

# ***Technology in Action***

Alan Evans • Kendall Martin

Mary Anne Poatsy

Eleventh Edition

# Technology in Action

## Chapter 3

### Using the Internet:

### Making the Most of the Web's Resources

# Chapter Topics

- The Internet and How It Works
- Communicating and Collaborating on the Web
- Web Entertainment
- Conducting Business over the Internet: E-Commerce
- Accessing and Moving around the Web
- Searching the Web Effectively

# Working and Playing on the Web

- The Internet and How it Works
- Communicating and Collaborating on the Web
- Web Entertainment
- Conducting Business over the Internet: E-Commerce

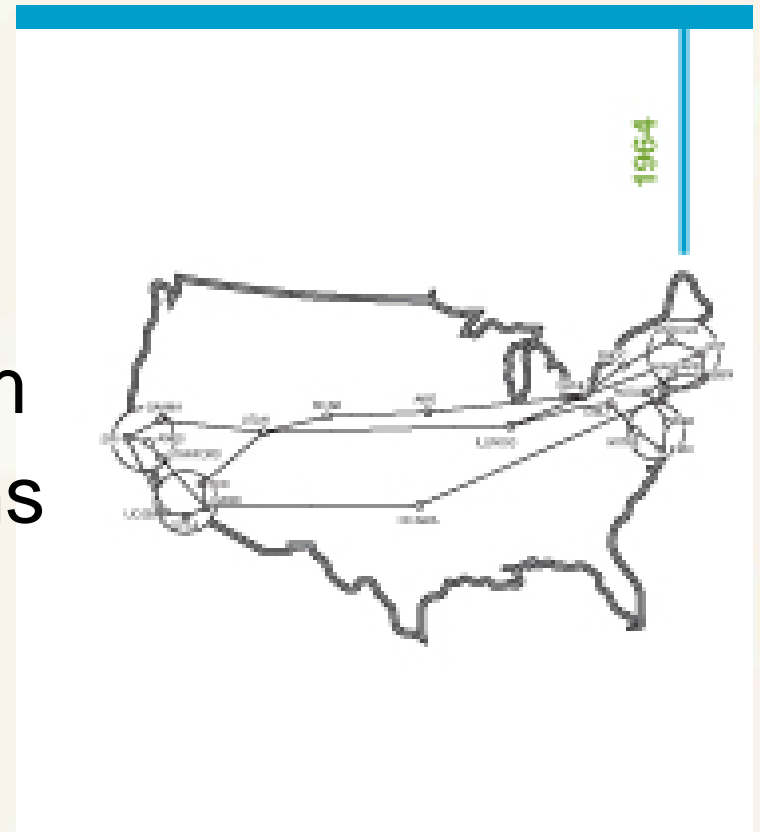
# The Internet and How it Works

- Internet is a network of networks connecting billions of computers globally

# The Internet and How it Works:

## The Origin of the Internet

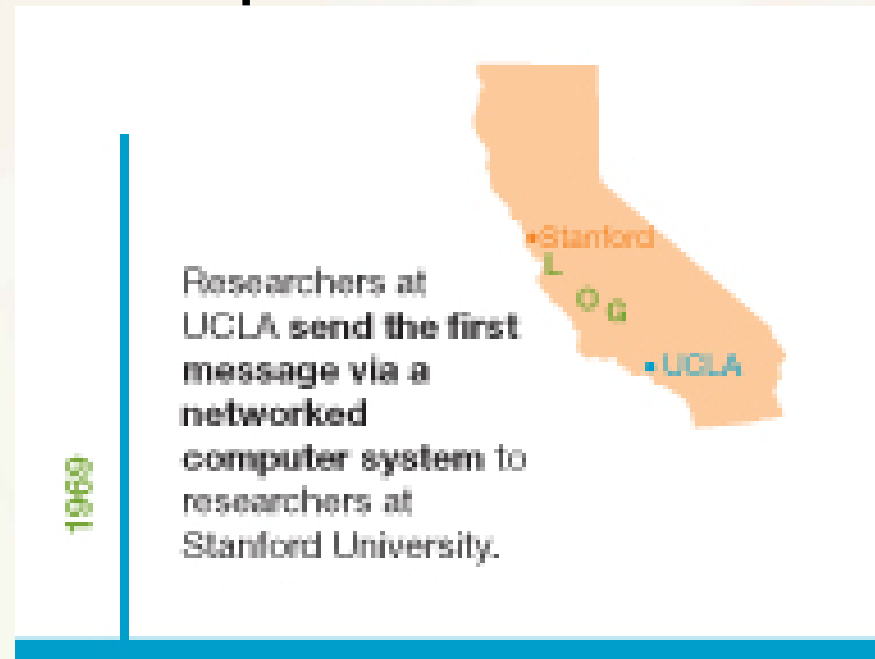
- Advanced Research Projects Agency Network (ARPANET)
- Established a secure form of military communications
- Created a means of communication for all computers



# The Internet and How it Works:

## The Origin of the Internet

- First communication-1969
- TCP/IP Protocol Developed
  - Vinton Cerf
  - Robert Kahn



