What is a Web Page?

- A web page can include:
  - Text
  - Images
  - Links
  - Interactive Forms

The Home Page

- What is a home page?
  - The first web page that appears when a website is visited
- When I go to http://www.cse.buffalo.edu/~kds/cse-111/, how does the web server know which page is the home page?
  - The home page has a special filename
    - index.html (index.htm) ← Most Common
    - default.html (default.htm)
    - welcome.html (welcome.htm)

HTML

- HyperText Markup Language (HTML)
  - The language used to write web pages

The Structure of an HTML File

```html
<HTML> <HEAD> <TITLE>
Title goes here
</TITLE></HEAD>
<BODY>
Text, links, and images go here
</BODY>
</HTML>
```

Text

- Enter text
- Line Breaks
  - `<BR>`
- Boldface
  - `<B> boldface text </B>`
- Italics
  - `<I> italicized text </I>`
- Superscripts
  - `<SUP> Superscript Text </SUP>`
• Subscripts
  <SUB> Subscript Text </SUB>

• Centering Text
  <CENTER>
  Centered Text
  </CENTER>

**Headings**
• H1 through H6 are headings of different sizes
  ‣ H1 is the largest
  ‣ H6 is the smallest

  <H2> Heading Size 2 </H2>
  <H3> Heading Size 3 </H3>

**Images**
• Image Types
  ‣ GIF
    ‣ Graphics Interchange Format
  ‣ JPEG (JPG)
    ‣ Joint Photographic Experts Graphic Image Tag

• Hypertext Image Tag
  <IMG SRC="filename"/>

• Resizing Images
  ‣ <IMG SRC="filename" WIDTH=width HEIGHT=height>
    ‣ width is the width in pixels
    ‣ height is the height in pixels

**Hypertext Links**
• Hypertext Link Tag
  <A HREF="link">
  description of link
  </A>

• A link can be:
  ‣ A web page

• A link will be **underlined** when seen on your web page
• An image can be used in place of the description
• Moving around within a web page
  ‣ To link to another part of your web page
    <A HREF="#name">
    description of link
    </A>
  ‣ To mark a particular location with a web page
    <A NAME="name">
    Click on the link to move to the location described by name
    </A>
MAILTO
   Allows user to click on link to send e-mail to specified address
   <A HREF="MAILTO:E-mail Address">
      description of link
   </A>

A Simple Web Page
   <HTML>
   <HEAD> <TITLE>
   My first web page
   </TITLE></HEAD>
   <BODY>
   My 1 <SUP>st</SUP> text! <BR>
   My first image: <BR><IMG SRC="ublogo.gif"><BR>
   <A HREF="http://www.cse.buffalo.edu/~kds/cse-111/">
      Click here for the CSE 111 home page </A>
   </BODY>
   </HTML>

The Horizontal Rule
   ● What is a horizontal rule?
      A horizontal line separating items on a web page
   ● HTML Format
      <HR>
   ● Resizing the horizontal rule
      <HR WIDTH=width SIZE=size>
      width is the width in pixels
      size is the height in pixels

The Vertical Rule
   ● No tag for vertical rule
   ● Creating a vertical rule
      Horizontal rule where the width is less than the size

Lists
   ● Types
      Ordered
      Unordered
      Definition
Ordered List

- The `<ol>` tag starts your ordered list, and the `</ol>` tags ends your ordered list
- Each list item is preceded by the `<li>` tag
- Example

  When creating your webpage, do the following
  <ol>
  <li>Design your site offline</li>
  <li>Once happy with your site, upload it so it is publicly accessible</li>
  </ol>

Unordered List

- The `<ul>` tag starts your unordered list, and the `</ul>` tags ends your unordered list
- Each list item is preceded by the `<li>` tag
- Example

  Computer Manufacturers
  <ul>
  <li>Gateway</li>
  <li>Dell</li>
  <li>Hewlett-Packard</li>
  <li>Acer</li>
  <li>Sony</li>
  <li>Toshiba</li>
  </ul>

Definition List

- The `<dl>` tag starts your definition list, and the `</dl>` tags ends your definition list
- A list of terms and definitions comprise the list
  - Each term is preceded by the `<dt>` tag
  - Each definition is preceded by the `<dd>` tag
- Example

  Networking Terms
  <dl>
  <dt>ISP</dt>
  <dd>An Internet Service Provider provides connectivity to the Internet for its subscribers.</dd>
  <dt>Ethernet</dt>
  <dd>The most common networking technology in use today.</dd>
  </dl>
Colors

- Colors can be specified by name or RGB (hexadecimal) value
- Common Colors
  - White - FFFFFF
  - Yellow - FFFF00
  - Red - FF0000
  - Green - 00FF00
  - Blue - 0000FF
  - Back - 000000
  - Purple - 9900CC
- For a list of HTML colors
- For the RGB (hexadecimal) value of any color, you may use a tool like Color Picker
  - http://www.colorpicker.com

Font Color & Size

- Size
  - Hypertext Font Tag
    `<FONT SIZE="Size"> text </FONT>`
  - Sizes range from 1 to 7
- Color
  - Hypertext Font Tag
    `<FONT COLOR="#Color"> text </FONT>`

Centering Items

- Hypertext Center Tag
  `<CENTER> Text, Links, Images </CENTER>`

Background Images & Colors

- Enter the color or the image filename in the body tag
- Setting a Background Color
  `<BODY BGCOLOR="#Color">`
- Setting a Background Image
  `<BODY BACKGROUND="filename">`

The Style of the Web Page

- The body tag can also be used to set the text, hypertext link, active hypertext link, and visited hypertext links
  - Note that there is only one (1) body tag.
    - Setting the text, link, active link, visited link, and/or background should all be done using the same body tag.
Cascading Style Sheets

