Computing Essentials 2013   Tim and Linda O'Leary

Chapter 2
The Internet, the Web, and Electronic Commerce

Lecture Guide

- **Competencies**
  - Discuss the origins of the Internet and the Web.
  - Describe how to access the Web using providers and browsers.
  - Discuss Internet communications, including e-mail, instant messaging, social networking, blogs, microblogs, Webcasts, podcasts, and wikis.
  - Describe search tools, including search engines, Web directories, metasearch engines, and specialized search engines.
  - Evaluate the accuracy of information presented on the Web.
  - Discuss electronic commerce including B2C, C2C, B2B, and security issues.
  - Describe cloud computing, including the three-way interaction of clients, Internet, and service providers.
  - Describe these Web utilities including plug-ins, filters, file transfer utilities, and Internet security suites.

Chapter Outline

- **The Internet and the Web**
  - Internet
    - ARPANET – Advanced Research Project Agency Network
      - Launched in 1969
    - Network infrastructure – connects computers around the world
  - World Wide Web
    - Introduced in 1991 at the Center for Educational Nuclear Research (CERN)
    - Before 1991 the Internet was all text based
    - Web made it possible to include multimedia resources
  - Internet and the Web –
    - Internet is the actual network. Made up of wires, cables, satellites, and rules for exchanging information between computers connected to the network.
    - Web – is a multimedia interface to the resources available on the Internet
  - Uses of the Internet and the Web
    - Communicating
    - Shopping
    - Searching
    - Educating (e-learning)
    - Entertaining
- **Making IT Work for You**
  - **IPODS and Video From the Internet**
    - Internet can be used to locate and play movies and television shows.
    - Transfer video to a digital media player
    - Many services are available on the Internet for finding movies.
      - Download software that connects with a video service
      - Use video service software to search for programs and play them.

- ▪ Purchase movies and shows
- ▪ Upload videos to a digital media player
- **Accessing the Internet**
  - o Providers
    - ▪ Most common way is through ISP – Internet Service Providers.
      - Already connected to the Internet and provide a path or connection for individuals to access the Internet.
    - ▪ Free Internet access
      - Providers such as NetZero and Juno
    - ▪ Commercial Internet providers
      - Provide access through telephone lines, cable, and/or wireless connections
      - Providers such as Verizon, AT&T, Sprint, and T-Mobile
  - o Browsers
    - ▪ Provide access to Web resources
      - Allow you to surf the Web
    - ▪ The most well known browsers:
      - Mozilla Firefox
      - Apple Safari
      - Microsoft Internet Explorer
      - Google Chrome
    - ▪ Allow connections to remote computers
      - Location/address – URL (Uniform Resource Locator) must be known
      - URL's have two basic parts; many have additional parts
        - o Protocol
          - ▪ Rules for exchanging data between computers
          - ▪ http is used for Web traffic and is the most widely used Internet protocol
        - o Domain name
          - ▪ Top-level domain (TLD) – last part of the domain name following the dot (.)
    - ▪ Display text and images
      - Interpret the HTML (Hypertext Markup Language) code from the different documents
      - Display document as a Web page
        - o Web pages can have hyperlinks that connect to other documents containing related information
      - Web pages can also contain special programs
        - o Applets (usually written in Java programming) are special programs that can be downloaded quickly
          - ▪ Used to open new browser windows and check information on online forms (Javascript)
        - o AJAX is an advanced use of JavaScript used to create interactive Web sites
      - Mobile Browsers are special browsers designed to run on portable devices

- **<u>Communications</u>**
  - Communication is the most popular Internet activity
    - E-mail
      - The transmission of an electronic message over the Internet
      - Can contain graphics, photos, and file attachments
      - To send and receive e-mail you need a computer with an Internet connection and an e-mail account.
      - Two basic types of e-mail accounts:
        - Client-based e-mail accounts require a special program known as an e-mail client to be installed on your computer.
          - Most widely used e-mail clients are Microsoft's Outlook Express, Mozilla's Thunderbird, and Apple's Mail.
        - Web-based e-mail accounts do not require an e-mail program to be installed on your computer. Most ISPs offer Webmail services
          - Free Webmail service providers are Google's Gmail, Microsoft's Hotmail, and Yahoo!s Yahoo! Mail.
      - An email has three basic elements:
        - Header – includes the following
          - Address – the address of the person receiving the message
            - Has two parts: the user's name and the domain name.
          - Subject – one line description to present the topic of the message.
          - Attachments – files that can be sent along with the e-mail but are separate from the message
        - Message – letter or note
        - Signature – provides additional information about the sender
      - Spam
        - Unsolicited and unwanted e-mails
        - Can contain computer viruses
        - Spam blocking programs identify and eliminate spam
    - Instant Messaging (IM)
      - Allows two or more people to contact each other via direct live communication
      - To use, register with an instant messaging service provider
      - Specify a list of friends
      - Special software notifies you when your friends are online
      - Includes video conferencing, file sharing, and remote assistance
      - Most widely used services:
        - AOL Instant Messenger
        - Microsoft MSN Messenger
        - Yahoo Messenger

