History of the World in Just 5 Slides, Part 1

- **ARPANET**
  - Implemented in late 1960’s by ARPA (Advanced Research Projects Agency of DOD)
  - Networked computer systems of a dozen universities and institutions with 56KB communications lines
  - Grandparent of today’s Internet
  - Intended to allow computers to be shared
  - Real benefit?
History of the World in Just 5 Slides, Part 2

• ARPA’s goals
  – Allow multiple users to send and receive info at same time
  – Use packet switching technique
    • Digital data sent in small packages called packets
    • Packets contained data, address info, error-control info and sequencing info
    • Greatly reduced transmission costs of dedicated communications lines
  – Operate without centralized control
    • If portion of network fails, remaining portions still able to route packets

• Huge variety of networking hardware and software appeared
  – Development of TCP/IP protocols enabled interoperation

History of the World in Just 5 Slides, Part 3

• Internet initially just for universities and research labs
  – Military became big user
  – Next, government decided to access Internet for commercial purposes

• Internet traffic grew
  – Businesses spent heavily to improve Internet
    • Better service their clients
  – Fierce competition among communications carriers and hardware and software suppliers
  – Result
    • Bandwidth (info carrying capacity) of Internet increased tremendously
    • Costs plummeted
History of the World in Just 5 Slides, Part 4

• WWW
  – Allows computer users to locate and view multimedia-based documents
  – Introduced in 1990 by Tim Berners-Lee

• W3C – www.w3.org
  – Founded in 1994 by Tim Berners-Lee
    • Devoted to developing non-proprietary and interoperable technologies for the World Wide Web and making the Web universally accessible
      – Standardization
        • W3C Recommendations: technologies standardized by W3C
          – include Extensible HyperText Markup Language (XHTML), Cascading Style Sheets (CSS) and the Extensible Markup Language (XML)
        • Document must pass through Working Draft, Candidate Recommendation and Proposed Recommendation phases before considered for W3C Recommendation

History of the World in Just 5 Slides, Part 5

• Web 2.0
  – Users create the content
    • Facebook
    • Wikipedia
    • del.icio.us
    • Amazon – how?
  – Tagging
  – Richer user interfaces
    • Google Maps vs. original Mapquest
    • AJAX
  – And more… see IT452!
Web Markup Languages

• HTML 2.0
  …
• HTML 4.01
• XHTML 1.0
• XHTML 1.1
• XHTML 2.0
• HTML 5

HTML 4 vs. XHTML vs. HTML 5
Exercise #1 – Correct any invalid HTML 5 syntax

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

<body>
  <h1> Welcome to <b> IT350! </b> </h1>
  <h2> Today’s Agenda </h2>
  <li> XHTML
  <li> JavaScript
</body>
</html>
```

Exercise #2 – Correct any invalid HTML 5 syntax

```html
<!DOCTYPE htm>
<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>
```
HTML 5 / XHTML (part 1)

- Documents should be “well-formed”
  1. Req: All tags must properly nest

- Rec: All start tags should be closed

HTML 5 / XHTML (part 2)

- Rec: Tag and attribute names should be lowercase

- Rec: Attribute values should be double-quoted

- Use **id** instead of **name**
  
  `<a name=bottom> Stuff </a>`

  `<a id=“bottom”> Stuff </a>
  `<h1 id=“ships”> … </h1>`
HTML 5 / XHTML (part 3)

• Many “style” tags/attributes removed

http://webdesign.about.com/od/htmlxhtmltutorials/l/bltags_deprecat.htm

• What to do?

HTML 5 / XHTML (part 4)

• Frames allowed in HTML4, XHTML 1.0…
  But removed in XHTML 1.1, HTML 5

• A few more technical differences…
  – See http://www.w3.org/TR/html5-diff/
**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>
```