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Introduction to Computers



- Web integrated activities
- Self-assessments to reinforce main concepts
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McGraw-Hill Technology Education

Chapter 2A

The Internet and the World Wide Web

Internet History

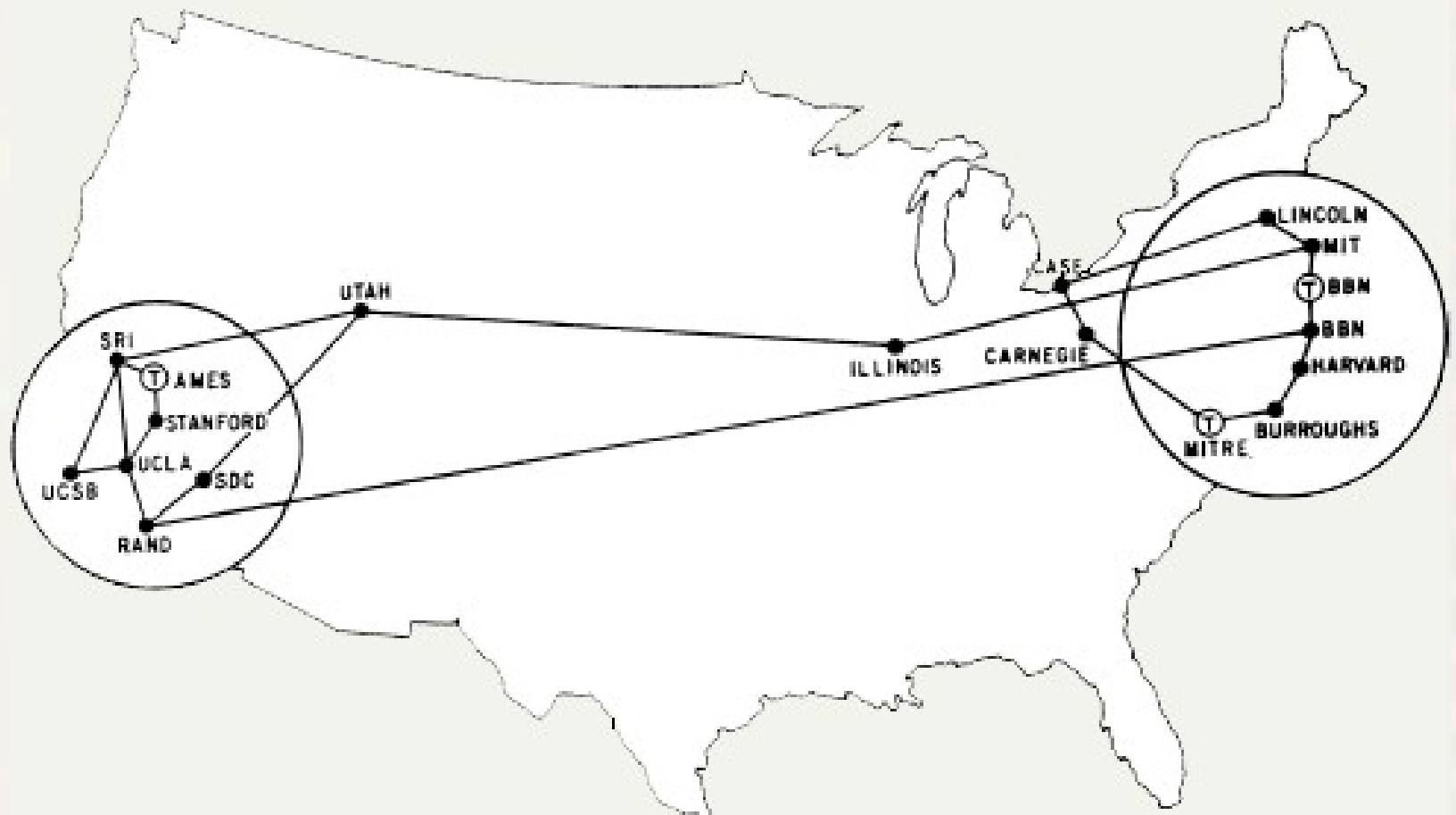
- Internet Definition - Network of Networks:
 - The Internet is an **interconnection of computer networks**, connecting millions of computers that can communicate information with one another



