

ANNOUNCEMENTS

- ❖ Instructor: Nelson Padua-Perez (nelson@cs.umd.edu).
- ❖ Class Web Site:
 - ❖ <http://www.cs.umd.edu/class/spring2008/cmssc198N/>
- ❖ No posting of code in the forum.
- ❖ Check class announcements daily.

FUNDAMENTALS: DNS

- ❖ DNS – Domain Name Systems.
- ❖ Protocol for translating domain names to IP addresses.
 - ❖ Example: cs.umd.edu → 128.8.128.44
- ❖ Multiple DNS servers on internet.
- ❖ DNS server may need to query other DNS servers
 - ❖ edu DNS server queries umd.edu server to find cs.umd.edu

FUNDAMENTALS: PORT NUMBER

- ❖ What is a port number?
 - ❖ A number representing an application (program) running in a machine.
 - ❖ Assuming the IP Address is a phone number, the port represents a phone number extension.
 - ❖ A server machine could have several applications (programs) “listening” to different ports.
- ❖ Web servers default port number is 80
- ❖ ssh
 - ❖ Application to connect to a remote computer
 - ❖ port number is 22
- ❖ Complete list at: <http://www.iana.org/assignments/port-numbers>

FUNDAMENTALS: URLS

- ❖ URL – Uniform Resource Locators
- ❖ Represent web resources
 - ❖ Arbitrary files
 - ❖ Web pages
- ❖ Examples
 - ❖ `http://www.cs.umd.edu/index.html`
 - ❖ `ftp://www.cs.umd.edu/pub/doc/policies.pdf`
 - ❖ `https://login.yahoo.com/`
 - ❖ `file://dir/my.txt`

FUNDAMENTALS: URL STRUCTURE

- ❖ URL consists of
 - ❖ Protocol
 - ❖ http
 - ❖ ftp
 - ❖ https (secure http)
 - ❖ file
 - ❖ ...
 - ❖ IP address (or domain name)
 - ❖ Port (optional most of the time)
 - ❖ `http://www.cs.umd.edu:80/`
 - ❖ path

FUNDAMENTALS: WEB SERVER

- ❖ Web Server – Let's access a web server again but using an URL with all the information (no default values).
- ❖ Notice that www is not part of the name of the web server domain name. It is convention to use www as part of the name but you can name it anything you want.
- ❖ Could there be other servers running in a machine?

FUNDAMENTALS: WEB HOSTING

- ❖ Web hosting- Service that stores the files representing your web page on a server so users on the internet can access them.
- ❖ As students of the university you have a place where you can put the files representing your web page.
- ❖ Google Web Page Creator
 - ❖ <http://pages.google.com/>
 - ❖ You need a gmail account.
 - ❖ Provides free hosting.
 - ❖ Your address will be:
 - ❖ <http://YOURGMAILID.googlepages.com>

FIREFOX

- ❖ Browser we will use.
- ❖ <http://www.mozilla.com/en-US/firefox/?from=getfirefox>
- ❖ Extensions we would like to have:
 - ❖ Error Console
 - ❖ Live HTTP Headers
 - ❖ ShowIP

HTML

- ❖ HTML - HyperText Markup Language.
- ❖ Language used to define web pages.
- ❖ What the server sends to the browser.
- ❖ Browser reads HTML and renders the page.
 - ❖ **May require downloading data from server (e.g., images)**

HTTP

- ❖ Hypertext Transfer Protocol (HTTP) – protocol that defines how user agents (e.g., browser) and web servers can communicate.
- ❖ HTTP is a request/response protocol between clients and servers.
- ❖ Some methods (operations) defined as part of the protocol
 - ❖ GET – Use to download a resource (e.g., image, web page). Most common method used.
 - ❖ HEAD – Returns only the header.
 - ❖ POST – Submits data (e.g., form data) to the server.
- ❖ Do not confuse with HTML.

CREATING WEB PAGES

- ❖ HTML - HyperText Markup Language
- ❖ HTML Standard
 - ❖ Developed by the World Wide Web Consortium (W3C)
 - ❖ <http://www.w3.org>
- ❖ Document is described through a series of commands and directives present in a text file.
- ❖ **HTML goal is to describe structure only.** Presentation should be left to cascading style sheets.
- ❖ When interpreted by an HTML **viewer** those commands determine the appearance of the page.
- ❖ HTML documents are entirely ASCII text .
- ❖ Commands are explicitly inserted.
- ❖ Great HTML/CSS tutorial site:
 - ❖ <http://www.htmldog.com/>
- ❖ Another site: <http://www.w3schools.com/>

HTML

- ❖ Three versions of HTML
 - ❖ HTML 4.01 Strict (excludes deprecated tags and attributes).
 - ❖ HTML 4.01 Transitional (less restrictive including appearance elements).
 - ❖ HTML 4.01 Frameset (identical to transitional but allows <body> to be replaced with <frameset>).
- ❖ Web Standards Project (www.webstandards.org)
 - ❖ Industry watchdog convincing web browsers developers to adhere to web standards.
- ❖ HTML 4.01 is the last version for HTML. Next version is XHTML 1.0.
- ❖ XHTML
 - ❖ Uses same tags as HTML 4.01.
 - ❖ Enforces rules like closing tags, tags in lowercase, and others.
- ❖ **We will use XHTML (strict) in this class.**
- ❖ HTML Validation - <http://validator.w3.org/>

HTML BASIC SKELETON

- ❖ An html document has two main parts.
 - ❖ **Header** – provides information about the document.
 - ❖ **Body** – contents of the page.
- ❖ **Example: BasicHTMLSkeleton.html**

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en" xml:lang="en">
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1" />
    <title>Template</title>
  </head>

  <body>
    <!--HTML CODE HERE-->
  </body>
</html>
```

- Let's validate the above document

HTML TAGS

- ❖ Tag
 - ❖ Specifies a command or directive.
 - ❖ It surrounds content and apply meaning to that content.
- ❖ General format:
 - ❖ ***<elementName attributes>***
- ❖ Most HTML elements have two tags:
 - ❖ Start tag and end tag.
 - ❖ Example: `<h1> text </h1>`
- ❖ Tags and attributes will be in lowercase (XHTML requirement).
- ❖ Some tags are self-closed (ending them in `/>`)
`<hr /> <br /> <meta /> <img />`

HEAD/TITLE TAGS

- ❖ `<head> </head>`
 - ❖ It does not generate displayed contents.
 - ❖ Contains other tags (e.g., `<title> </title>`)
- ❖ `<title> </title>`
 - ❖ Part of the header.
 - ❖ It is required.
 - ❖ Search engines depend on it.

ATTRIBUTES

- ❖ An attribute extends or modify a tag.
- ❖ Attributes
 - ❖ Only appear in the start tag.
 - ❖ You can have several attributes in one tag each separated by spaces.
 - ❖ Order is immaterial.
 - ❖ Some take values which are specified after an =
- ❖ General format
 - ❖ `<ELEM ATTR="attrValue">Displayed Text</ELEM>`
- ❖ Example
 - ❖ ``
- ❖ All attribute values will be enclosed in “ “ for XHTML compliance.