The Internet
What is the Internet?

• A network
  ▫ a group of two or more computers connected together to share resources and information

• The Physical Internet
  ▫ a collection of high-speed data lines that connect major computer systems located around the world

• Internet Service Provider (ISP)
  ▫ a company that has offers the internet service for a fee. They provide the wires, servers, protocol interpreter, and other tools necessary to translate the binary code into readable information.
    • Comcast, Verizon, Time Warner, Google Fiber (U.S.)
HTTP is the foundation

- Hypertext Transfer Protocol (HTTP)
  - a set of rules for exchanging text, graphics, sound, and other multimedia files
  - A request and response tool for client to server interaction
- HTTP does not keep any information related to your user activity. Your browser assists with that in collecting cookies and variables related to your search patterns.
  - Through analytics, Google and other services allow you to track user activity – making for a more dynamic and personal user experience.
  - This information is stored on a database via server side sessions, or tiny interactivities of user information.
What Is DNS?

- Domain Name System – DNS
  - A DNS is considered the storage of all domain names and servers used for accessing the internet.
  - It is the database that stores domain names and corresponding IP numbers.
    - The DNS identifies and locates the computer system or server on the internet.
    - It acts as a virtual roadmap for the internet
  - DNS Name Servers are physical servers that store the DNS record.
What Is an TCP/IP address?

• TCP – Transmission Control Protocol
  • Used in networking for the way packages get delivered to computers with or without the aid of the Internet.
• IP – Internet Protocol address.
  • The “living space” of a website, server, printer, or mobile device.
• Represented by a 4 set number string called IPv4
  • 123.45.67.268
  • 2001:503:A83:0:0:2:30 – IPv6
    • They created IPv6 because they were running out of IPv4 addresses.
• The domain name acts as a mask for the IP address.
  • The Arts Institutes is actually 54.241.152.143 and our website is out of San Francisco
What Is HTML?

- Web pages are created using Hypertext Markup Language (HTML),
  - HTML is the authoring language used to create documents on the World Wide Web
- HTML uses a set of special instructions called tags or markup
  - defines the structure and layout of a Web document
  - specifies how the page is displayed in a browser
- HTML is platform independent
  - meaning you can create, or code, an HTML file on one type of computer and then use a browser on another type of computer to view that file as a Web page
  - Often times, browsers can interpret code in different ways, called browser compatibility. It’s less obvious now, but still exists.
Electronic commerce (e-commerce) is the buying and selling of goods and services on the Internet.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>USERS</th>
<th>ACCESS</th>
<th>APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>Anyone</td>
<td>Public</td>
<td>Share information (personal information, product catalogs, classroom information, etc.) with the public</td>
</tr>
<tr>
<td>Intranet</td>
<td>Employees or members of organization</td>
<td>Private</td>
<td>Share information (forms, manuals, schedules, etc.) with employees or members</td>
</tr>
<tr>
<td>Extranet</td>
<td>Select business partners or customers</td>
<td>Private</td>
<td>Share information (inventory updates, product specifications, financial information, etc.) with partners and customers</td>
</tr>
</tbody>
</table>
Uniform Resource Locator (URL)

- is the address of a document or other file accessible on the Internet
- Dictates the type of page you are visiting.
  - Includes both necessary and optional elements.
  - Necessary items are: scheme, page, extension.
  - Optional are subpages, search queries, and anchors.

- http://new.artinstitutes.edu/pittsburgh
Web Anatomy

• Web server or host
  ▫ Web pages are stored on a Web server, or host, which is a computer that stores and sends (serves) requested Web pages and other files
  ▫ Publishing is copying Web pages and other files to a Web server for view
Web Anatomy (continue)

- **Web Client or browser**
  - Web browser, also called a browser
  - is a program that interprets and displays Web pages and enables you to view and interact with a Web page

- **Examples**
  - Google Chrome
  - Internet Explorer
  - Mozilla Firefox
  - Opera
  - Safari
Browser Compatibility

• Browsers interpret HTML and other languages in different ways, or can’t/won’t display old or wrong tags or markup.
  • When HTML 5 came out with CSS 3, browsers had to catch up to the new languages.
    • Internet Explorer still can’t display some HTML 5 functionality.
• How do you fix it?
Test for Browser Compatibility

- Test for HTML and CSS validation.
  - [http://validator.w3.org](http://validator.w3.org) tests of issues
  - [http://jigsaw.w3.org/css-validator/](http://jigsaw.w3.org/css-validator/)

- Use an internet tool such as:
  - Crossbrowsertesting.com
  - Browsershots.org
# Web Development Life Cycle

<table>
<thead>
<tr>
<th>WEB DEVELOPMENT PHASE</th>
<th>QUESTIONS TO ASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>• What is the purpose of this Web site?</td>
</tr>
<tr>
<td></td>
<td>• Who will use this Web site?</td>
</tr>
<tr>
<td></td>
<td>• What are the users’ computing environments?</td>
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<td></td>
<td>• Who owns and authors the information on the Web site?</td>
</tr>
<tr>
<td></td>
<td>• Who decides if/where the information goes on the Web site?</td>
</tr>
<tr>
<td>Analysis</td>
<td>• What tasks do the users need to perform?</td>
</tr>
<tr>
<td></td>
<td>• What information is useful to the users?</td>
</tr>
<tr>
<td></td>
<td>• What process considerations must be made?</td>
</tr>
<tr>
<td>Design and Development</td>
<td>• How will the Web pages be organized?</td>
</tr>
<tr>
<td></td>
<td>• What type of Web site structure is appropriate for the content?</td>
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<tr>
<td></td>
<td>• What forms of multimedia contribute positively to the Web site?</td>
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<tr>
<td></td>
<td>• How can accessibility issues be addressed so as not to limit usability?</td>
</tr>
<tr>
<td></td>
<td>• Do we need to design for an international audience?</td>
</tr>
<tr>
<td>Testing</td>
<td>• Is the Web site content correct?</td>
</tr>
<tr>
<td></td>
<td>• Does the Web site functionality work correctly?</td>
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<tr>
<td></td>
<td>• Are users able to find the information they need and to complete desired tasks</td>
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<tr>
<td></td>
<td>• Is the navigation easy to use?</td>
</tr>
<tr>
<td>Implementation and Maintenance</td>
<td>• How is the Web site published?</td>
</tr>
<tr>
<td></td>
<td>• How is the Web site updated?</td>
</tr>
<tr>
<td></td>
<td>• Who is responsible for content updates?</td>
</tr>
<tr>
<td></td>
<td>• Who is responsible for structure updates?</td>
</tr>
<tr>
<td></td>
<td>• How do we notify users about updates to the Web site?</td>
</tr>
<tr>
<td></td>
<td>• Will the Web site be monitored?</td>
</tr>
</tbody>
</table>