# The Internet and How it Works:

## The Origin of the Internet

- Tim Berners-Lee and Robert Calliau
  - HTTP protocol
  - World Wide Web
  - Web browser
- Original browser only displayed text
  - Mosaic—released in 1993
  - Netscape Navigator evolved from Mosaic





# The Internet and How it Works:

## How the Internet Works

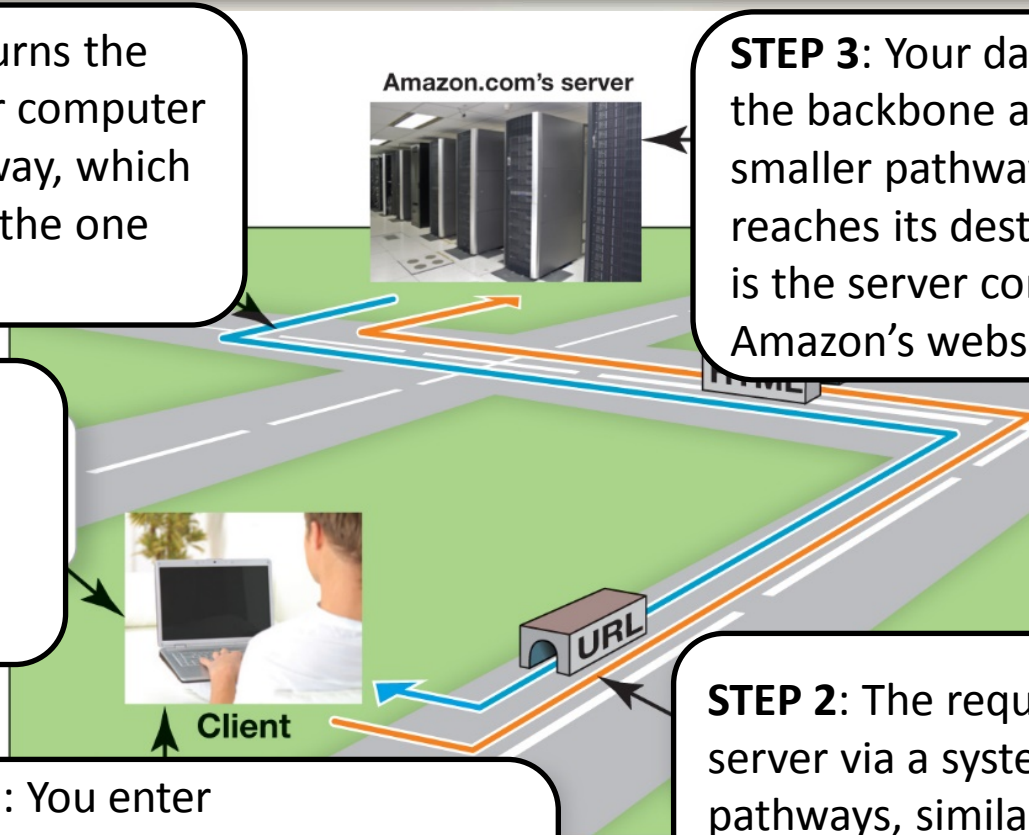
**STEP 4:** The server returns the requested data to your computer using the fastest pathway, which may be different from the one the request took.

**STEP 5:** The web browser interprets the data and displays it on your monitor.

**STEP 1:** You enter [www.amazon.com](http://www.amazon.com) in your web browser. Your computer is the client requesting information from Amazon's website.

**STEP 3:** Your data flows along the backbone and on to smaller pathways until it reaches its destination, which is the server computer for Amazon's website.

**STEP 2:** The request is sent to the server via a system of data pathways, similar to a roadway system.




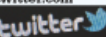









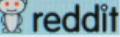

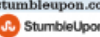
# The Internet and How it Works:

## How the Internet Works

- Internet Protocol (IP) address
  - How computers identify each other
  - Websites have unique IP addresses
  - Text versions of IP addresses
    - `www.amazon.com`—`72.21.211.176`

# Communicating and Collaborating on the Web

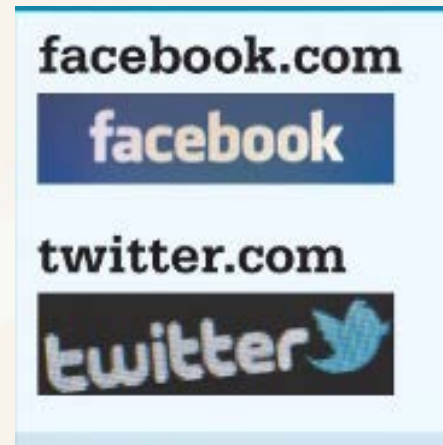
- Web 2.0
  - Social web
  - Collaboration tools
    - Social media
      - Google Docs, Facebook, Yelp, YouTube, Pinterest
      - Social networking, blogs, wikis, podcasts, and webcasts
  - E-mail

