</HTML>

The <TITLE> Tag

- Choose the title of your Web page carefully; The title of a Web page determines its ranking in certain search engines
- The title will also appear on Favorite lists, History lists, and Bookmark lists to identify your page

Text Formatting

- Manipulating text in HTML can be tricky; Oftentimes, what you see is NOT what you get
- For instance, special HTML tags are needed to create paragraphs, move to the next line, and create headings

Text Formatting Tags

<B> **Bold Face** </B>

<I> *Italics* </I>

<U> <u>Underline</u> </U>

<P> New Paragraph </P>

 Next Line

Changing the Font

- The expression <FONT FACE = "fontname"> … </FONT> can be used to change the font of the enclosed text

- To change the size of text use the expression <FONT SIZE=n> …. </FONT> where n is a number between 1 and 7

Changing the Font

- To change the color, use <FONT COLOR="red">…. </FONT>; The color can also be defined using hexadecimal representation (Example: #ffffff)

- These attributes can be combined to change the font, size, and color of the text all at once; For example, <FONT SIZE=4 FACE="Courier" COLOR="red"> …. </FONT>

Headings

- Web pages are typically organized into sections with headings; To create a heading use the expression <Hn>….</Hn> where n is a number between 1 and 7

- In this case, the 1 corresponds to the largest size heading while the 7 corresponds to the smallest size

Aligning Text

- The ALIGN attribute can be inserted in the <P> and <Hn> tags to right justify, center, or left justify the text

- For example, <H1 ALIGN=CENTER> The New York Times </H1> would create a centered heading of the largest size

Comment Statements

- Comment statements are notes in the HTML code that explain the important features of the code

- The comments do not appear on the Web page itself but are a useful reference to the author of the page and other programmers

- To create a comment statement use the <!-- …. --> tags

The Infamous Blink Tag

- It is possible to make text blink using the <BLINK> … </BLINK> tag
- However, it is best to use this feature at most sparingly or not at all; What seems like a good idea to a Web designer can become very annoying to a Web user
- The <BLINK> tag is not supported by Internet Explorer

Page Formatting

- To define the background color, use the BGCOLOR attribute in the <BODY> tag

- To define the text color, use the TEXT attribute in the <BODY> tag

- To define the size of the text, type <BASEFONT SIZE=n>

Example

```
<HTML>
<HEAD>
<TITLE> Example </TITLE>
</HEAD>
<BODY BGCOLOR="black"  TEXT="white">
<BASEFONT SIZE=7>
   This is where you would include the text and images on your Web
   page.
</BODY>
</HTML>
```

Inserting Images

- Type <IMG SRC = "image.ext">, where image.ext indicates the location of the image file
- The WIDTH=n and HEIGHT=n attributes can be used to adjust the size of an image
- The attribute BORDER=n can be used to add a border n pixels thick around the image

Alternate Text

- Some browsers don't support images. In this case, the ALT attribute can be used to create text that appears instead of the image.

- Example:

  <IMG SRC="satellite.jpg" ALT = "Picture of satellite">

Links

- A link lets you move from one page to another, play movies and sound, send email, download files, and more….

- A link has three parts: a **destination**, a **label**, and a **target**

- To create a link type

    <A HREF="page.html"> label </A>

Anatomy of a Link

<A HREF="page.html"> label </A>

- In the above link, "page.html" is the destination. The destination specifies the address of the Web page or file the user will access when he/she clicks on the link.

- The label is the text that will appear underlined or highlighted on the page

Example: Links

- To create a link to CNN, I would type:

  <A HREF="http://www.cnn.com">CNN</A>

- To create a link to MIT, I would type:

  <A HREF="http://www.mit.edu">MIT</A>

Changing the Color of Links

- The LINK, VLINK, and ALINK attributes can be inserted in the <BODY> tag to define the color of a link
  - LINK defines the color of links that have not been visited
  - VLINK defines the color of links that have already been visited
  - ALINK defines the color of a link when a user clicks on it

Using Links to Send Email

- To create a link to an email address, type <A HREF="mailto:email_address"> Label</A>

- For example, to create a link to send email to myself, I would type: <A HREF="mailto: ktdunn@mit.edu">email Katie Dunn</A>

Anchors

- Anchors enable a user to jump to a specific place on a Web site

- Two steps are necessary to create an anchor. First you must create the anchor itself. Then you must create a link to the anchor from another point in the document.

Anchors

- To create the anchor itself, type <A NAME="anchor name">label</A> at the point in the Web page where you want the user to jump to

- To create the link, type <A HREF="#anchor name">label</A> at the point in the text where you want the link to appear

Example: Anchor

<A HREF="#chap2">Chapter Two</A>

Link

<A NAME="chap2">Chapter 2 </A> *Anchor*

Table of Contents

Introduction

(Text for Introduction)

Chapter 1

(Text for Chapter 1)

Chapter 2

(Text for Chapter 2)

Ordered Lists

- Ordered lists are a list of numbered items.

- To create an ordered list, type:

  <OL>

     <LI> This is step one.

     <LI> This is step two.

     <LI> This is step three.