The Internet's History

- 1969 – ARPANET
 - Developed by the Department of Defense
 - Connected universities and defense bases
- 1973 – ARPANET connects to Europe

ARPANET 1973



The Internet's History

- Mid-1980s – NSFNet
 - Network between supercomputers
 - Internet was the link to ARPANET
 - No commercial traffic allowed
- 1990s
 - ARPANET shut down
 - NSFNet abandoned
 - Commercial networks take over

Internet History

- World Wide Web
 - Invented in 1989
 - The Web is only a part of the Internet; it is a massive collection of pages built using HTML (hypertext markup language) code.
 - To view pages, a browser “reads” the HTML code



The Internet's Major Services

- The World Wide Web (WWW)
 - Developed in 1993 by Tim-Berners Lee broadly.
 - Allowed connection of documents
 - Required a browser to read documents
- Electronic mail (e-mail)
 - Instantaneous transmission of documents

The Internet's Major Services

- Chat
 - Public real time conversation
- Instant messaging
 - Private real time conversation
- Peer-to-peer services
 - Allows sharing of files among users
 - Napster and Kazaa are examples
 - Illegal to share copyrighted material

The Internet's Major Services

- News
 - Often called newsgroups
 - Electronic discussions on several topics
- File Transfer Protocol (FTP)
 - Sends and receives files

Web

- WWW is a method for incorporating footnotes, figures and cross references into online documents.
- Web and Internet are not the same thing. The web is a service that is supported by the Internet

Difference between WWW and Internet

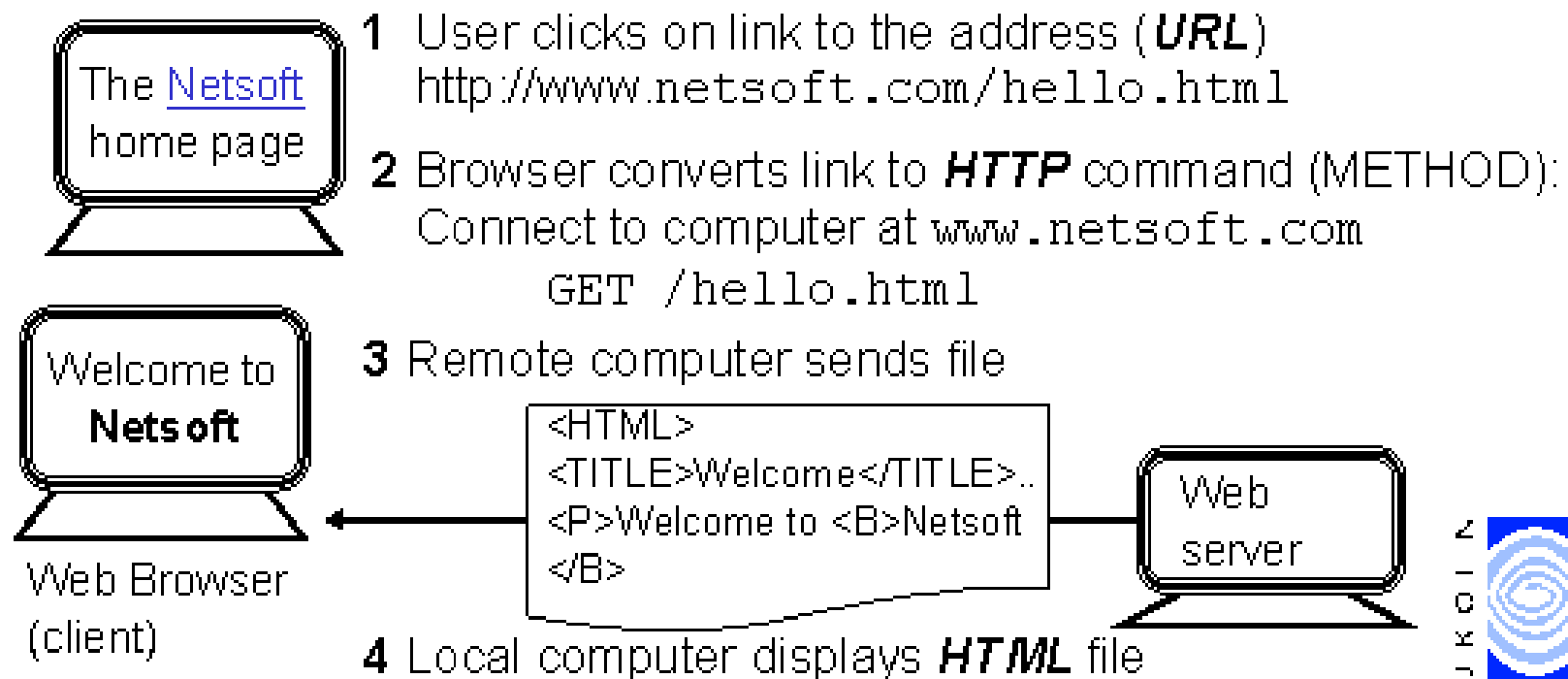
The Internet and the Web are not the same.

