Technology in Action

Seventeenth Edition

TECHNOLOGY 17E IN ACTION

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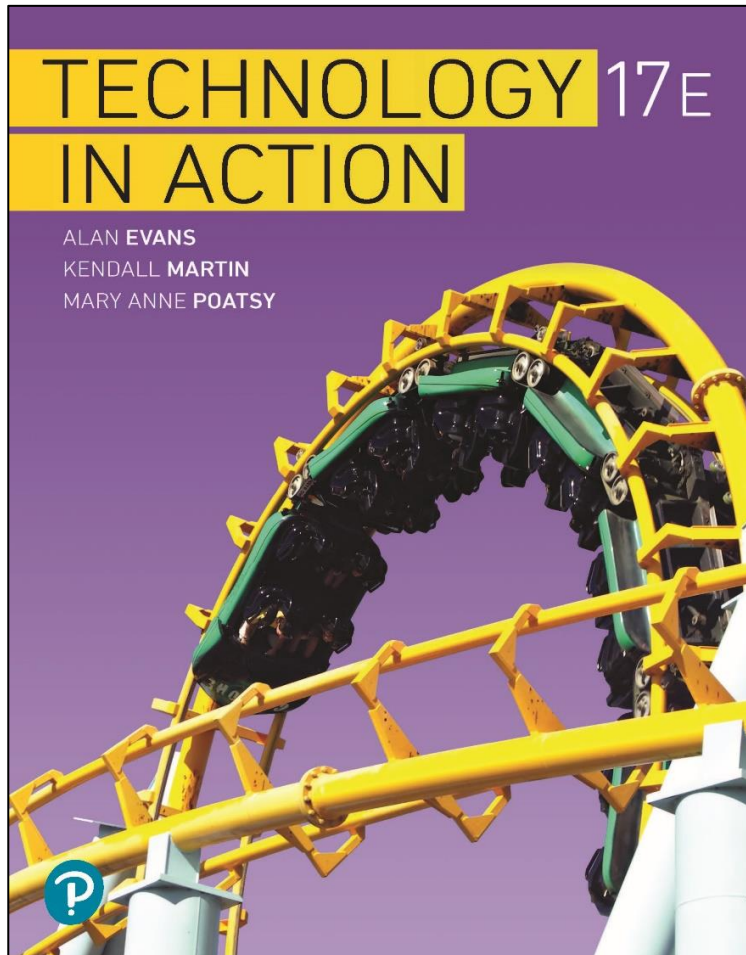
Chapter 3

Using the Internet: Making the Most of the Web's Resources

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Learning Objectives (1 of 3)

3.1 Describe how the Internet got its start.

3.2 Explain how data travels on the Internet.

3.3 Evaluate the tools and technologies used to collaborate on the web.

3.4 Summarize the technologies used to communicate over the web.

3.5 Describe how cloud technologies are used to create, store, and share files.

Learning Objectives (2 of 3)

