Outline

• Class Survey / Role Call
• Course Admin
  – Syllabus
  – Policy
  – Tips
• HTML5
Web vs. Internet

• Internet – infrastructure of computers/devices that can communicate
  – telnet, ftp, SMTP(mail)

• Web – software/protocols that has been installed on (most of) these computers
  – http / https
Client/Server Computing

Computation can occur in ____________ location

Things we’ll learn and do

• HTML5 – basics, tables, forms
• Cascading Style Sheets
• JavaScript, Dynamic HTML
• CGI / Python
• Databases – Relational Model
• SQL
• Web applications with database back-end
• Web based attacks (XSS, SQL injections,...)
Things we won’t have time for

- Not fully supported HTML 5 features
- Not fully supported CSS 3 features
- ASP, .NET
- jQuery
- PHP
- Database design (ER model), normalization, etc

Admin - Policy

- Workload:
  - Readings
  - Quizzes
  - Labs: start in class, usually finish outside class
  - Projects
  - Exams
- Collaboration
- Honor
- Class/lab behavior
Admin – Assignments

• Assignments will be on the course calendar
• First homework – email due Thursday by 0900
  – Read course policy
  – Read Lab Guidance (on the web) – pick a topic
  – Email topic to instructor (subject: “SY306 Lab topic”)
• Deadlines
  – Reading (+ quiz) – often Wednesday, but see calendar
  – Lab – usually due Friday 1 minute before class (electronically and hard copy)
• Late assignments – 5 grace days, then 0

Success in SY306

• Do the reading (don’t forget online quizzes!)
  – Brief lecture to highlight key points
• Lecture – stay engaged
  – Ask & answer questions
  – Take notes – provided slides are not enough!
  – Exams closed-book – but open-note!
• Make the most of in-class lab time
  – Read lab in advance
  – Think before you start typing
  – Don’t stay stuck!
• Don’t fall behind
  – Finish lab early and leave time for reading
  – See me for help and/or talk to friends
  – Course material builds on itself and gets more complex
Introduction and Editing HTML5

• HTML 5 (HyperText Markup Language 5)
  – A markup language that specifies the structure and content of documents
  – Separates document presentation from information
  – Standard defined by W3C

• HTML documents
  – Source-code form
  – Text editor (e.g. vi, emacs, Notepad, etc.)
  – .html or .htm file-name extension
  – Web server – stores HTML documents
  – Web browser – requests HTML documents

Basic Syntax

<a href="links.html"> Useful links </a>

<br /> or <br>
Example

```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Welcome</title>
  </head>
  <body>
    <p>Welcome to HTML5!</p>
  </body>
</html>
```

W3C HTML5 Validation Service

- Validation service (validator.w3.org)
  - Checking a document’s syntax
  - Provide URL (not intranet), upload file, or direct input
- Local validation service
  http://mope.cs.usna.edu/w3c-validator
Block vs. inline tags in HTML5

- **Block tags**
  - Start their content on a new line

- **Inline tags**
  - Their content continues on the same line

- **Restrictions**
  - Inline tags (and text) must be nested inside block tags, not directly under `<body>` or `<form>`
  - Block tags cannot be nested inside inline tags
    ILLEGAL: `<em>` `<h1>` Foo `<h1>` `</em>`

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**Headers – h1 to h6**

```html
<!DOCTYPE html>
<html>
<head>
    <meta charset = "utf-8">
    <title>Headings</title>
</head>
<body>
    <h1>Level 1 heading</h1>
    <h2>Level 2 heading</h2>
    <h3>Level 3 heading</h3>
    <h4>Level 4 heading</h4>
    <h5>Level 5 heading</h5>
    <h6>Level 6 heading</h6>
</body>
</html>
```
Linking

• Hyperlink
  – References other sources such as HTML documents and images
  – Both text and images can act as hyperlinks
  – Created using the a (anchor) element
    • Attribute href
      – Specifies the location of a linked resource
    • Link to e-mail addresses using mailto: URL

```html
<!DOCTYPE html>
<!-- Fig. 2.3: links.html -->
<!-- Linking to other web pages. -->
<html>
  <head>
    <meta charset = "utf-8">
    <title>Links</title>
  </head>
  <body>
    <h1>Here are my favorite sites:</h1>
    <p><strong>Click a name to visit that site.</strong></p>
    <!-- create four text hyperlinks -->
    <p><a href = "http://www.facebook.com">Facebook</a></p>
    <p><a href = "http://www.twitter.com">Twitter</a></p>
    <p><a href = "http://www.foursquare.com">Foursquare</a></p>
    <p><a href = "http://www.google.com">Google</a></p>
  </body>
</html>
```
Relative vs. Absolute Links

• Absolute links
  <a href="http://www.usna.edu/CS/">Computer Science Dept</a>
  <a href="http://www.nytimes.com">NYT</a>

• Relative links
  <a href="textbooks.htm">Textbooks</a>
  <a href="../textbooks.htm">Textbooks</a>
  <a href="../common/dogs.html">More on dogs</a>

Images

```html
<!DOCTYPE html>

<head>
  <meta charset = "utf-8">
  <title>Images</title>
</head>

<body>
  <p>
    <img src = "cpphtp.png" width = "92" height = "120"
    alt = "C++ How to Program book cover">
    <img src = "jhtp.png" width = "92" height = "120"
    alt = "Java How to Program book cover">
  </p>
</body>
</html>
```
Lists

• Unordered list element `<ul>`
  – Creates a list in which each item begins with a bullet symbol (called a disc)
  – `<li>` (list item)
    • Entry in an unordered list

• Ordered list element `<ol>`
  – Creates a list in which each item begins with a number

• Lists may be nested to represent hierarchical data relationships
Exercise #1 – Correct any invalid HTML 5 syntax

<!DOCTYPE html>
<!-- An example file
<!-- Our first Web page -->
<html>

<body>
  <h1> Welcome to <b> SY306! </b> </h1>
  <h2> Today’s Agenda </h2>
  <li> HTML5 </li>
  <li> JavaScript </li>
</body>
</html>

Exercise #2 – Correct any invalid HTML 5 syntax

<!DOCTYPE html>
<html>

<title>Internet and WWW How to Program - Welcome</title>

<body>
  <img src = "xmlhtp.jpg" height = "238" width = "183" >
  <h1 align="center">Under construction</h1>
</body>
</html>
Exercise #3 – Correct any invalid HTML 5 syntax

```html
<html>
  <head>
    <title>Internet and WWW How to Program - Links</title>
  </head>

  <body>
    <b><h1>Here are my favorite links</h1></b>

    <p><a href="http://www.yahoo.com">Yahoo!</a></p>
    <p><a mailto="webmaster@ussmichigan.org">Webmaster</a></p>
  
  </body>
</html>
```

Exercise #4 – Correct any invalid HTML 5 syntax

```html
<!DOCTYPE html>
<html>
  <head>  
    <title>Best features of the Internet</title>  
  </head>

  <body>
    <ul>
      <li>Meet new people from around the world.</li>
      <li>Access to new media as it becomes public: </li>
      <ul>
        <li>New games</li>
        <li>New applications & software</li>
      </ul>
      <li>Search engines</li>
    </ul>
  </body>
</html>
```
Web Resources

- Google
- www.w3.org/TR/html5
- http://www.w3schools.com/html/default.asp
- validator.w3.org