  </OL>

Here's how it would look on the Web:

1. This is step one.
2. This is step two.
3. This is step three.

More Ordered Lists….

- The TYPE=x attribute allows you to change the the kind of symbol that appears in the list.
  - A is for capital letters
  - a is for lowercase letters
  - I is for capital roman numerals
  - i is for lowercase roman numerals

Unordered Lists

- An unordered list is a list of bulleted items

- To create an unordered list, type:

  > <UL>
  >> <LI> First item in list
  >>
  >> <LI> Second item in list
  >>
  >> <LI> Third item in list
  >
  > </UL>

Here's how it would look on the Web:

- First item in list
- Second item in list
- Third item in list

More Unordered Lists...

- The TYPE=shape attribute allows you to change the type of bullet that appears
  - *circle* corresponds to an empty round bullet
  - *square* corresponds to a square bullet
  - *disc* corresponds to a solid round bullet; this is the default value

Forms

- What are forms?

  - An HTML form is an area of the document that allows users to enter information into fields.

  - A form may be used to collect personal information, opinions in polls, user preferences and other kinds of information.

Forms

- There are two basic components of a Web form: the shell, the part that the user fills out, and the script which processes the information

- HTML tags are used to create the form shell. Using HTML you can create text boxes, radio buttons, checkboxes, drop-down menus, and more...

Example: Form

First Name: [   ]   ←——————————— Text Box

Last Name: [   ]

Type of Shirt: [Sleeveless ▲▼]   ←——————— Drop-down Menu

Size: ○ Large ● Medium ○ Small   ←——————— Radio Buttons

Color: ☐ Red ☑ Navy ☐ Black   ←——————— Checkboxes

Comments?
[   ]
[   ]   ←——————— Text Area
[   ]
[   ]

[Buy Now!] [Reset]

                                           Reset Button

                                           Submit Button

The Form Shell

- A form shell has three important parts:
  - the <FORM> tag, which includes the address of the script which will process the form
  - the form elements, like text boxes and radio buttons
  - the submit button which triggers the script to send the entered information to the server

Creating the Shell

- To create a form shell, type <FORM METHOD=POST ACTION="script_url"> where "script_url" is the address of the script

- Create the form elements

- End with a closing </FORM> tag

Creating Text Boxes

- To create a text box, type <INPUT TYPE="text" NAME="name" VALUE="value" SIZE=n MAXLENGTH=n>

- The NAME, VALUE, SIZE, and MAXLENGTH attributes are optional

Text Box Attributes

- The NAME attribute is used to identify the text box to the processing script

- The VALUE attribute is used to specify the text that will initially appear in the text box

- The SIZE attribute is used to define the size of the box in characters

- The MAXLENGTH attribute is used to define the maximum number of characters that can be typed in the box

Example: Text Box

First Name: <INPUT TYPE="text" NAME="FirstName" VALUE="First Name" SIZE=20>

Last Name: <INPUT TYPE="text" NAME="LastName" VALUE="Last Name" SIZE=20>

- Here's how it would look on the Web:

First Name: First Name

Last Name: Last Name

Creating Larger Text Areas

- To create larger text areas, type <TEXTAREA NAME="name" ROWS=n1 COLS=n2 WRAP> Default Text </TEXTAREA>, where n1 is the height of the text box in rows and n2 is the width of the text box in characters
- The WRAP attribute causes the cursor to move automatically to the next line as the user types

Example: Text Area

<B>Comments?</B>

<TEXTAREA NAME="Comments" ROWS=10 COLS=50 WRAP>

</TEXTAREA>

Creating Radio Buttons

- To create a radio button, type <INPUT TYPE="radio" NAME="name" VALUE="data">Label, where "data" is the text that will be sent to the server if the button is checked and "Label" is the text that identifies the button to the user

Example: Radio Buttons

\<B\> Size: \</B\>

\<INPUT TYPE="radio" NAME="Size"
  VALUE="Large"\>Large

\<INPUT TYPE="radio" NAME="Size"
  VALUE="Medium"\>Medium

\<INPUT TYPE="radio" NAME="Size"
  VALUE="Small"\>Small

Creating Checkboxes

- To create a checkbox, type <INPUT TYPE="checkbox" NAME="name" VALUE="value">Label

- If you give a group of radio buttons or checkboxes the same name, the user will only be able to select one button or box at a time

Example: Checkboxes

\<B\> Color: \</B\>

\<INPUT TYPE="checkbox" NAME="Color" VALUE="Red"\>Red

\<INPUT TYPE="checkbox" NAME="Color" VALUE="Navy"\>Navy

\<INPUT TYPE="checkbox" NAME="Color" VALUE="Black"\>Black

Creating Drop-down Menus

- To create a drop-down menu, type <SELECT NAME="name" SIZE=n MULTIPLE>

- Then type <OPTION VALUE= "value">Label

- In this case the SIZE attribute specifies the height of the menu in lines and MULTIPLE allows users to select more than one menu option

Example: Drop-down Menu

<B>WHICH IS FAVOURITE FRUIT**:</B>**

<SELECT>

<OPTION VALUE="MANGOES"**>**MANGOES

<OPTION VALUE="PAPAYA"**>**PAPAYA

<OPTION VALUE="GUAVA"**>**GUAVA

<OPTION VALUE="BANANA"**>** BANANA

<OPTION VALUE="PINEAPPLE"**>**PINEAPPLE

</SELECT>

Creating a Submit Button

- To create a submit button, type <INPUT TYPE="submit">

- If you would like the button to say something other than submit, use the VALUE attribute

- For example, <INPUT TYPE="submit" VALUE="Buy Now!"> would create a button that says "Buy Now!"