3.6 Describe how business is conducted using the Internet.

3.7 Summarize precautions you should take when doing business online.

3.8 Explain what web browsers are and describe their common features.

3.9 Explain what a URL is and discuss its main parts.

3.10 Describe tools used to navigate the web.

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Learning Objectives

3.11 Describe the types of tools used to search the web, and summarize strategies used to refine search results.

3.12 Describe how to evaluate a website to ensure it is appropriate to use for research purposes.

3.13 Demonstrate an understanding of Internet-related ethical issues such as deepfakes.

3.14 Demonstrate an understanding of Internet-related ethical issues such as personalized marketing.
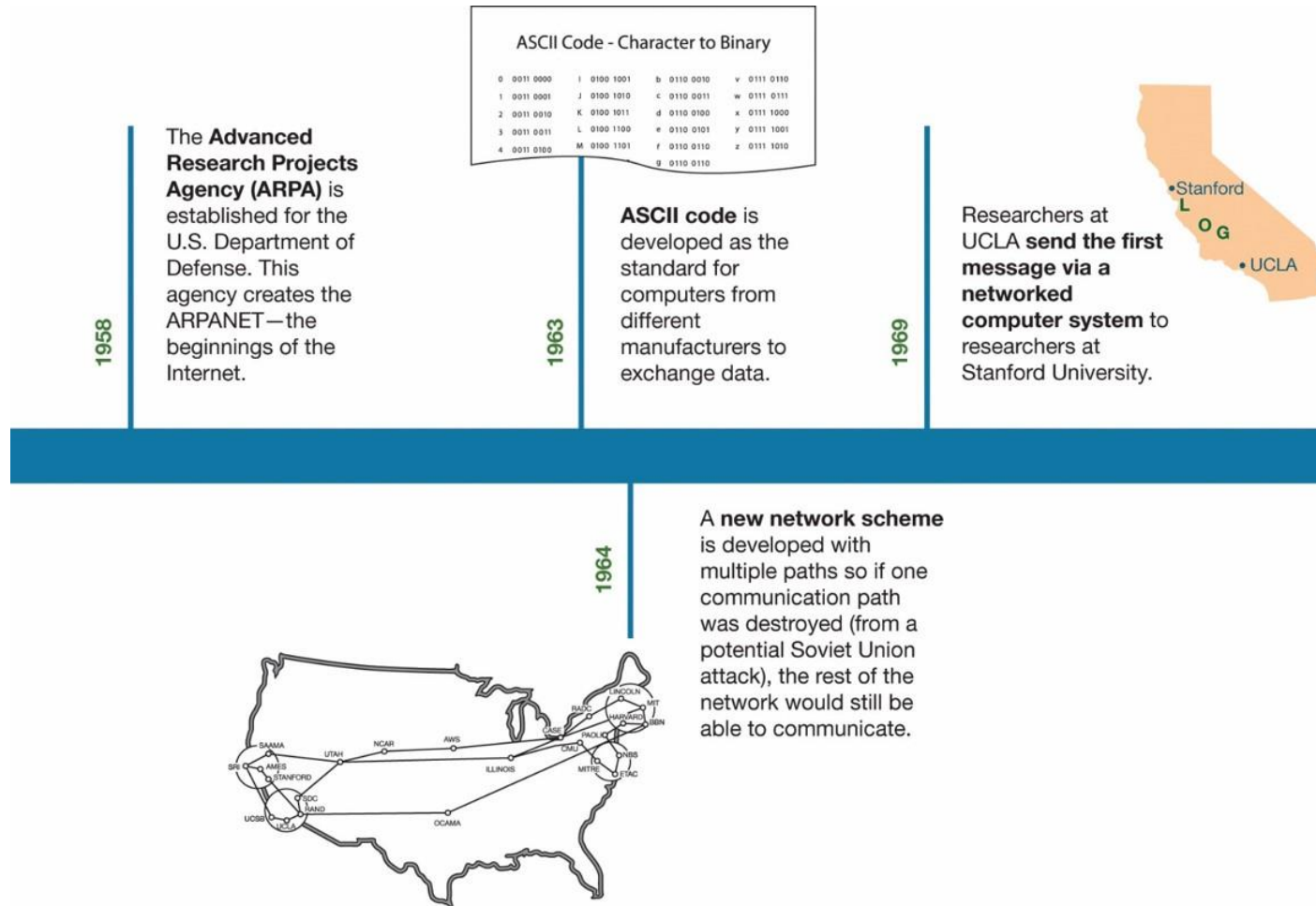
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The Origin of the Internet (Objective 3.1)

- The Internet is a network of networks

- Established a secure form of communications

- Created a means of communication for all computers

- Advanced Research Projects Agency Network (ARPANET)

The Internet and How It Works

The Origin of the Internet (Objective 3.1)

ASCII Code - Character to Binary

0	0011 0000	I	0100 1001	b	0110 0010	v	0111 0110
1	0011 0001	J	0100 1010	c	0110 0011	w	0111 0111
2	0011 0010	K	0100 1011	d	0110 0100	x	0111 1000
3	0011 0011	L	0100 1100	e	0110 0101	y	0111 1001
4	0011 0100	M	0100 1101	f	0110 0110	z	0111 1010
				g	0110 0110		

1958

The **Advanced Research Projects Agency (ARPA)** is established for the U.S. Department of Defense. This agency creates the ARPANET—the beginnings of the Internet.

1963

ASCII code is developed as the standard for computers from different manufacturers to exchange data.

1969

Researchers at UCLA **send the first message via a networked computer system** to researchers at Stanford University.

- Stanford
- UCLA

1964

A **new network scheme** is developed with multiple paths so if one communication path was destroyed (from a potential Soviet Union attack), the rest of the network would still be able to communicate.