Internet	WWW
<ul style="list-style-type: none">•The <i>Internet</i> is a massive network of networks.•It connects millions of computers together globally,• forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet.• Information travels over the Internet using a variety of languages known as protocols.	<ul style="list-style-type: none">•The <i>World Wide Web</i>, or simply <i>Web</i>,•is a way of accessing information over the medium of the Internet.•The Web uses the HTTP protocol, only one of the languages spoken over the Internet, to transmit data.

How Does The Web Work?

The web is based on 3 protocols:

- **URLs**: addresses of resources
- **HTTP**: dialogue between client and server
- **HTML**: format of resources



HT TP

HTTP - hyper text transfer protocol

- The Hypertext Transfer Protocol (HTTP) is designed to enable communications between clients and servers.
- HTTP works as a request-response protocol between a client and server.

HTTP methods :

GET/HEAD/POST/PUT/DELETE/TRACE/OPTIONS/CONNECT/PATCH

HTTP requests

100 / 200[200,201] / 300[300-304] / 400[404] /
500[503]

HTTP response codes

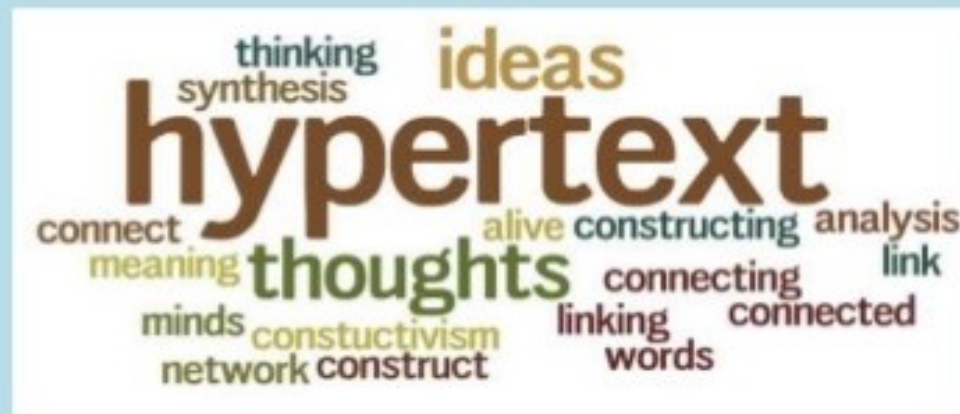
HTTP code	Meaning
200	OK
4xx	Bad request (client's fault)
5xx	Failed request (server's fault)
401	Unauthorized request
404	Resource not found
500	Internal error (bug)
503	Server overloaded


How the web works

- Web documents can be linked together because they are created in a format known as hypertext . Hypertext systems provide an easy way to manage large collections of data which can include text, files, pictures, sounds, movies and more.
- In a hypertext system when you view a document on your computer's screen, you also can access all the data that might be linked to it.

Example of hypertext

- <http://www.whoie.edu/science/B/people/kamaral/hypertext.html>



- 
- To support hypertext documents, the web uses a special protocol called the hypertext transfer protocol or HTTP.
 - A hypertext document is a specially encoded file that uses the hypertext markup language or HTML.