- Currently limited in that many instant messaging services do not support communication with other services.
- Universal instant messaging programs support communications among different services. Digsby, Pidgin, and Qnext are some of these types of programs.

o Social Networking
- Connecting individuals to one another – fastest-growing use of the Internet
- Focus is on connecting people and organizations that share a common interest or activity.
- Typically provide a wide array of tools that facilitate meeting, communicating, and sharing.
- Three of the best known are:
  - MySpace
    - First large-scale social networking site
    - Focus is primarily on music, movies, celebrities, and TV for teenage audiences.
  - Facebook
    - Three basic categories of Facebook users:
      - Individuals
        - Create Facebook Profiles which may include photos, lists of personal interests, contact information, and other personal information.
        - Profiles available to friends, family members, and others who share a common interest.
      - Businesses
        - Create Facebook Pages to promote products and services
        - Public figures such as politicians and entertainers
      - Communities
        - Create Facebook groups who share a common interest
        - Groups are organized around topics, events, or ideas
  - LinkedIn
    - Premier business oriented social networking site.
    - Largest social networking site focusing on business professionals.

o **Blogs, Microblogs, Webcasts, Podcasts, and Wikis**
- These sites help ordinary people communicate across the Web
  - Many individuals create personal Web sites, called Web logs or **blogs**, to keep in touch with friends and family
    - Used by individuals, groups and businesses to share information
  - Microblogs – publishes short sentences that only take a few seconds to write. Twitter is an example of a microblog.

- Webcasts and podcasts – deliver media content such as music and movies over the Internet to your computer.
  - Webcasts use streaming technology – after a Webcast has been completed there are no files remaining on your computer.
  - Podcasts do not use streaming technology – before a podcast can be run it must be downloaded and save on your computer.
- Wikis - a Web site specially designed to allow visitors to fill in missing information or correct inaccuracies
  - Wikis support collaborative writing for a community of interested people
  - Wikipedia is an example of a wiki

- **Making IT Work for You**
  - Twitter is a microblog
  - Using Twitter involves posting short messages about your current status
  - Enter a short message in the "***What are you doing?***" text box
- **Search Tools**
  - Over twenty billion pages and more are being added to the Internet daily
  - A number of search services or search providers help users locate the needed information
    - Maintain huge databases of the pages on the Internet and Web
    - Search tools use special programs called **spiders** continually look for new information and update databases
    - **Search engines**
      - specialized programs that help locate information on the Web and the Internet
      - Searches for information based on keywords and phrases
      - Google, Yahoo, MSN Search, and Ask are examples
    - **Web Directories**
      - Organizes information according to categories or topics.
    Dir.yahoo.com, www.dmoz.org are examples **Metasearch engines**
      - Automatically sends requests to several search engines simultaneously
      - Dogpile, ixquick, and Metacrawler are examples
    - **Specialized search engines**
      - Focus on subject-specific Web sites
      - See examples in Figure 2-18 of specialized search engines
    - **Content evaluation**
      - Not all information found on the Web is accurate
      - To evaluate accuracy of information on the Web consider these:
        - Authority – is the author an expert?
        - Accuracy – was the information critically reviewed?
        - Objectivity – does the author have a personal bias?
        - Currency – is the information up to date?
- **Electronic Commerce**
  - Also known as e-commerce

- o Buying and selling over the Internet
- o Advantages to the buyer
    - They can buy things 24/7
    - There is no travel time
    - They can shop from anywhere
- o Advantages to the seller
    - Lower costs
    - Reduced inventory
    - Ship goods directly from warehouse
- o Disadvantages
    - Inability to provide goods immediately
    - Can't "try on" purchases
    - Security issues
- o **Three basic types of electronic commerce include:**
    - Business to consumer (B2C)
    - Consumer to consumer (C2C)
    - Business to business (B2B)
- o Business-to-Consumer E-commerce
    - Sale of goods and services to the general public
    - Wholesale or retail organizations use it
    - Fastest growing type of e-commerce
    - Three most widely used B2C applications
        - Online Banking (e-banking)
            - o Customers can do many operations such as accessing account information, balancing check books, transferring funds, paying bills, and applying for loans
            - o They can get account statements online
        - Online stock trading (e-trading)
            - o Allows investors to research, buy and sell stocks and bonds over the Internet
            - o Users can see a great cost savings using the Internet versus using a traditional broker
        - Online shopping (e-retailing, e-tailing)
            - o Sale of a wide range of consumer goods over the Internet
            - o Consumers use Web storefronts to browse, compare products and locate products, place products in virtual shopping carts, and purchase products
- o Consumer-to-Consumer E-commerce
    - Consists of Web auctions - individuals selling to each other
    - Two types of Web auctions sites:
        - Auction House sites
            - o Sell a wide range of goods directly to bidders
            - o Items auctioned are typically overstocks from the auction house sites warehouse
            - o They are considered a safe place to shop
        - Person to person auction sites
            - o Operate like a flea market

