Outline

• Internet
• World Wide Web
• Creating Web Pages

What is the Internet?

The internet is a network of networks of computers connected together via devices and media such as cables, telephone lines, modems, satellites.

History of the Internet

• The Internet was originated from the ARPANET developed by Advanced Research Projects Agency, a branch of Department of Defense in 1969.
• The purpose is to link researchers in the US.
• In early 1980s, the original ARPANET split into MILNET and ARPANET, called DARPANET.

Connecting to the Internet

• Dial-up access with Point-to-Point Protocol (PPP)
  – Modem and Phone line, or ISDN line
• DSL--Digital subscriber Line
  – High speed and permanent online connection
• Cable and Satellite access
• LAN access
  – Permanent IP address

How Does Data Travel Through the Internet?

• IP – Internet Protocol – IP address
  – Domain Name System (DNS)
  – Domain-- edu, com, mil, gov, net, org
  – Domain for foreign countries – au, ca, de, jp, uk
• TCP – Transmission Control Protocol
World Wide Web

- The World Wide Web (WWW) is a vast collection of online documents and information (Web pages) formatted in HyperText Markup Language (HTML) distributed over the Internet.
- The Web has the ability to combine text with graphics and other multimedia.

HTTP – Hypertext Transfer Protocol

- HTTP
  - The HyperText Transfer Protocol – request/response model
  - The language used by a WWW client (e.g., Netscape, Internet Explorer) to request documents from a WWW server (i.e., the program running at Web sites like amazon.com or yahoo.com)
  - Interaction between client and server requires a request/response exchange (not like stand-alone GUI)
- HTML
  - The HyperText Markup Language
  - The language used to design web pages

How the Web Works

- A Web page is an electronic document.
- A Web site is a collection of related Web pages.
- A home page is a starting page.
- Each Web page on a Web site has a unique address called URL—Uniform Resource Locator

Creating Web Pages

- A Web page
  - consists of HTML code.
  - can be created using Web editors.
- A Web editor is an application software used to generate HTML code.

What is the HTML?

- HTML stands for HyperText Markup Language
- HTML is a source language of Web-formatted documents
- A Web-formatted document is an ASCII text file punctuated with HTML tags.
- Tags are HTML labels enclosed in angle brackets < >
HyperText Markup Language

- Text Mixed with Markup Tags
  - Tags Enclosed in Angle Brackets ($<H1>$Introduction$</H1>$)
- What Does Markup Describe?
  - Appearance
  - Layout
  - Content (Can’t Enforce an Exact Look)

Creating and Publishing a Web Page

1. Create an HTML document
2. Place the document in a world-accessible directory (often public_html or www) on a system running an HTTP server
3. Access the web page through 
   http://hostname/~username/filename
   - E.g. http://www.apl.jhu.edu/~lmb/test.html
   - If the filename is omitted, a system default filename is assumed (often index.html)
   - E.g. http://www.apl.jhu.edu/~hall/ refers to the file index.html in hall’s public_html directory

HTML Document Template

```
<html>
<head>
  <title>Title</title>
</head>
<body>
  <h1>Main Heading</h1>
  <p>Main content of the page</p>
</body>
</html>
```

HTML Tags

- HTML tags identify structural elements such as
  - links
  - headings
  - subheadings
  - body text paragraph
  - numbered and indented lists
  - line breaks

- HTML tags also indicate
  - where to insert graphics
  - how to emphasize characters
  - where to insert horizontal lines

Review Questions
Problem 1
Which of the following networks best describes the functional structure of the Internet?

a) Metropolitan area network (MAN)
b) Cross-platform network
c) Local area network (LAN)
d) Client/server network

Problem 2
Which of the following is a client program?

a) hypertext
b) ARPANET
c) Internet address
d) Web browser

Problem 3
Which of the following is a unique address assigned to every Web page?

a) IP
b) URL
c) TCP
d) Email

Problem 4
The top-level domain name frequently used by ISPs is what?

a) gov
b) edu
c) net
d) com

Problem 5
Which of the following is absolutely necessary to connect to the Internet?

a) Your computer must support the network access point protocols
b) Communications equipment such as a modem or ISDN adapter
c) Shell access
d) LAN access

Problem 6
Which of the following is an internal network, based on TCP/IP, that gives users the same familiar tools they use on the Internet?

a) Local area network (LAN)
b) intranet
c) extranet
d) firewall
Problem 7

Which of the following lets you know when a friend or business associate is online?

a) Client software
b) Internet Explorer
c) Online services
d) Instant messaging systems