The Origin of the Internet (Objective 3.1)

- Internet
  - World Wide Web
    - HTML
    - Began in 1991
    - Developed by Tim Berners-Lee at the European Organization for Nuclear Research

The Internet and How It Works (1 of 2)

How the Internet Works (Objective 3.2)

- Client/server network
  - Client asks for data
  - Server receives request and returns data
  - Internet backbone

The Internet and How It Works 2 of 2

How the Internet Works (Objective 3.2)

- Internet Protocol (IP) address
  - How computers identify each other
  - Websites have unique IP addresses
  - Text versions of IP addresses

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- Social networking
  - Sites
    - Facebook
    - Snapchat
    - Twitter
    - LinkedIn
  - Privacy precautions

- Online collaboration and file sharing tools
  - Google Docs and Microsoft Office Online
  - Screen-sharing or videoconferencing
    - Zoom, Microsoft Teams, and Google Hangout
  - Sharing music, pictures, and videos
    - Instagram, YouTube, Flickr, and SoundCloud

Collaborating and Communicating on the Web
Collaborating With Web Technologies (Objective 3.3)

- Blogs
  - Blog (weblog)
  - Video log (vlog)
  - Create your own blog
  - Microblogs

Collaborating and Communicating on the Web
Collaborating With Web Technologies (Objective 3.3)

- Podcasts
  - Audio/video files delivered via RSS
  - RSS: Really Simple Syndication
  - Aggregator

- Webcasts
  - Broadcast of streaming audio or video content over the Internet

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

- Web-based e-mail

- Desktop client

Collaborating and Communicating on the Web
Communicating Over the Web (Objective 3.4)

- Communicate in real time
  - Texting
  - Instant messaging
  - VoIP

Conducting Business on the Web
Being Productive With Cloud Technologies (Objective 3.5)

- Cloud computing refers to:
  - Storing data, files, and applications on the Internet
  - Being able to access and manipulate these files and applications
  - From any Internet-connected device
  - Google Drive, Microsoft OneDrive, Dropbox, and iCloud

Conducting Business on the Web

Conducting Business Online (Objective 3.6)

- Types of e-commerce business models
  - Business-to-consumer (B2C)
  - Business-to-business (B2B)
  - Consumer-to-consumer (C2C)

Conducting Business on the Web (2 of 2)
Conducting Business Online (Objective 3.6)

- Additional types of e-commerce
    - Social commerce
    - Mobile commerce or m-commerce

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Conducting Business on the Web
E-commerce Safeguards (Objective 3.7)

- Guidelines to make shopping safer
  - Check for secure website
    - Secure sockets layer protocol
  - Use well-known, reputable sites
  - Pay by credit card, not debit card
  - Check return policy
  - Avoid using public computers

Accessing and Moving Around the Web
Web Browsers (Objective 3.8)

- Web browsers

- Graphical browsers

Google Chrome
Most popular browser
Can run on any device and with any OS

Microsoft Edge
Default browser on Windows;
also available for iOS and Android

Firefox
Open source

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

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Accessing and Moving Around the Web (2 of 2)
Web Browsers (Objective 3.8)