- o The auction site provides a place where many buyers and sellers gather
- o The auction site facilitates the bidding process; they are not involved in completing transactions or in verifying the authenticity of the merchandise sold
- o Typically these sites are "buyer beware"
- o For a list of the most popular Web auction sites, see Figure 2-21
- Security – greatest challenge for e-commerce is the development of fast, secure, and reliable payment methods for purchased goods.
  - Three basic payment options:
    - o Check
      - Most traditional, and perhaps, safest method of payment
      - Takes the longest time to complete
      - The check is sent via mail. Upon receipt, the check needs to be verified. When validated, the merchandise is shipped.
    - o Credit card
      - Faster and more convenient than checks
      - Fraud is a major concern when using credit cards for both sellers and buyers
      - Sellers have to worry about someone using a stolen credit card (carders)
    - o Digital cash
      - The Internet equivalent of traditional cash
      - Buyers purchase digital cash by transferring funds from their accounts to a bank that specializes in electronic currency
      - Buyers purchase items using digital cash and sellers convert digital cash to traditional cash through a third party bank
      - Digital cash isn't as convenient as credit cards, but it's more secure.
      - See Figure 2-23 for a list of digital cash providers
- **Cloud Computing**
  - o Uses the Internet and the Web to shift many computer activities from the user's computer to other computers on the Internet
  - o Seen by many as a new model for computing that frees users from owning, maintaining, and storing software and data.
    - Access to services from anywhere through an Internet connection
    - Firms perusing: Google, IBM, Intel, and Microsoft: Basic components to cloud computing are:
      - Clients
        - o Corporations and end users who want access to data, programs, and storage.
        - o Access available anywhere and anytime that a connection to the Internet is available

- o End users do not need to buy, install, and maintain application programs and data
  - Internet
    - o Provides the connection between the clients and the providers
  - Two most critical factors determining the efficiency of cloud computing are:
    - o Speed and reliability of the user's access to the Internet
    - o Internet's capability to provide safe and reliable transmission of data and programs
  - Service Providers
    - o Organizations with computers connected to the Internet that is willing to provide access to software, data, and storage.
    - o Providers may charge a fee or it may be free
      - Google Apps provides free access to programs with capabilities similar to Microsoft's Word, Excel and PowerPoint through an Internet connection
- **Web Utilities**
  - o Utilities are programs that make computing easier
  - o Web utilities are specialized utility programs that make using the Internet and the Web easier and safer
  - o Some utilities are browser-related programs that either become part of the browser or are executed from the browser
  - o **Plug-ins**
    - Automatically start up and operate as part of the browser
    - Some Web sites require plug-ins to experience their complete content
      - Adobe's Acrobat Reader - used to view and print standard forms and documents saved in a special format called PDF.
      - Windows Media Player - used to play audio and video files
      - QuickTime, from Apple - for playing audio and video files
      - RealPlayer from RealNetworks' - used for playing audio and video files
      - Shockwave from Adobe - used for playing Web-based games and for viewing concerts and dynamic animations
    - Some are included in today's browsers and operating systems
    - Others must be installed before they can be used by the browser
  - o **Filters**
    - Access to selected sites can be blocked, as well as setting time limits
    - Parents usually want them to keep their children from roaming the Internet unrestricted.
    - These programs can monitor use, and generate reports detailing the total time spent on the Internet and the time spent at individual Web sites, chat groups, and newsgroups
    - Some programs that provide these functions are Net Nanny, Cybersitter, and CyberPatrol. See Figure 2-30
  - o **File Transfer Utilities**
    - File transfer protocol (FTP) and secure file transfer protocol (SFTP)

