

# **IT350**

## **Web & Internet Programming**

**Fall 2013**

**Asst. Prof. Adina Crăiniceanu**

<http://www.usna.edu/Users/cs/adina/teaching/it350/fall2013/>

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### **Outline**

- Class Survey / Role Call
- What is:
  - the web/internet?
  - web programming?
  - this class?
- Course Admin
  - Syllabus
  - Policy
  - Tips
- HTML5 / XHTML

## Web vs. Internet

- Internet – collections of computers/devices that can communicate
  - telnet, ftp, SMTP(mail)
- Web – software/protocols that has been installed on (most of) these computers
  - http / https

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## Client/Server Computing

**Computation can occur in \_\_\_\_\_ location**

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## Things we'll learn and do

- HTML5 – basics, tables, forms
- Cascading Style Sheets
- JavaScript
- Dynamic HTML
- CGI / Perl

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## Things we'll hear about

- Human Computer Interaction
- Accessibility
- Web ethics

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## Things we won't have time for

- Not fully supported HTML 5 features
- Not fully supported CSS 3 features
- ASP, .NET
- Java Servlets
- JavaServer Pages (JSP)
- jQuery
- PHP
- Flash, Photoshop

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## Admin – Assignments

- Assignments will be on the course calendar
- First homework – email due **tomorrow** by 0800
  - Read course policy
  - Read Lab Guidance (on the web) – pick a topic
  - Email topic to instructor (**subject: “IT350 Lab topic”**)
- First reading – due **next Tuesday (quiz)**
  - Skim chapters 1, 2
  - Read chapter 2.10- 2.13
- Deadlines
  - Reading (+ quiz) – often Tuesdays, but see calendar
  - Lab – usually due Monday **2359 (electronically)**. Hard copy **before** lab on Tuesday
- Late assignments – see policy
  - Late online quizzes not accepted!

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## Admin - Policy

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

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## Success in IT350

- 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

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# Chapter 2 - Introduction to HTML5: Part 1

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## 2.1 Introduction / 2.2 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. Notepad, Wordpad, emacs, etc.)
  - `.html` or `.htm` file-name extension
  - Web server – stores HTML documents
  - Web browser – requests HTML documents

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## Basic Syntax

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

`<br />`

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## Example

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.1: main.html -->
4 <!-- First HTML5 example. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Welcome</title>
9   </head>
10
11  <body>
12    <p>Welcome to HTML5!</p>
13  </body>
14 </html>
```

**main.html**  
(1 of 1)

Tab shows  
contents of  
title element



## 2.4 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://zee.cs.usna.edu:8888>

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## 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:      `<b> <h1> Foo </h1> </b>`

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## 2.5 Headers – h1 to h6

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.2: heading.html -->
4 <!-- Heading elements h1 through h6. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Headings</title>
9   </head>
10
11   <body>
12     <h1>Level 1 Heading</h1>
13     <h2>Level 2 heading</h2>
14     <h3>Level 3 heading</h3>
15     <h4>Level 4 heading</h4>
16     <h5>Level 5 heading</h5>
17     <h6>Level 6 heading</h6>
18   </body>
19 </html>
```



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## 2.6 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

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```

1 <!DOCTYPE html>
2
3 <!-- Fig. 2.3: links.html -->
4 <!-- Linking to other web pages. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Links</title>
9   </head>
10
11   <body>
12     <h1>Here are my favorite sites:</h1>
13     <p><strong>Click a name to visit that site.</strong></p>
14
15     <!-- create four text hyperlinks -->
16     <p><a href = "http://www.facebook.com">Facebook</a></p>
17     <p><a href = "http://www.twitter.com">Twitter</a></p>
18     <p><a href = "http://www.foursquare.com">Foursquare</a></p>
19     <p><a href = "http://www.google.com">Google</a></p>
20   </body>
21 </html>

```



## Relative vs. Absolute Links

- Absolute links
  - <a href="http://www.cs.usna.edu/textbooks.htm">Textbooks</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>

## 2.7 Images

picture.html  
(1 of 1)

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.6: picture.html -->
4 <!-- Including images in HTML5 files. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Images</title>
9   </head>
10
11   <body>
12     <p>
13       <img src = "cpphtp.png" width = "92" height = "120"
14         alt = "C++ How to Program book cover">
15       <img src = "jhtp.png" width = "92" height = "120"
16         alt = "Java How to Program book cover">
17     </p>
18   </body>
19 </html>
```



## 2.9 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

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.10: links2.html -->
4 <!-- Unordered list containing hyperlinks. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Links</title>
9   </head>
10
11   <body>
12     <h1>Here are my favorite sites</h1>
13     <p><strong>Click on a name to go to that page</strong></p>
14
15     <!-- create an unordered list -->
16     <ul>
17       <!-- the list contains four list items -->
18       <li><a href = "http://www.youtube.com">YouTube</a></li>
19       <li><a href = "http://www.wikipedia.org">Wikipedia</a></li>
20       <li><a href = "http://www.amazon.com">Amazon</a></li>
21       <li><a href = "http://www.linkedin.com">LinkedIn</a></li>
22     </ul>
23   </body>
24 </html>
```



## Web Resources

- Google
- [www.w3.org/TR/html5](http://www.w3.org/TR/html5)
- <http://www.w3schools.com/html/default.asp>
- [validator.w3.org](http://validator.w3.org)

## Lab Accounts

- Student Web Server Accounts (Zee - Unix Server)
  - Mapping web-server account:
    - Start->Computer : Map Network Drive (pick drive W)
    - [\\zee.cs.usna.edu\mXXXXXX](http://zee.cs.usna.edu/mXXXXXX)
    - Check the “Reconnect at login” box.
    - Click on “Finish”
    - Username: academy\mXXXXXX
  - Set up the web server:
    - Ssh into zee.cs.usna.edu (use putty or other tool)
    - Create public\_html directory (mkdir public\_html)
    - Change permissions for directory to allow web access (chmod a+rx public\_html)
  - URL for each student website on the department web server:  
<http://zee.cs.usna.edu/~mXXXXXX>

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