HTML Example

- The **DOCTYPE** declaration defines the document type to be HTML
- The text between **<html>** and **</html>** describes an HTML document
- The text between **<head>** and **</head>** provides information about the document
- The text between **<title>** and **</title>** provides a title for the document
- The text between **<body>** and **</body>** describes the visible page content
- The text between **<h1>** and **</h1>** describes a heading
- The text between **<p>** and **</p>** describes a paragraph
- Using this description, a web browser can display a document with a heading and a paragraph.

URL

- The hypertext transfer protocol uses internet address in a special format called a uniform resource locator.

Type://address/path

- Type specifies the type of server in which the file is located
- Address is the address of the server
- Path is the location within the file structure of the server. The path includes the list of folders where the desired file is located.

Plugged In

- Called helper application or plug-in application helps to provide multimedia content like audio, video content on the web
- A **plugin** is a piece of software that acts as an add-on to a web browser and gives the browser additional functionality. **Plugins** can allow a web browser to display additional content it was not originally designed to display..

Accessing The Internet

- Internet Service Provider (ISP)
 - Company that provides Internet access
- Dialup
 - Connects to Internet through phone line
 - Modem connects to the phone line
 - Slow connection

Accessing The Internet

- High-speed access
 - Connect through a special line
 - 2 – 25 times faster than dialup
 - DSL, Cable, T1 are common

Understanding the Internet

- The Internet allows accessing resources
- The Web simplifies the Internet
- The Web connects documents
 - Hypertext creates links between documents
 - Documents are stored on a web server
 - HTTP delivers documents

Understanding the Internet

- Web site is a collection of documents
 - Document is a web page
 - Pages are published to the web
- Hypertext Markup Language
 - Creates web pages
 - Describes how pages should look
 - Content enclosed in tags
 - `<tag>content</tag>`

Understanding The Internet

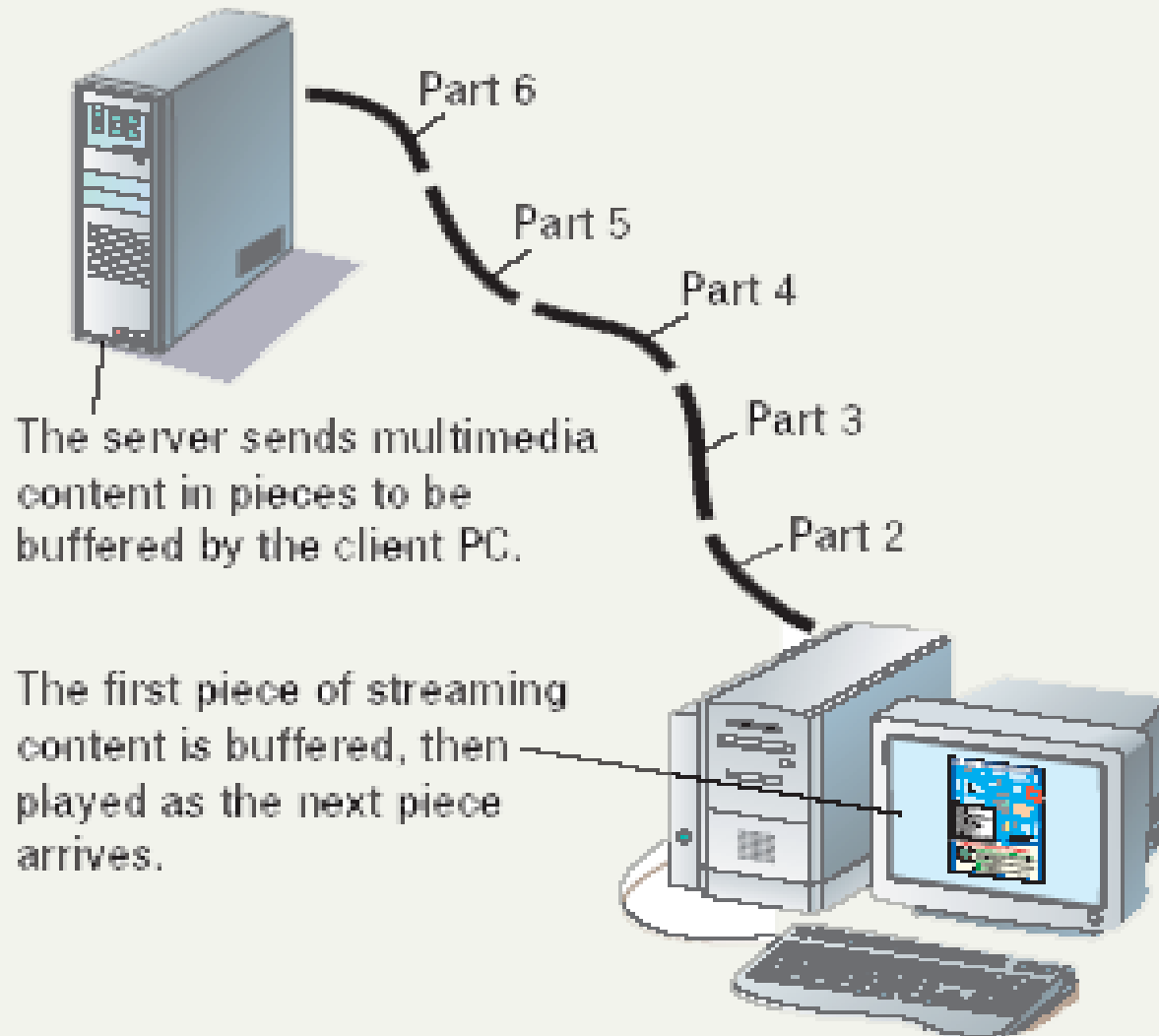
- Browsers
 - Read and translate the HTML
 - Display web content
- Uniform Resource Locator (URL)
 - Address of a web page