- Allow for the transferring of files across the Internet
- Hosted by an Internet Service Provider
  - Web-based file transfer services
    - Make use of a Web browser to upload and download files
    - Eliminates the need for any custom software to be installed
    - A popular Web-based file transfer service is drop.io
  - BitTorrent
    - Distributes file transfers across many different computers
    - A single file might be located on dozens of individual computers
    - Well suited for transferring very large files
- **Internet Security Suites**
  - Collection of utility programs designed to protect your security and privacy while on the Internet
  - Protects your computer from viruses, controls spam, and provides filters
  - Cost of purchasing a suite is typically less than purchasing each of the functions separately
  - Two of the best known are McAfee's Internet Security and Symantec's Norton Internet Security

- **Careers in IT**
  - Webmasters
    - Develop and maintain Web sites and resources
    - Job includes backup of the company Web site, updating resources, or development of new resources
    - Involved in the design and development of the Web site
    - Monitor and update interface design, as well as traffic to the Web site
    - Webmasters can work with marketing departments
    - Employers look for candidates with a bachelor's or associate's degree in computer science or information systems that have HTML programming, knowledge of other common programming languages and Web development software.
    - Experience using Web authoring software and programs like Adobe Illustrator and Adobe Flash are often preferred
    - Good communication and organizational skills are vital in this position

- **A Look to the Future**
  - Web-Accessible Refrigerators Will Automatically Restock Themselves
    - What if your home refrigerator could restock itself?
    - The idea is not new. Several companies offer kitchen appliances that connect to the Internet
    - Homes of the future will contain more than just smart appliances
    - Internet viruses and spyware are still an issue

Teaching tips

- **The Internet and the Web**
    - Most students feel that the Internet and the Web are synonymous, so it helps to stress the distinction between the two. You could emphasize that the Internet is a network infrastructure consisting of computers connected to one another. The Internet connects computers around the world and provides resources and services to the user. On the other hand the Web is a multimedia interface to the resources available on the Internet resources
    - You may wish to engage the students by asking them what they use the Internet and the Web for. Some of these answers may be stated:
        - Communicating
        - Shopping
        - Searching
        - Entertainment
        - Education (e-Learning)
- **Access**
    - Discuss with the students the different types of Internet Service Providers (ISP) and which ones they use to connect to the Internet with (dial-up, DSL, Cable, and wireless modems).
    - Browsers are the second part of accessing the Internet
        - This software connects you to remote computers, opens and transfers files, displays text and images, and provides in one tool an interface to the Internet and Web documents
        - For browsers to connect, an address or location is needed
            - Uniform Resource Locator (URL) - address
                - Protocol – rules for exchanging data
                - Domain name – indicates the specific address where the resource is located
        - Documents (Web pages) that are located contain Hypertext Markup Language (HTML) and links to other related pages
        - Web pages also contain special programming like JavaScripts to add interest and activity
    - Mobile browsers are designed to run on portable devices like cell phones
    - Open a discussion by asking students which browser they use and why they like that particular one. For example: FireFox versus Internet Explorer.
- **Communication**
    - E-mail – you should emphasize that it is the most common form of Internet communication and explain the three parts of an e-mail.
        - Header includes:
            - Addresses – sending and receiving
            - Subject – one line description of the topic of the message
            - Attachments – file name
        - Message
        - Signature

- Most students don't realize that it is the attachments that can contain viruses. You can explain how to recognize a potential threat and how to deal with it.

- Spam is a huge complaint among most people, but especially among students. It is helpful to demonstrate how to setup junk mail rules and use the Spam blocking feature of an e-mail package.

- o Instant Messaging – allows two or more people to contact each other via direct, live communication

  - Most widely used instant messaging services are AOL' Instant Messaging, Microsoft's MSN Messenger, and Yahoo Messenger

  - However, many students do not know about the universal instant messaging programs that support communications among services. It is helpful to explain at least one of these (Digsby, Pidgin, and Qnext) and illustrate how it works.

- o Social networking – these sites are setup to help users find others with similar interests and hobbies, friends, etc. Most students have already used at least a site, such as MySpace.com, Facebook.com, and LinkedIn.
  - Discuss security and how to protect yourself from unwanted guests, such as stalkers. This is a good topic to open a discussion and setup a discussion group.
- o Blogs, Microblogs, Webcasts, Podcasts, and Wikis
  - These sites help ordinary people communicate across the Web
    - Many individuals create personal Web sites, called Web logs or **blogs**, to keep in touch with friends and family
      - o Used by individuals, groups and businesses to share information
    - **Microblogs** – publishes short sentences that only take a few seconds to write. Twitter is an example of a microblog.
    - **Webcasts** and **podcasts** deliver audio, video, and other media content over the Internet.
      - o Webcasts use streaming technology whereas Podcasts do not.
    - **Wikis** - a Web site specially designed to allow visitors to fill in missing information or correct inaccuracies
      - o "Wiki" comes from the Hawaiian word for fast
      - o Wikis demonstrate collaborative writing in which there isn't a single expert author, but rather a community of interested people that builds knowledge over time.
      - o Most famous example is Wikipedia.
    - **This is a good time to open a discussion with students and ask them why not use information on the Wikipedia site when doing research assignments (the information is not based on facts as much as it is on personal opinions).**
- **Search Tools**

- o In order to illustrate how the different types of search engines work, ask the students to perform several searches. Tell them to use one of each different type of search engine that you have specified. They should use the exact key word/phrase search on each engine. The results will vary widely in the "hits" they receive, as well as, the type of information received.