Types of Social Networking Sites		
	DESCRIPTION	SUGGESTED URLS
<b>Social Exchange Networks</b>	Allow users to connect with others, provide status updates	<a href="http://facebook.com">facebook.com</a>  <a href="http://twitter.com">twitter.com</a> 
<b>Create Your Own Social Networks</b>	Allow users to create their own social network around a common topic; groups can be public or private	<a href="http://ning.com">ning.com</a>  <a href="http://mixxt.net">mixxt.net</a> 
<b>Business-Related Social Networks</b>	Allow users to seek potential clients, business opportunities, jobs, or job candidates	<a href="http://linkedin.com">linkedin.com</a> 
<b>Media Sharing Networks</b>	Allow users to share pictures and videos	<a href="http://youtube.com">youtube.com</a>  <a href="http://flickr.com">flickr.com</a>  <a href="http://picasa.google.com">picasa.google.com</a> 
<b>Information Sharing Networks</b>	Allow users to share information	<a href="http://delicious.com">delicious.com</a>  <a href="http://wikipedia.org">wikipedia.org</a>  <a href="http://slideshare.net">slideshare.net</a> 
<b>Information Recommendations and Filtering (Bookmarking) Networks</b>	Allow users to post their opinion of a product, service, news, or web item for others to see and use	<a href="http://reddit.com">reddit.com</a>  <a href="http://digg.com">digg.com</a>  <a href="http://stumbleupon.com">stumbleupon.com</a> 

# Communicating and Collaborating on the Web:

## Social Networking

- Communicate and share information
  - Facebook
  - Twitter
- Business community
  - LinkedIn
    - Job positions
    - Marketing



# Communicating and Collaborating on the Web:

## Social Networking

- Privacy precautions
  - Keep personal information personal
  - Know your friends
  - Do not post information that is often used as security question to verify identity
  - Use caution when posting images

# Communicating and Collaborating on the Web:

## Social Networking

- Employers and colleges
  - Check out applicants
- People have been fired or expelled because of questionable content
  - Negative comments
  - Inappropriate content about the poster
- Your content is your responsibility

# Communicating and Collaborating on the Web:

## E-mail

- Primary means of communication
- Written message sent or received
- Asynchronous
- Convenient
- Not private





# Communicating and Collaborating on the Web: E-mail

To

"John Hoyt" <jhoyt@companyemail.com>

Cc

"Jeffrey Landis" <JLandis@companyemail.com>  
[Add Bcc](#)

Subject

Social media statistics for presentation on June 6  
[Attach a file](#)   Insert: [Invitation](#)

B I U T A T ☺ ↻ } ≡ ≡ ≡ ≡ " ≡

☰ ☳ ℞ « Plain Text

[Check Spelling](#)

John,

Following up on our recent conversation, please prepare the statistics on our current social media strategy for the presentation on June 6. I've copied Jeff since he may have information you will need.

I'll be working on gathering additional materials regarding our proposed changes to our corporate strategy.

Let's plan on going over the materials together on June 4.

Thanks,  
Carolyn

Social Media Strategist  
(610) 222-1234

## Use CC and BCC sparingly

## Include a useful subject

Use spell-checker and proofread

## Avoid texting abbreviations

## Be concise and to the point

Include a signature line  
with contact information



# Communicating and Collaborating on the Web: E-mail

## E-mail client

Outlook imports e-mail from web-based clients

Outlook has advanced e-mail management

Outlook and Gmail coordinate directly with calendar and tasks

## Web-based e-mail

Gmail has more limited functionality

Gmail has advertisements

b

# Communicating and Collaborating on the Web:

## Instant Messaging (IM)

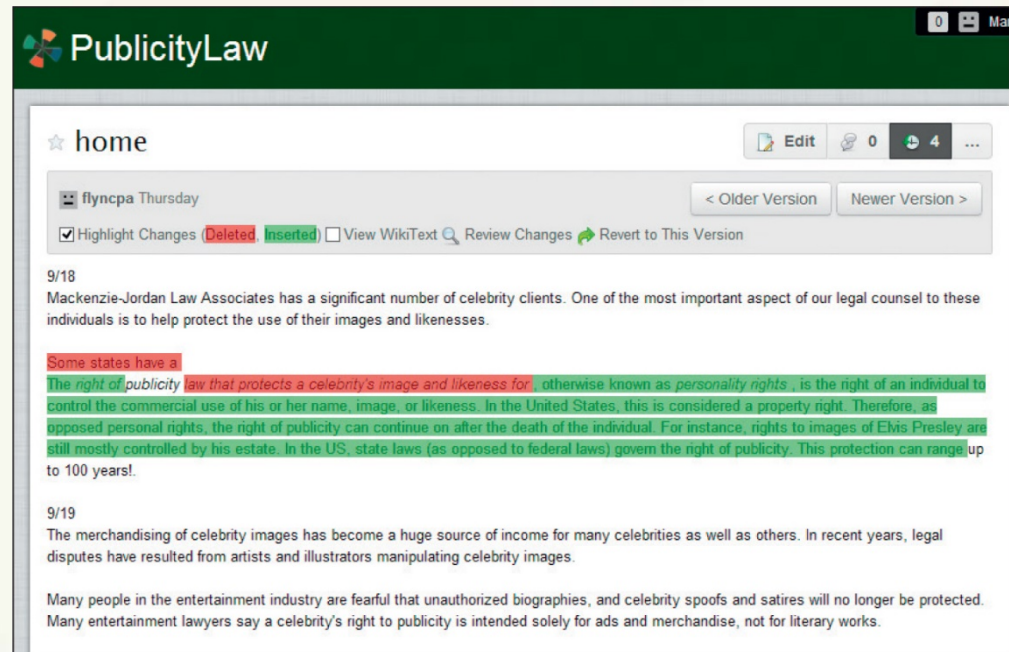
- Communicate in real time
- Proprietary IM services
  - AIM, Google Chat, Windows Messenger, Yahoo! Messenger
- Facebook
  - Chat with “friends”
- Universal chat services
  - Installed: Trillian, Digsby
  - Web-based: Meebo