- Similar Features
  - Tabbed browsing
  - Pinned tabs/Tear-off tabs
  - Thumbnail previews
  - Tab isolation
  - SmartScreen filter
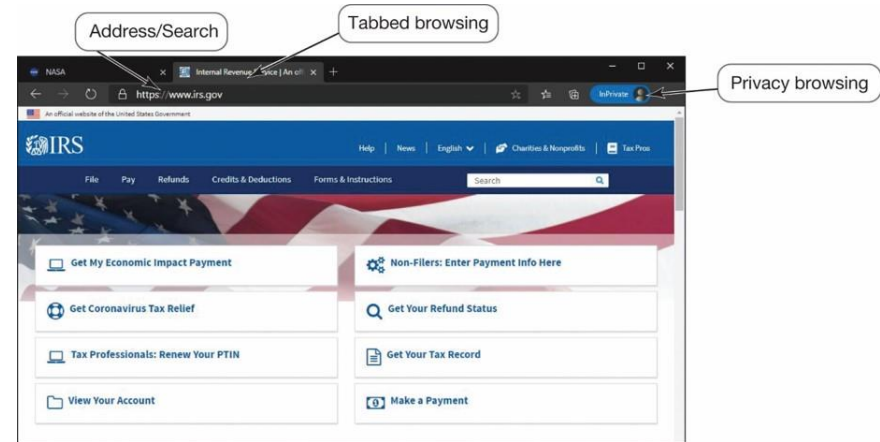
Accessing and Moving Around the Web
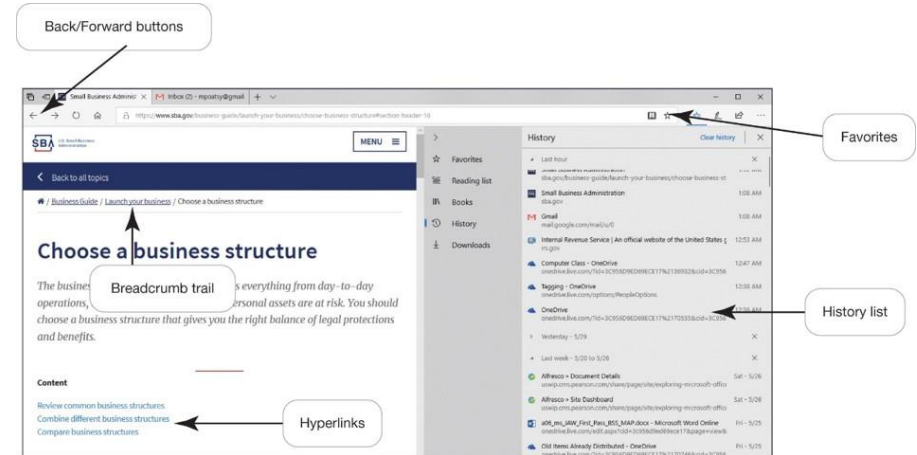## Urls, Protocols, and Domain Names (Objective 3.9)

- URL parts

- Protocol
  - Hypertext Transfer Protocol

- Domain name
  - Top-level domain

- Path
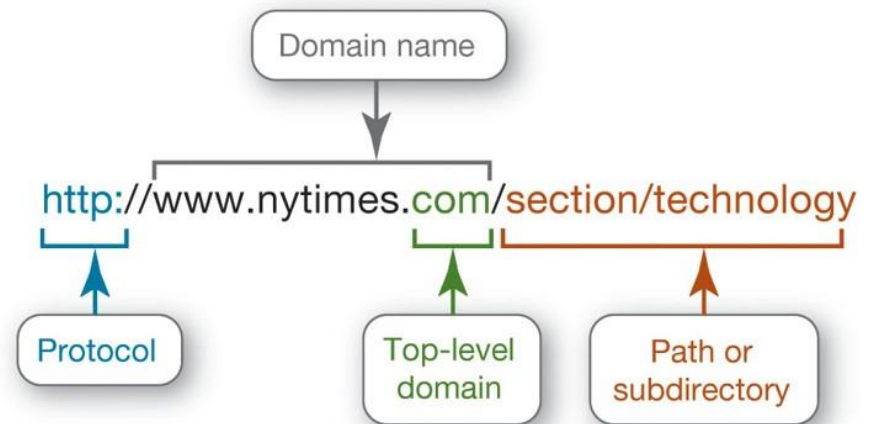
Accessing and Moving Around the Web

Navigating the Web (Objective 3.10)

- Hyperlinks
  - Breadcrumb trail
  - Bookmarks/Favorites
  - History
  - Tagging/social bookmarking

Searching the Web Effectively (1 of 2)
Using Search Engines (Objective 3.11)

- Search engine
  - Keywords
  - Spider
  - Indexer
  - Search engine software

- Specialized search engine

- Metasearch engine

Searching the Web Effectively (2 of 2)

Using Search Engines (Objective 3.11)

- Obtaining better search results
    - Use Boolean operators
    - Search for a phrase
    - Search within a website
    - Use a wild card

Searching the Web Effectively

Evaluating Websites (Objective 3.12)

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

Using the Web Ethically
Deepfakes (Objective 3.13)

- Deepfakes—digital videos or images that are manipulated using AI to create images and sounds that appear to be real
  - Can make a public figure appear to say or do something that they never actually said or did
  - Companies are working hard to create methods to detect deepfakes
  - Becoming increasingly difficult to detect deepfakes

Using the Web Ethically
Personalized Marketing (Objective 3.14)

- Predictive analytics—predicts what a customer wants before the customer knows they want it
  - Personalized marketing is not a threat to personal privacy
  - Studies about privacy and personalized marketing have shown most consumers appreciate marketing that matches their interests and needs

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