- o Review "tips" on page 46 to stress a few pointers in doing a search

- o **Content evaluation**
  - Anyone can publish something on the Web, so be careful!
  - To evaluate accuracy consider these
    - o Authority – is this an official site?
    - o Accuracy – can I contact the author if I find inaccuracies?
    - o Objectivity – does the author have a personal bias?
    - o Currency – has the data been updated on the Web page?

- **Electronic Commerce**
  - o E-commerce is the fastest growing segment of the Internet. Many students have participated in at least one type of e-commerce activity. For example:
    - Online banking
    - Online stock trading
    - Online shopping
  - o Discuss and review the following Web auction sites:
    - Amazon
    - WeBidz
    - eBay
    - Overstock
  - o Security
    - Digital cash is the Internet's equivalent to traditional cash
    - See Figure 2-23 for a list of digital cash providers

- **Cloud Computing**
  - o Some suggest the term is merely a marketing term to promote new products while others see cloud computing as a means to free users from owning, maintaining and storing software and data.
    - Discuss how users can access services from anywhere through an Internet connection. Some may charge a fee, while others like Google Apps provide access to users for free.
      - IBM
      - Google
      - Intel
      - Microsoft
      - Yahoo
    - Discuss the basic components to cloud computing and have students discuss how the Internet and the Web enable companies to shift many of their computer activities from their corporate computer to other computers on the Internet.
      - Clients
      - Internet providers
      - Service providers

- **Web Utilities**
  - Plug-ins
    - Discuss how Acrobat Reader from Adobe and Windows Media Player from Microsoft are used.
    - Have the students list other plug-ins
  - Filters - block access to selected sites
  - File Transfer Utilities
    - Demonstrating FTP can be more straightforward. You can demonstrate FTP simply by saving a file or picture using the "Save as" option in Internet Explorer. The students can relate to this concept more readily because they may have downloaded music and other files on the Internet.
      - File transfer protocol and secure file transfer protocol
      - Web based file transfer services
      - BitTorrent
- Internet Security Suites

Discuss the importance of Internet security and open a discussion with students on security issues that they have experienced and how they dealt with the problem. Very few individuals or organizations have escaped having to deal with some type of Internet security issue. **Key Terms**

Key Term	Definition
address	The location or name of a Web site.
Advanced Research Project Agency Network(ARPANET)	Launched in 1969 when the United States funded a project that developed a national computer network.
AJAX	An advanced use of JavaScript that can be found on many interactive sites.
applets	Special programs on Web sites that provide animation, interactivity, and display graphics.
attachment	Files, such as documents and worksheets that can be sent along with an e-mail message.
auction house site	Sell a wide range of merchandise directly to bidders.
BitTorrent	A type of file transfer that distributes files across many different computers for more efficient downloads.
blog	Web logs that contain time stamped postings.
browser	Software programs that provide a user interface to Web resources.
business-to-business (B2B)	Involves the sale of a product or service from one business to another over the Internet
business-to-consumer (B2C)	The sale of a product or service to the general public or end users over the Internet
cable	Modems that provide Internet high-speed access using unused bandwidth on a cable television network.
carder	Criminals that specialize in stealing, trading, and using stolen credit cards over the Internet.

Center for European Nuclear Research (CERN)	Introduced the World Wide Web in 1992 in Switzerland.
client based e-mail account	Special program known as an e-mail client that needs to be installed and running in order to enable a computer to communicate with the e-mail service provider.
cloud computing	Uses the Internet and the Web to shift many computer activities from a user's computer to computers on the Internet.
consumer-to-consumer (C2C)	Involves individuals selling to individuals over the Internet.
digital cash	Internet's equivalent to traditional cash. Buyers purchase digital cash from a third party by transferring funds from their banks.
domain name	It is part of an URL that signifies the name of a Web server where the resource is located.
downloading	Copying a file from a server to a local computer.
DSL	Digital Subscriber Line, provides a digital connection over unused frequencies of standard telephone lines.
e-commerce	Buying and selling of goods over the Internet. (See also electronic commerce)
e-learning	Being able to take classes on almost any subject from educational institutions that offer courses online.
electronic commerce	Buying and selling of goods over the Internet. (See also e-commerce)
electronic mail	Electronic mail, the transmissions of electronic messages over the Internet. (See also e-mail)
e-mail	Electronic mail, the transmissions of electronic messages over the Internet. (See also electronic mail)
e-mail client	Special program required to communicate with the e-mail service provider in client-based e-mail accounts.
Facebook	Social networking site that provides an array of features and applications including instant messaging, photo and video sharing, games, and more.
Facebook groups	Share information that is typically organized around topics, events, ideas.
Facebook pages	Created by businesses to promote products and services.