- A website should contain the same look and file throughout all the pages on the site
- Cascading style sheets (CSS) allow the formatting details to be moved out of the HTML files
  - The HTML files reference the CSS files to provide a consistent look and feel
  - Allows changes to the look and feel to be made quickly and easily for the entire site

Creating Your Home Page

- Go to the following website:
- Click on Turn on or off your personal Webpage
  - A dialog window will open prompting you for your CIT username & password
  - Enter your username and password
  - The web page that comes up allows you to
    - Turn Internet access ON/OFF
- Web files stored in public_html folder
  - Mapped under S: drive on ubfs

Viewing Your Home Page

- Your home page’s URL is:
  - http://www.acsu.buffalo.edu/~username

Developing Your Web Page

- Develop it offline first
- Once you are happy with it, upload it to the web server and make it public
- Don’t edit it while it is live!
Identifying Errors in Your Web Page
- **Validators** can help you debug your files
  - Online Validators
    - [http://infohound.net/tidy](http://infohound.net/tidy)
    - [http://validator.w3.org](http://validator.w3.org)
  - Firefox add-ons such as *HTML Validator* and *Firebug* give you many developer tools that can be integrated into Firefox

Transferring Files from Your Computer to the Web Server
- If working from your home computer you’ll need to transfer your files (html and images) to your webspace
  - **File Transfer Programs**
    - PC
      - ✔ FileZilla
      - ✔ WinSCP
    - Mac
      - ✔ Fetch
  - The afore mentioned programs are available for download from UBIT
- If working from a lab computer, you can copy your files into your S:\public_html folder

Refreshing a Web Page
- When I make changes to my web page, my browser doesn’t show them! *Why?*
  - **Browsers cache web pages**
    - The cache stores the web page so when you look at the site again, the computer does not need to download it from the network
  - **Why cache web pages?**
    - Web pages will load faster if they do not need to be downloaded
    - Since pages don’t change frequently, they are cached to decrease load time
- The browser has a **reload, or refresh** button to force the browser to download the most recent version of the web page
- Some older browsers require you to clear the cache (usually found in the **Options** pulldown menu)

Viewing Document Source
- The HTML code can be viewed by selecting the **Document Source** option in the **View** pulldown menu.
- Code does not look like web page

Comments
- Comments can be placed within HTML
- **Why use comments?**
  - Make code easier to read
- **Format**
  ```html
  <!-- Comments -->
  ```
Tables

- Tables are great for organizing & placing the items on your web page

Format

```html
<TABLE BORDER>
  <TR>
    <TD> Text, images, links </TD>
    <TD> Text, images, links </TD>
    ...<TD> Text, images, links </TD>
  </TR>
  <TR>
    <TD> Text, images, links </TD>
    <TD> Text, images, links </TD>
    <TD> Text, images, links </TD>
  </TR>
</TABLE>
```

Details

- To start/end a table
  ```html
  <TABLE> </TABLE>
  ```
  - Omitting `BORDER` from the table tag will create a table without a border
- To start/end a row
  ```html
  <TR> </TR>
  ```
- To start/end a cell in a row
  ```html
  <TD> </TD>
  ```

Example

```html
<TABLE BORDER>
  <TR> <!-- Row #1 -->
    <TD> Cell #1 </TD>
    <TD> Cell #2 </TD>
    <TD> Cell #3 </TD>
  </TR>
  <TR> <!-- Row #2 -->
    <TD> Cell #4 </TD>
    <TD> Cell #5 </TD>
    <TD> Cell #6 </TD>
  </TR>
</TABLE>
```

Imagemap

- What is an imagemap?
  - An image where certain areas of the image are mapped to hypertext links
Animation

- GIF Animation
  - Series of GIF images are stored in a single GIF file & displayed one after another to create an animated GIF
  - Placing the animated GIF on your web page is no different than putting an ordinary image on your web page

Multimedia

- Video & audio can also be incorporated into web pages
- Plug-ins are used to handle video & audio

Interactive Web Pages

- HTML Forms
  - Online forms in a web page used to obtain information from users on the WWW
- CGI
  - Common Gateway Interface
  - An interface which allows web pages (HTML forms) to communicate with programs which perform a specific task.
  - Tasks may include (but are not excluded to)
    - Searching (search engines)
    - E-commerce
    - Counters

Further Enhancements

- Several languages have been developed to further enhance web pages & the capabilities of HTML
  - Java
  - JavaScript

Web Page Authoring Tools

- Software tools to assist in the creation & maintenance of web pages
- GUI interface
- Easy to use
- Knowledge of HTML programming not required
- Example
  - Adobe Dreamweaver
  - Microsoft Expression Web
    - Formerly Front Page
    - Available from Microsoft for free

Good Design

- A good website should have a nice flow to it and be visually appealing
- Websites to help you accomplish this are...
  - http://webstyleguide.com/wsg3
Search Engines

- Websites (URLs) can be submitted to search engines at the search engine’s website
- Spiders
  - Search the Internet for webpages to include in a search engine’s database
- Meta tags exist to help make a list of keywords & a description of the site available to search engines
  - Included in between the <HEAD> & </HEAD> tags
  - <META NAME=“keywords” CONTENT=“List of keywords“>
  - <META NAME=“description” CONTENT=“Description“>

References

- http://ubit.buffalo.edu/ubfs/edithomepage.php
- HTML Complete, SYBEX, Inc., 1999
- wikipedia.com
- Lecture slides from Kevin Cleary’s offering of CSE 101, Fall 2013