`http://www.loc.gov/exhibits/treasures`

Understanding The Internet

- Helper applications
 - Plug-ins
 - Enhance a browser's functionality
- Streaming audio and video
 - Sends the file in small chunks
 - Chunks downloaded while others play

Streaming Audio



Using a Browser And The WWW

- Browser starts on the home page
- Navigating the web
 - Enter a URL in the browser
 - Click a link
 - Links are typically blue underlined words
 - Image maps are picture links
- When finished, close the browser

Searching the Web

- The Web is unorganized
- Directories
 - Enables to search for information by selecting categories of subject matter. The directory separates into general categories which broken into increasingly specific sub categories. Such as companies, construction, builders and designers.

Search engines

- Lets you search for information by typing one or more words. The engine then displays a list of web pages that contain information related to your words.
 - Find sites by keyword



[Web](#) [Images](#) [Groups](#) [News](#) [Shopping](#) [Maps](#) [Scholar](#) [more »](#)

Search Directory

[Preferences](#)
[Directory Help](#)

The web organized by topic into categories.

Arts

[Movies](#), [Music](#), [Television](#), ...

Home

[Consumers](#), [Homeowners](#), [Family](#), ...

Regional

[Asia](#), [Europe](#), [North America](#), ...

Business

[Industrial Goods and Services](#), [Finance](#), [Jobs](#), ...

Kids and Teens

[Computers](#), [Entertainment](#), [School](#), ...

Science

[Biology](#), [Psychology](#), [Physics](#), ...

Computers

[Hardware](#), [Internet](#), [Software](#), ...

News

[Media](#), [Newspapers](#), [Current Events](#), ...

Shopping

[Autos](#), [Clothing](#), [Gifts](#), ...

Games

[Board](#), [Roleplaying](#), [Video](#), ...

Recreation

[Food](#), [Outdoors](#), [Travel](#), ...

Society

[Issues](#), [People](#), [Religion](#), ...

Health

[Alternative](#), [Fitness](#), [Medicine](#), ...

Reference

[Education](#), [Libraries](#), [Maps](#), ...

Sports

[Basketball](#), [Football](#), [Soccer](#), ...

Searching the Web

- Site searches
 - Large sites have an internal search
- Metasearch sites
 - Search several web sites at once
- Sponsored links
 - Sites pay for better search results

Search Techniques

- Quote the exact phrase
- Use the keyword AND
- Use the keyword NEAR
- Avoid common words
- Use the site's advanced tools

Chapter 2A

End of Chapter