# Communicating and Collaborating on the Web

## Wikis

- Wikis: Collaborative web-based documents
  - Wikipedia
  - Google Docs



# Communicating and Collaborating on the Web:

## Blogs

- Short for weblog
  - Single-author web-based journal
  - Blog Directory: [technorati.com](http://technorati.com)
- Video log (vlog)
  - Uses video as primary content
  - YouTube

# Communicating and Collaborating on the Web:

## Blogs

- Create your own blog
  - Blogger
  - Wordpress
  - Tout (video)



# Communicating and Collaborating on the Web

## Podcasts and Webcasts

- Audio/video files delivered via RSS
- RSS: Really Simple Syndication
- Aggregator
  - Collects RSS content
- Can download and view podcasts on portable media player





# Communicating and Collaborating on the Web:

## Podcasts and Webcasts

- Webcast
  - Live or one-time event
  - Continuously feeds audio and video content
  - Interactive



# Web Entertainment

- Web entertainment includes:
  - Streaming audio and video
  - Internet radio
  - MP3s
  - Interactive gaming
  - smart TV








# Web Entertainment

- Multimedia
  - Graphics
  - Audio files
  - Video files
- Streaming media
  - Netflix, Hulu, and video on demand
  - Internet radio: Pandora, Beats, Spotify



# Web Entertainment

- Plug-in (or player):
  - Many preinstalled
  - Download free of charge

PLUG-IN OR PLAYER NAME	WHERE YOU CAN GET IT	WHAT IT DOES
Adobe Reader 	<b>adobe.com</b>	Views and prints portable document format (PDF) files
Flash Player 	<b>adobe.com</b>	Plays animation and movies through web browsers
QuickTime Player 	<b>apple.com</b>	Plays MP3 animation, music, musical instrument digital interface (MIDI), audio, and video files
Shockwave Player 	<b>adobe.com</b>	Plays interactive games, multimedia, graphics, and streaming audio and video on the web
Silverlight 	<b>microsoft.com</b>	Similar to Flash; plays web-based animations and videos
Windows Media Player 	<b>microsoft.com</b>	Plays MP3, WAV, and music files; movies; and live audio and video broadcasts on the web

# Web Entertainment

- Tips to keep system running efficiently
  - Delete temporary Internet cache
  - Click Refresh or F5 key to display most recent website content
  - Manually clear Internet cache

# Conducting Business over the Internet: E-Commerce

- E-commerce or electronic commerce
- Business-to-consumer (B2C)
- Business-to-business (B2B)
- Consumer-to-consumer (C2C)
- Social commerce

# Conducting Business over the Internet: E-Commerce

## E-Commerce Safeguards



When shopping at home, use a firewall and antivirus software for general computer protection.



Don't shop on public WiFi networks, as they may contain spyware.



Check for visual indicators such as https:// in the URL, a closed padlock icon, and a green address bar.



Look for third-party verification from TRUSTe or the Better Business Bureau symbol.



Use a credit card, not a debit card, to protect transactions, or use a third-party payer such as PayPal or Google Wallet.



Create a strong password for all online accounts (one that includes numbers and other symbols such as @).



Deals that are too good to be true are usually just that.