Facebook profiles	Created by individuals who may include photos, lists of personal interest, contact information, and other personal information.
file transfer protocol (FTP)	An Internet standard for transferring files.
filter	Blocks access to selected Web sites.
friend	A person that you specify in a list to use instant messaging.
header	The first element of an e-mail message.
hit	A list of sites that contain the keywords from a search.
hyperlink	Connect to other documents, which can be video files, text, graphics, audio files, etc.
Hypertext Markup Language (HTML)	Text based programming language used to create Web pages.
instant messaging (IM)	An extension of e-mail that allows two or more people to contact each other via direct, live communication.
Internet	Launched in 1969 with ARPANET, the Internet (Net) consists of the actual physical network made up of wires, cables, and satellites.
Internet security suite	A collection of utility programs designed to maintain security and privacy while on the Web.
Internet service provider (ISP)	Provides a path or connection for individuals to access the Internet.
Java	A programming language used to create applets.
JavaScript	A scripting language that adds basic interactivity to Web pages.
link	Nickname for a Hyperlink.
LinkedIn	Social networking site focusing on business professionals.
Location	The name of a Web site.
Message	The second element of an e-mail that consists of the body of the e-mail.
metasearch engine	Programs that automatically submit your search request to several search engines simultaneously.
Microblog	A Web site that publishes short sentences that only take a few seconds to write. Twitter is a microblog.
mobile browser	A special browser designed to run on portable device.
MySpace	Social networking site focusing primarily on music, movies, celebrities, and TV for teenage audiences.
online	Being connected to the Internet.
online banking	Customers can go online to access account information, balance check books, transfer funds,

	pay bills, and apply for loans.
online shopping	The buying and selling of a wide range of consumer goods over the Internet.
online stock trading	Allows investors to research, buy, and sell stocks and bonds over the Internet.
person-to-person auction site	The site is a forum for numerous buyers and sellers to gather. The site typically facilitates the bidding process, but doesn't complete transactions or verify the authenticity of the goods sold.
plug-in	Program that automatically start and operate as a part of a Web browser in order to enable a full experience of the content of a Web site.
Podcast	Deliver media content widely used to download music and movies over the Internet.
protocol	Rules for exchanging data between computers.
search engine	An organization helps individuals locate information on the Web. (See also search service).
search service	An organization helps individuals locate information on the Web. (See also search engine)
Secure file transfer protocol (SFTP)	Allows the copying of files to and from a computer across the Internet and are frequently for uploading changes to a Web site hosted by an Internet service provider.
signature	The third element of an e-mail message that provides additional information about the sender.
social networking	Using the Internet to connect individuals to one another
spam	Unwanted or unsolicited e-mail.
spam blocker	Software programs that are installed to work with e-mail programs to filter unwanted e-mail messages.
spam filter	Programs used to identify and eliminate spam.
specialized search engine	Focus on subject-specific Web sites.
spider	Special programs that continually look for new information on the Internet and update the search services' databases.
streaming	Technology in which audio and video files are continuously downloaded to a computer while the computer user is listening to and/or viewing the file content.
subject	Part of the header element in an e-mail, usually a one line description of the message.
surf	Exploring or browsing information on the Web.
top-level domain (TLD)	Another name for a domain name.
Twitter	A microblog that publishes short sentences.
uniform resource locator (URL)	The name, or address, of a Web site.
universal instant messenger	Software that allows users of different instant

