

# Discovering Computers

Technology in a World of Computers,  
Mobile Devices, and the Internet

## Chapter 1

### Digital Literacy



# Objectives Overview

Differentiate among laptops, tablets, and servers

Describe the purpose and uses of smartphones, digital cameras, portable media players, e-book readers, and game devices

Describe the relationship between data and information

Briefly explain various input options

Differentiate the Internet from the web, and describe the relationship among the web, webpages, websites, and web servers

Explain the purpose of a browser, a search engine, and an online social network

# Objectives Overview

Briefly describe digital security risks associated with viruses and other malware, privacy, your health, and the environment

Differentiate between an operating system and applications

Differentiate between wired and wireless technologies, and identify reasons individuals and businesses use networks

Discuss how society uses technology in education, retail, finance, entertainment, health care, travel, government, science, publishing, and manufacturing

Identify technology used by home users, small office/home office users, mobile users, power users, and enterprise users

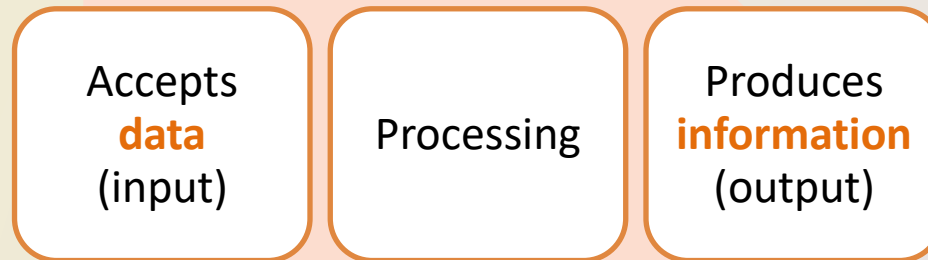
# A World of Technology

- Because technology changes, you must keep up with the changes to remain digitally literate
- **Digital literacy** involves having a current knowledge and understanding of computers, mobile devices, the Internet, and related technologies



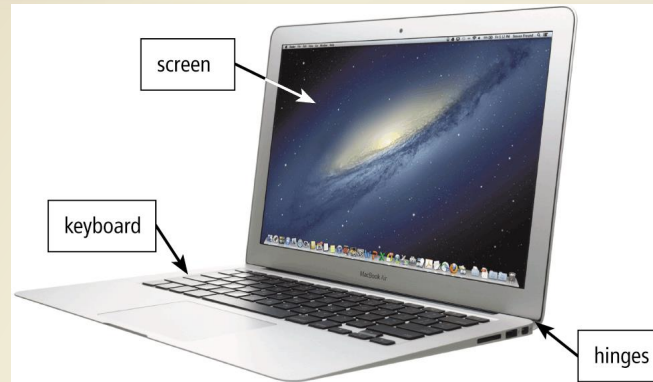
# Computers

- A **computer** is an electronic device, operating under the control of instructions stored in its own memory