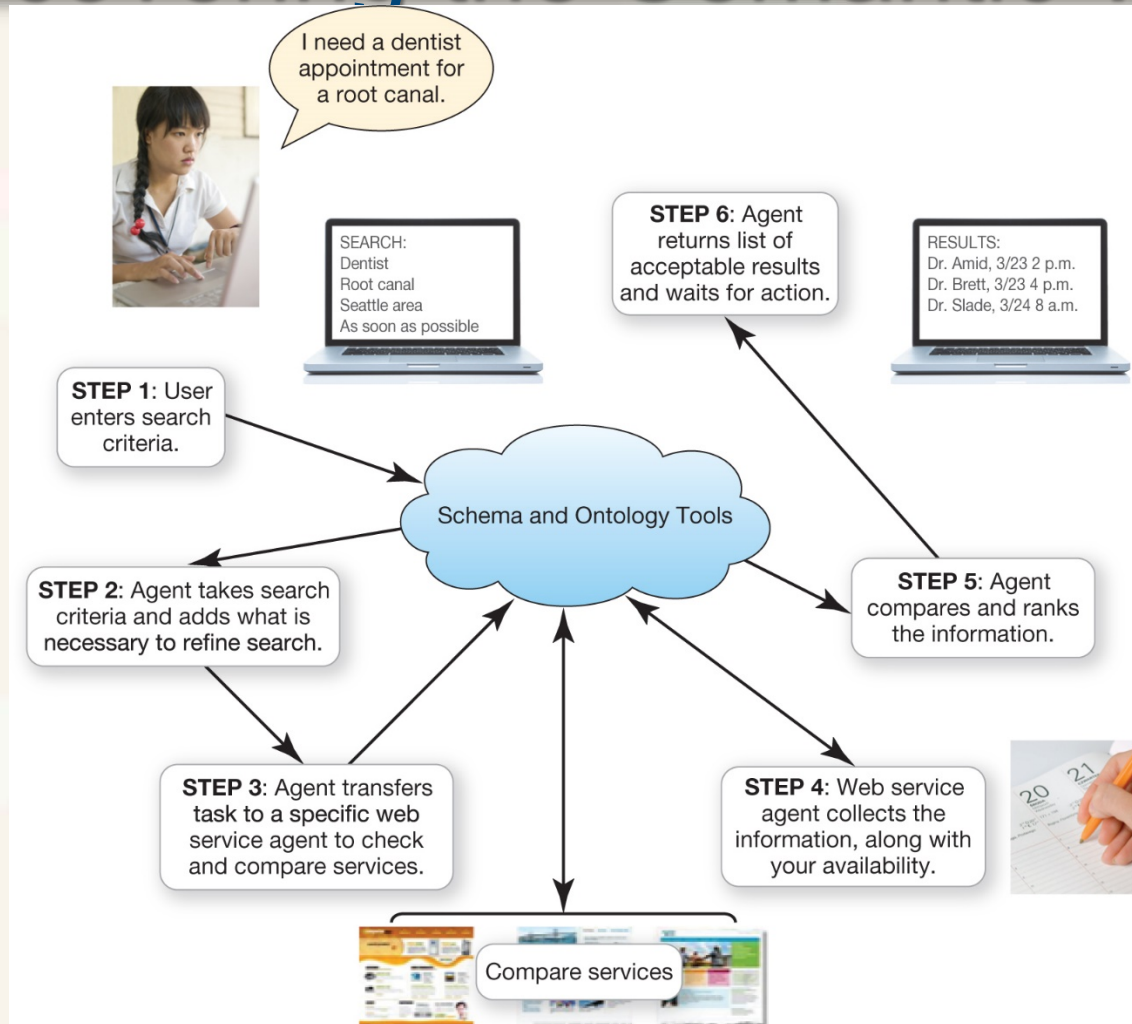


Read and understand the fine print on warranties, return policies, and the retailer's privacy statements.



# Dig Deeper

## Discovering the Semantic Web



# Check Your Understanding

## 1. What is the origin of the Internet?

- The Internet is the largest computer network in the world, connecting millions of computers.
- Government and military officials developed the early Internet as a reliable way to communicate in the event of war.
- Eventually, scientists and educators used the Internet to exchange research.
- Today, we use the Internet and the web (which is a part of the Internet) to shop, research, communicate, and entertain ourselves.

# Check Your Understanding

## 2. How does data travel on the Internet?

- A computer (or other device) connected to the Internet acts as either a client (a computer that asks for information) or a server (a computer that receives the request and returns the information to the client).
- Data travels between clients and servers along a system of communication lines or pathways. The largest and fastest of these pathways form the Internet backbone.
- To ensure that data is sent to the correct computer along the pathways, IP addresses (unique ID numbers) are assigned to all computers connected to the Internet.



# Check Your Understanding

## 3. How can I communicate and collaborate with others using Web 2.0 technologies?

- Web 2.0 can be described as the social web, in which the user is also a participant. Examples of Web 2.0 technologies include social networking, blogs, wikis, podcasts, and webcasts.
- Social networking enables you to communicate and share information with friends as well as meet and connect with others.
- Blogs are journal entries posted to the web that are generally organized by a topic or area of interest and are publicly available. Video logs use video as the primary content.
- Wikis are a type of website that allows users to collaborate on content—adding, removing, or editing it.
- Podcasts are audio or video content that users subscribe to.
- Webcasts are broadcasts of audio or video content over the Internet. Most webcasts are distributed in real time, unlike podcasts that are usually prerecorded and made available for download.

# Check Your Understanding

## 4. How can I communicate with others using e-mail and instant messaging?

- E-mail allows users to communicate electronically without the parties involved being available at the same time,
- Instant-messaging services are programs that enable you to communicate in real time with others who are online.

# Check Your Understanding

5. What multimedia files are found on the web, and what software is needed to access those files?

- Multimedia is anything that involves one or more forms of media in addition to text, such as graphics, audio, and video clips.
- Sometimes you need a special software program called a plug-in (or player) to view and hear multimedia files. Plug-ins are often installed in new computers or are offered free of charge at developers' websites.