	messaging services to communicate with one another.
uploading	To copy a file from a local machine to a server.
virus	Destructive program often attached to unsolicited e-mail.
Web	Introduced in 1992 at CERN, the Web (WWW and World Wide Web) provides a multimedia interface to Internet resources.
Web auction	Sellers post descriptions of products at a Web site and buyers submit bids electronically.
Web-based e-mail account	Use Webmail clients located on the e-mail providers computer.
Web-based file transfer services	Services that make use of a Web browser to upload and download files: i.e.: drop.io
Webcasts	Use streaming technology in which audio and video files are continuously downloaded to the user's computer while they are listening to and/or viewing the file content.
Web directory	Organize information according to categories and are designed to find general information about a topic.
Web log	Personal Web sites that contain time stamped postings.
Webmail	Once a computer connects to an e-mail service provider, a special program called a Webmail client runs on the e-mail provider's computer and e-mailing can take place.
Webmail client	Program that runs on an e-mail provider's computer and enables Webmailing to take place.
Webmaster	Develops and maintains Web sites and Web resources.
Web page	A document on the Web.
Web utility	Specialized programs that make using the Internet and the Web easier and safer.
Wiki	A Web site specially designed to allow visitors to fill in missing information or correct inaccuracies.
Wikipedia	An online 'wiki' encyclopedia written and edited by anyone who wants to contribute.
wireless modem	They transmit information that is modulated onto a carrier frequency to allow many simultaneous wireless communication links to work simultaneous on different frequencies.

Answers to End-of-Chapter Materials
Chapter 2

Num	Multiple Choice Answers (Book)	Matching Answers (Book)	Multiple Choice Answers (www.computing2013.com Only)	Matching Answers (www.computing2013.com Only)
1	B	A	B	A
2	B	E	A	B
3	A	C	B	I
4	B	I	B	E
5	A	F	A	H
6	C	J	B	G
7	C	G	B	J
8	C	H	C	F
9	A	B	A	D
10	A	D	D	C

Open Ended Questions:
1. **Discuss the Internet including its origins and most common uses. What activities have you participated in? Which one do you think is the most popular?**
   Some of the uses of the Internet are communicating, shopping, searching, entertainment, and education. Some activities of communicating are e-mailing, instant messaging, and discussion groups. Some activities of entertainment are music, movies, and computer games. Other activities to participate in are shopping, doing research online, and using online periodicals. The most popular is communicating.

2. **Discuss how to access the Internet. What are providers? Define browsers and discuss URLs, HTML, JavaScript, Applets, and mobile browsers.**
   The most common way to access the Internet is through an Internet service provider (ISP). Once connected a user can use a browser program to search the Web, communicate with others through e-mail or social networking sites and perform numerous other activities such as file sharing.

   - Internet service providers are connected to the Internet, providing a path for individuals to access the Internet. Connection technologies include dial-up, DSL, cable, and wireless modems.

   - Browsers are programs that provide access to Web resources. This software connects you to remote computers, opens and transfers files, displays text and images, and provides an uncomplicated interface to the Internet and Web documents.

   - URLs – for browsers to connect to resources, the location or address of the resources must be specified. These addresses are called uniform resource locators (URLs). All URL's have two basic parts: Protocols – rules for exchanging data between computers and domain names – specific address where the resource is located.

- HTML – is a text based programming language used to create Web pages. The browser interprets the HTML formatting instructions in the document file found on the Web and displays the document as a Web page.

- JavaScript – a scripting language that adds basic interactivity to Web pages such as opening new browser windows and checking information entered in online forms.

- Applets – special programs on Web sites that provide animation, interactivity, and display graphics. They are written in the Java programming language. These programs can be downloaded quickly and run by most browsers.

- Mobile browsers – special browser designed to run on portable devices. Mobile browsers are displayed on very small screens and special navigational tools are required to conveniently view Web content.

3. Discuss Internet communications including client-based and Web-based e-mail, instant messaging, social networking, blogs, microblogs, Webcasts, podcasts, and wikis. Communication is arguably the most popular use for the Internet, both for business and personal usage.

   - E-mail is a valuable technology, and service providers include Microsoft Outlook, Mozilla Thunderbird, and Google Gmail. While e-mail is a powerful tool for communication, a drawback is spam, or unsolicited/unwanted e-mails. Spam blockers can help protect and filter these unwelcome e-mails.
   - Client-based and Web based e-mail
       i. Client-based e-mail accounts use a special program known as an e-mail client which must be installed on the user's computer.
       ii. Web-based e-mail accounts do not require an e-mail program to be installed on the user's computer. Instead, they use Webmail clients that are located on the e-mail provider's computer. This is known as Webmail
   - Instant messaging allows two or more people to contact each other via direct, real-time communication. IM software allows users to see who of their friends are online. Most IM programs also include file sharing, video conference, and remote assistance features. Some of the most widely used IM programs are AOL's Instant Messenger, Microsoft's MSN Messenger, and Yahoo Messenger.
   - Social networking sites, such as Facebook and MySpace, allow users to create an online profile to connect with others who have also done so. The three basic categories of Facebook users are: individuals, businesses, and communities.
   - Blogs are personal Websites that users can create to keep in touch with friends and family. Some blogs can contain professional subject matter (e.g., reviewers, critics, journalists), but many are simply online diaries for personal information. Blog entries are arranged with the most recent entry first. Two of the most widely used blog sites are Blogger and WordPress.
   - Microblogs are designed to keep friends and family up-to-date with short sentences, rather than longer posts in a traditional blog site. The popular microblogging site is Twitter.
   - Webcasts – deliver media content such as music and movies over the Internet. Webcasts use streaming technology in which audio and video files are

continuously downloaded to the computer while the user is listening to and/or viewing the file content. Once the Webcast is completed, there are no files remaining on the user's computer. Webcasts typically broadcast live events.