Creating a Reset Button

- To create a reset button, type <INPUT TYPE="reset">
- The VALUE attribute can be used in the same way to change the text that appears on the button

Tables

- Tables can be used to display rows and columns of data, create multi-column text, captions for images, and sidebars

- The <TABLE> tag is used to create a table; the <TR> tag defines the beginning of a row while the <TD> tag defines the beginning of a cell
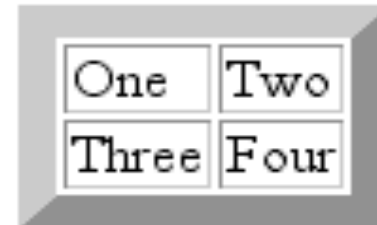
Adding a Border

- The BORDER=n attribute allows you to add a border n pixels thick around the table
- To make a solid border color, use the BORDERCOLOR="color" attribute
- To make a shaded colored border, use BODERCOLORDARK="color" and BORDERCOLORLIGHT="color"

Creating Simple Table

```
<TABLE BORDER=10>
   <TR>
        <TD>One</TD>
        <TD>Two</TD>
   </TR>
   <TR>
        <TD>Three</TD>
        <TD>Four</TD>
   </TR>
</TABLE>
```

- Here's how it would look on the Web:

Adjusting the Width

- When a Web browser displays a table, it often adds extra space. To eliminate this space use the WIDTH =n attribute in the <TABLE> and <TD> tags

- Keep in mind - a cell cannot be smaller than its contents, and if you make a table wider than the browser window, users will not be able to see parts of it.

Centering a Table

- There are two ways to center a table
  - Type <TABLE ALIGN=CENTER>
  - Enclose the <TABLE> tags in opening and closing <CENTER> tags

Wrapping Text around a Table

- It is possible to wrap text around a table. This technique is often used to keep images and captions together within an article.

- To wrap text around a table, type <TABLE ALIGN = LEFT> to align the table to the left while the text flows to the right.

- Create the table using the <TR>, <TD>, and </TABLE> tags as you normally would

Adding Space around a Table

- To add space around a table, use the HSPACE=n and VSPACE=n attributes in the <TABLE> tag
- Example:

    <TABLE HSPACE=20 VSPACE=20>

Spanning Cells Across Columns

- It is often necessary to span one cell across many columns. For example, you would use this technique to span a headline across the columns of a newspaper article.

- To span a cell across many columns, type <TD COLSPAN=n>, where n is the number of columns to be spanned

Spanning Cells Across Rows

- To span a cell across many rows, type <TD ROWSPAN=n>, where n is the number of rows

Aligning Cell Content

- By default, a cell's content are aligned horizontally to the left and and vertically in the middle.

- Use VALIGN=direction to change the vertical alignment, where "direction" is top, middle, bottom, or baseline

- Use ALIGN=direction to change the horizontal alignment where "direction" is left, center, or right

Controlling Cell Spacing

- Cell spacing is the space *between* cells while cell padding is the space *around* the contents of a cell

- To control both types of spacing, use the CELLSPACING =n and CELLPADDING=n attributes in the <TABLE> tag

Nesting Tables

- Create the inner table
- Create the outer table and determine which cell of the outer table will hold the inner table
- Test both tables separately to make sure they work
- Copy the inner table into the cell of the outer table
- Don't nest too many tables. If you find yourself doing that, find an easier way to lay out your Web page

Changing a Cell's Color

- To change a cell's color, add the BGCOLOR="color" attribute to the <TD> tag
- Example:

    <TD BGCOLOR="blue">

Dividing Your Table into Column Groups

- You can divide your table into two kinds of column groups: structural and non-structural.

- Structural column groups control where dividing lines are drawn; Non-structural groups do not

- Both let you format an entire column of cells at once

Column Groups

- To create structural column groups, type <COLGROUP SPAN=n> after the <TABLE> tag, where n is the number of columns in the group

- To create non-structural column groups, type <COL SPAN=n>, where n is the number of columns in the group

Dividing Table into Horizontal Sections

- You can also create a horizontal section consisting of one or more rows. This allows you to format the rows all at once

- To create a horizontal section, type <THEAD>, <TBODY>, or <TFOOT> before the first <TR> tag of the section

- Netscape does not support these tags

Controlling Line Breaks

- Unless you specify otherwise a browser will divide the lines in a cell as it sees fit.

- The NOWRAP attribute placed within the <TD> tag forces the browser to keep all the text in a cell on one line

- Example:
  - <TD NOWRAP>Washington, D.C.

Parting Words….

- If you can imagine a way to lay out your page, chances are it is possible using HTML
- When in doubt, use an HTML reference