# Using the Web Effectively

- Accessing and Moving Around the Web
- Searching the Web Effectively

# Accessing and Moving Around the Web

- Web browser
- Graphical browsers display:
  - Text
  - Pictures
  - Sound
  - Video



**Internet Explorer**  
A very popular browser



**Firefox**  
Open source  
Has strong following



**Google Chrome**  
Newest browser  
Quickly gaining popularity



**Safari**  
Developed by Apple for Macs  
Has a Windows version for PCs

# Accessing and Moving Around the Web:

## Web Browsers

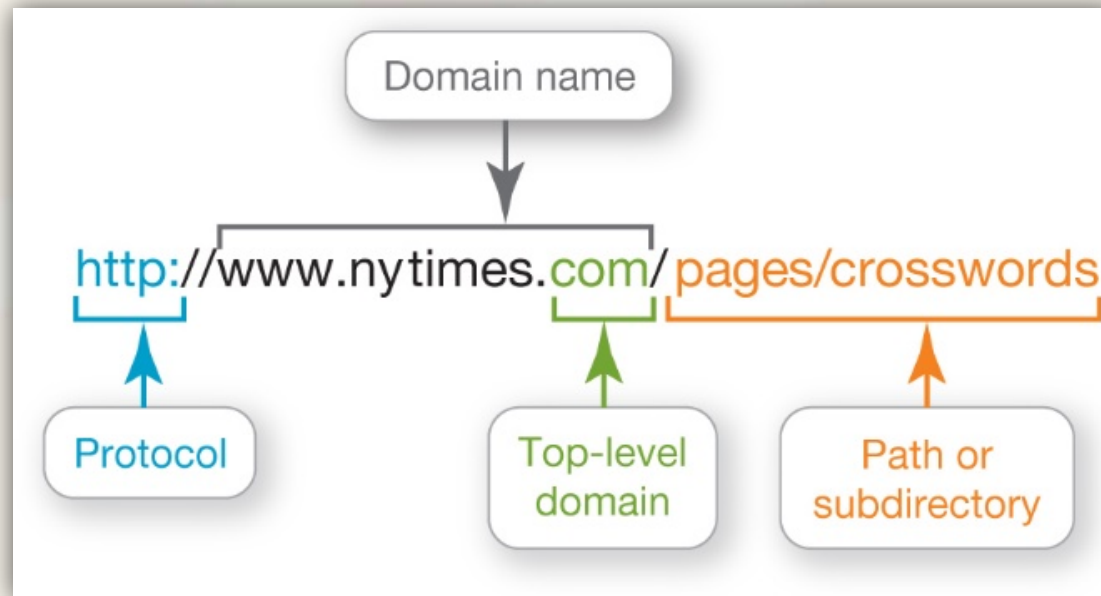
- Web browser features





# Accessing and Moving Around the Web: URLs, Protocols, and Domain Names

- Every website has a unique address
- URLs are composed of parts to identify the web document



# Accessing and Moving Around the Web: URLs, Protocols, and Domain Names

- Protocols
  - HTTP: Hypertext Transfer Protocol
  - File Transfer Protocol (FTP)
  - BitTorrent



# Accessing and Moving Around the Web: URLs, Protocols, and Domain Names

## Top-level domains

Domain Name	Who Can Use It
.biz	Businesses
.com	Originally for commercial sites; but now can be used by anyone
.edu	Degree-granting institutions
.gov	Local, state, and federal U.S. governments
.mil	U.S. military
.net	Originally for networking organizations, but no longer restricted
.org	Organizations (often not-for-profits)

Country Code	Country
.au	Australia
.ca	Canada
.uk	United Kingdom

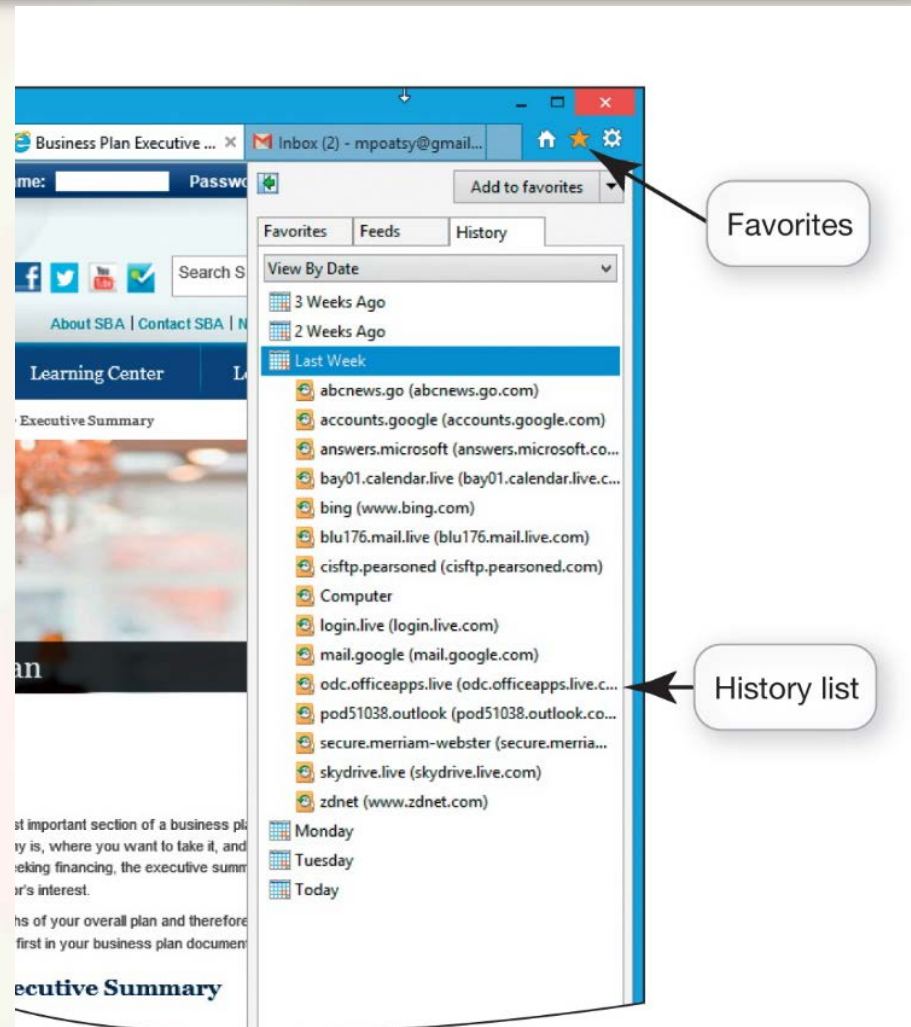
# Accessing and Moving Around the Web:

## Hyperlinks and Beyond



# Accessing and Moving Around the Web: Favorites, Live Bookmarks, and Tagging

- History List
- Favorites
  - Favorites (Internet Explorer and Safari)
  - Bookmarks (Firefox and Google Chrome)
- Live bookmark feature (Firefox)



# Accessing and Moving Around the Web: Favorites, Live Bookmarks, and Tagging

- Social bookmarking or tagging

The screenshot shows a user profile for Mary Anne Poatsy on a social bookmarking platform. The interface includes a left sidebar with navigation options: 'My Links', 'Discover', 'Network', 'Add Link', and 'Settings'. The main content area displays the user's profile information, including their name, a bio, and statistics (770 links, 0 following, 0 followers). Below this, there is a 'TAGS' section with a 'TAG BUNDLES' link and a gear icon. The main feed shows a list of bookmarked articles, each with a title, source, tags, and a timestamp. Annotations with arrows point to specific features: 'Social network connections' points to the 'Network' link in the sidebar; 'Tag bundles' points to the 'TAG BUNDLES' link; and 'Individual articles with added tags, comments, and number of other users who have tagged the article' points to the article entry for 'Watch: Jaw-Dropping Software Makes 3-D Models From Any Ph'.

Welcome back, mpoatsy

Search

My Links

Discover

Network

Add Link

Settings

Social network connections

MA Mary Anne Poatsy

Tell the Delicious community about yourself on your [profile settings page](#).

770 links 0 following 0 followers

Joined on May 23, 2006

TAGS TAG BUNDLES Tag bundles

BB\_2e TIA tia9e

This Little Wristband Will Replace Your Passwords With Your Heartbeat | Wired Design | Wired.com

wired.com

5 5 devices 3:46 pm

Watch: Jaw-Dropping Software Makes 3-D Models From Any Ph

Very cool!

7 7 Software technology

Individual articles with added tags, comments, and number of other users who have tagged the article

How the 'Failure' Culture of Startups Is Killing Innovation | Wired Opinion | wired.com

wired.com

8 9 technology entrepreneurship 3:45 pm



# Searching the Web Effectively

- Search engine
- Subject directory
- Metasearch engine



# Searching the Web Effectively: Using Search Engines Effectively

- Components of search engines
  - Spider
  - Indexer
  - Search Engine Software
- Resulting list appears as list of hits



# Searching the Web Effectively: Using Search Engines Effectively

- Results differ between search engines
  - Proprietary algorithms formulate searches
  - Results ranked based on frequency of keywords
- Boolean operators used to refine search results
  - AND, NOT, OR

# Searching the Web Effectively: Using Search Engines Effectively

- Key phrases
  - Quotation marks to search for exact phrase
  - Search within a specific site
  - Use a wild card (\*)

# Searching the Web Effectively: Using Search Engines Effectively

## Google Search Tools

The image shows a Google search results page for the query "ski resorts". The search bar at the top contains "ski resorts". Below the search bar, there are tabs for "Web", "Images", and "Maps". The "Web" tab is selected. Below the tabs, there are filters for "Any time", "All results", and "Burlington, VT". The search results are titled "Ski resorts near Burlington, VT" and show a list of resorts with their ratings and reviews. The resorts listed are Vermont Ski Areas Association, Stowe Mountain Resort, Sugarbush Resort, and Smugglers' Notch Resort. The page also shows an advertisement for "Only 72 Hours Left - Ski at \$49.99 per day".

Annotations on the image:

- Select time frame**: Points to the "Any time" filter.
- Select location**: Points to the "Burlington, VT" filter.
- Click for other search options such as reading level**: Points to the "More" button (three dots) in the top right corner.
- Click for more Google Apps**: Points to the Google Apps icon (grid of dots) in the top right corner.
- Google Apps**: Points to the Google Apps menu, which includes Translate, Books, Offers, Wallet, Shopping, Blogger, Finance, and Photos.