- Podcasts – like Webcasts are also used to deliver media content such as music and movies over the Internet. However, podcasts do not use streaming technology. The media file must be downloaded and saved to a computer. Once downloaded, the file can be played at anytime as the file is saved on the user's computer.
- A wiki is a Web site that allows visitors to add or fill in information to a blog site. The most famous example of this is Wikipedia, an online encyclopedia that allows anyone to add or contribute to entries.

4. **Define search tools including search services. Discuss search engines, Web directories, metasearch engines, specialized search engines. Describe how to evaluate the content of a Web site.**
    - WEB is a massive collection of interrelated pages. Locating the precise information can be difficult to locate. A number of organizations called search services operate Web sites that help locate the information needed. They maintain huge databases related to information provided on the Web and the Internet. Special programs called spiders continually look for new information and update the search service's databases. Additionally, search services provide special programs called search engines.
    - Search engines – help locate specific information on the Web.
        - Keyword search uses words and phrases to find information
            - ○
        - Specific search uses specific words and phrases to find information
            - ○
        - Web directory – also known as subject directories, organize information according to categories or topics. Designed to find general information about a topic. Ex: dir.yahoo.com and www.dmoz.org
        -
        - Metasearch engines - Automatically sends requests to several search engines simultaneously. Ex: Dogpile, Profusion, and Metacrawler

        - Specialized search engines – focus on a specific subject. Ex: Infomat.com, Historynet.com, and Medsite.com
        -

5. **Describe electronic commerce, including business-to-consumer, consumer-to-consumer, and business-to-business e-commerce, and security.**
    - Electronic commerce (aka e-commerce), is the buying and selling of goods over the Internet. Electronic commerce is experiencing rapid growth, in large part due to the convenience (e.g., 24/7 accessibility, no physical retail store needed) it provides to both consumers and sellers. Some disadvantages include the inability to provide immediate delivery and security of online payment. The three types of electronic commerce include:
        i. Business-to-consumer (B2C): Involves the sale of a product or service to the general public or end user. Amazon.com is a popular example. The

three most widely used B2C applications are for online banking, financial trading, and shopping.
    ii. Consumer-to-consumer (C2C): Involves individuals selling to individuals. eBay is an example of this type of site.
    iii. Business-to-business (B2B): Involves the sale of one business to another.
- Security: The single greatest challenge for e-commerce is the development of fast, secure, and reliable payment methods for purchased goods. This issue is a huge challenge for online banking, online stock trading, and online shopping. Three basic payment options are check, credit card, and digital cash. Buyers purchase digital cash from a third party and use it to purchase goods. Sellers accept digital cash and convert to traditional currency through the third party.

6. **What is cloud computing? Describe the three basic components of cloud computing.**
   - Cloud computing allows users to maintain, store, and access software and data from the Internet, rather than from the users' hard drives. The basic components of cloud computing are:
     - i. Clients: Corporations and end users who want access to data, programs, and storage.
     - ii. The Internet: Provides the connection between the clients and the providers.
     - iii. Service providers: Organizations with computers connected to the Internet willing to provide access to software, data, and storage.

7. What are Web utilities? Discuss plug-ins, filters, file transfer utilities, and Internet security suites.
   - Web utilities are specialized utility programs that make using the Internet and the Web easier and safer.
   - Plug-ins
     - are automatically loaded and operate as part of a browser.
     - Many Web sites require specific plug-ins to fully experience their content.
     - Some plug-ins are included in many of today's browsers; others must be installed.
   - Filters
     - Are used by parents and organizations to block certain sites and to monitor the use of the Internet and the Web
   - File transfer utilities
     - Copy files to (downloading) and from (uploading) to your computer.
       - Three types are:
         - File Transfer Protocol and secure file transfer protocol which allow users to efficiently copy files across the Internet
         - Web-based file transfer services make use of a Web browser to upload and download files
         - BitTorrent distributes file transfers across many different computers
   - Internet security suites

Computing Essentials 2013   Tim and Linda O'Leary

- o Collection of utility programs designed to protect your privacy and security on the Internet