# Other specialty search tools in Google

## Specialized Search



### Blog Search

Find blogs on your favorite topics



### Patent Search

Search the full text of US Patents



### Finance

Business info, news and interactive charts



### Alerts

Get email updates on the topics of your choice



### Custom Search

Create a customized search experience for your community



### Google Shopping

Search for stuff to buy



### Scholar

Search scholarly papers



### Trends

Explore past and present search trends

# Searching the Web Effectively: Evaluating Websites

- Internet resource considerations
  - Authority
  - Bias
  - Relevance
  - Audience
  - Links





# Check Your Understanding

## 1. What is e-commerce, and what online safeguards are available?

- E-commerce is the business of conducting business online. E-commerce includes transactions between businesses (B2B), between consumers (C2C), and between businesses and consumers (B2C).
- Some important safeguards to keep in mind include looking for indicators that the website is secure; shopping at well-known, reputable sites; and avoiding making online transactions on public computers.



# Check Your Understanding

## 2. What is a web browser, and what are a URL and its parts?

- A web browser is software installed on your system needed to locate, navigate to, and view web pages.
- You gain access to a website by typing in its address, called a Uniform Resource Locator (URL).
- A URL is comprised of several parts, including the protocol, the domain, the top-level domain, and paths (or subdirectories).

# Check Your Understanding

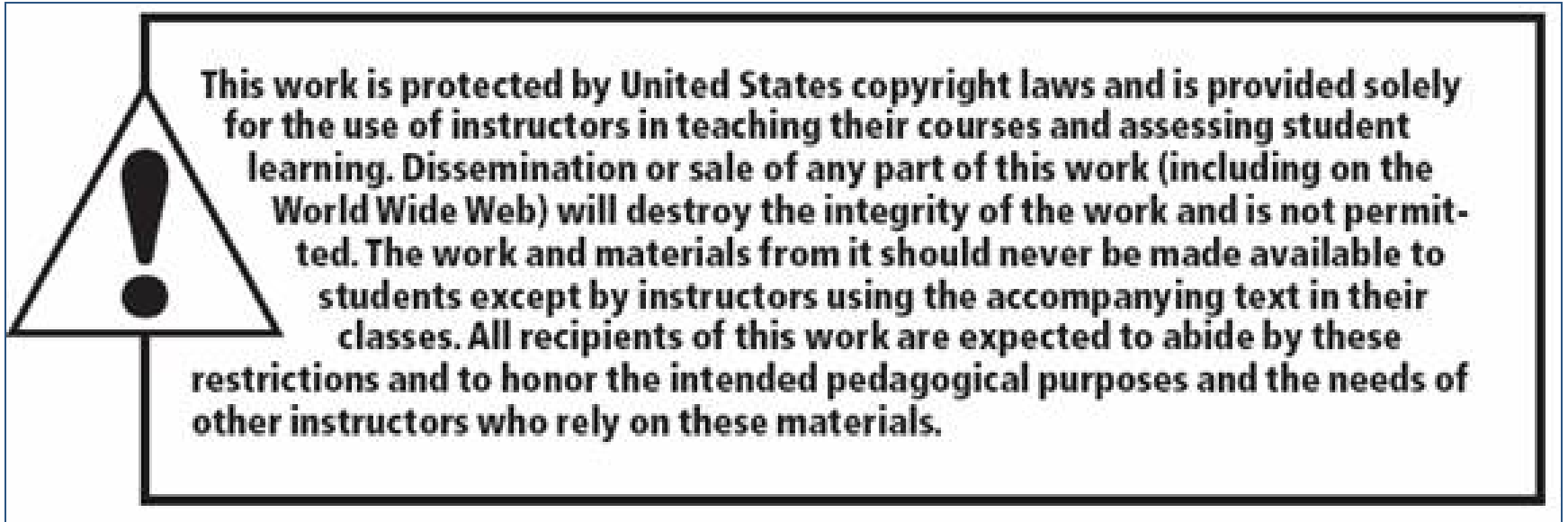
## 3. How can I use hyperlinks and other tools to get around the web?

- Hyperlinks are specially formatted pieces of text or images used to jump from place to place when clicked on.
- You can also use the Back and Forward buttons, History lists, breadcrumb trails, and Favorites or Bookmarks to navigate the web.
- Favorites, live bookmarks, and social bookmarking help you return to specific web pages and help you organize the web content that is most important to you.

# Check Your Understanding

## 4. How do I search the Internet effectively, and how can I evaluate websites?

- A search engine is a set of programs that searches the web using specific keywords you wish to query and then returns a list of the websites on which those keywords are found. Search engines can be used to search for images, podcasts, and videos in addition to traditional text-based web content. A subject directory is a structured outline of websites organized by topic and subtopic. Metasearch engines search other search engines.
- Not all websites are equal, and some are better sources for research than others. To evaluate whether it is appropriate to use a website as a resource, determine whether the author of the site is reputable and whether the site is intended for your particular needs. In addition, make sure that the site content is not biased, the information on the site is current, and all the links on the site are available and appropriate. If multiple sites offer the same content, this is another indication that the information is accurate.



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