# Computers

- Laptop
- Tablet
- Desktop
- Server





# Mobile and Game Devices



Smartphone



Digital camera



Portable media player

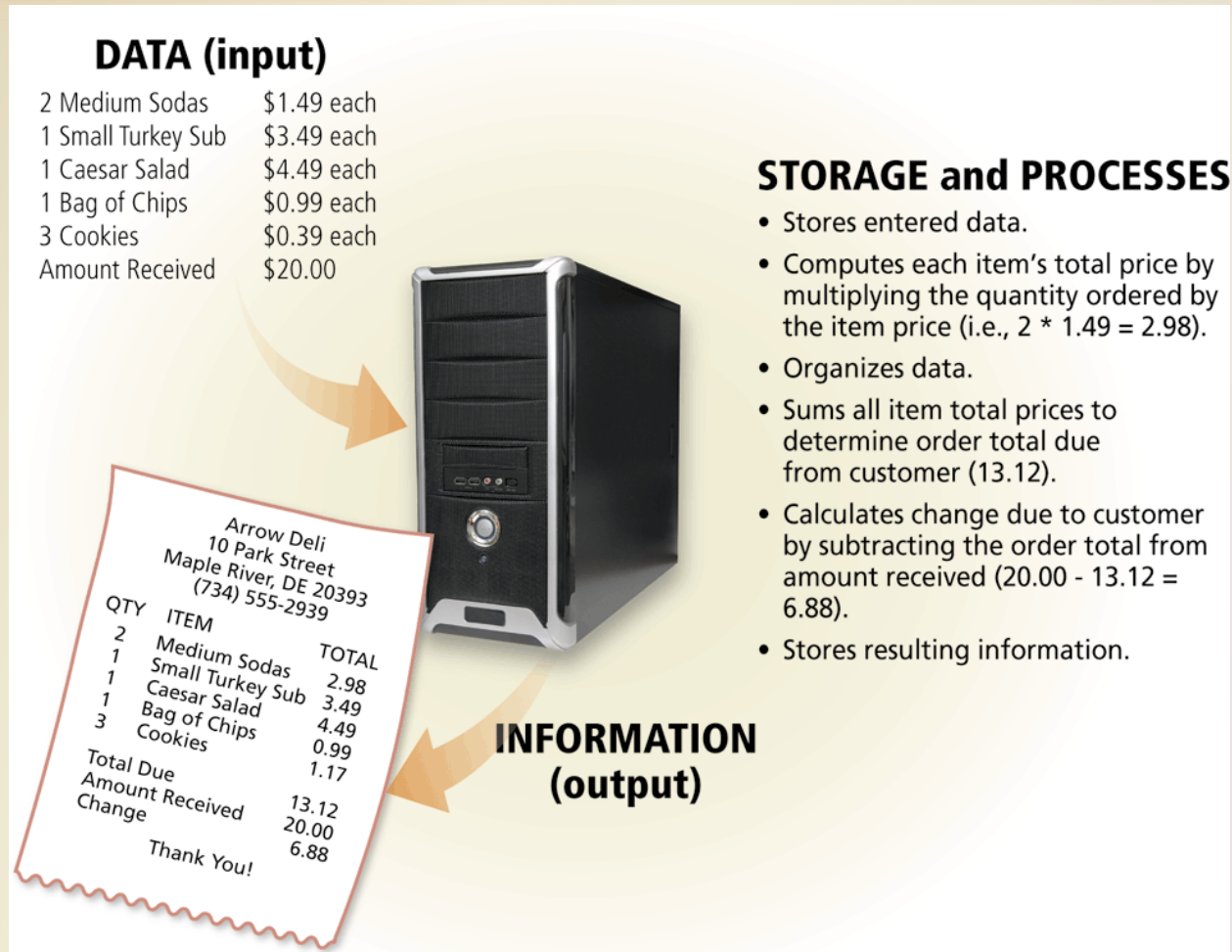


E-book reader



Game console

# Data and Information





# Data and Information



desktop keyboard



laptop keyboard



on-screen keyboard



mini keyboard

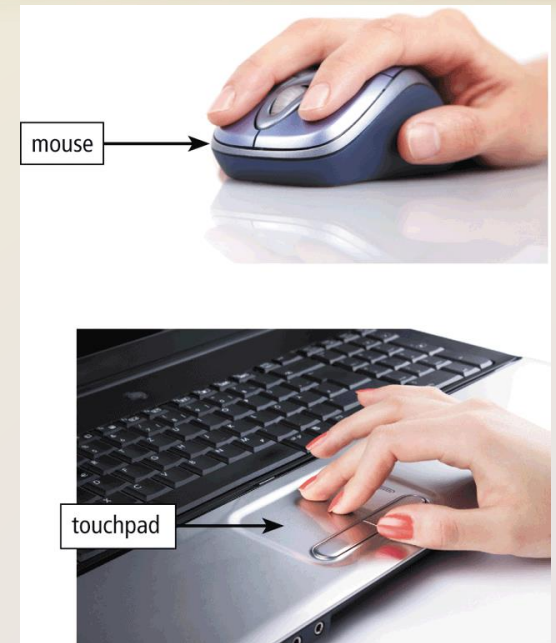


virtual keyboard

- A keyboard contains keys you press to enter data and instructions into a computer or mobile device

# Data and Information

- A pointing device is an input device that allows a user to control a small symbol on the screen called a pointer
- Some mobile devices and computers enable you to speak data instructions using voice input and to capture live full-motion images using video input



# Data and Information

- A scanner is a light-sensing input device that converts printed text and images into a form the computer can process



# Data and Information

- An **output device** is any hardware component that conveys information from a computer or mobile device to one or more people
- A **printer** is an output device that produces text and graphics on a physical medium such as paper



# Data and Information

- A display is an output device that visually conveys text, graphics, and video information





# Data and Information

- Speakers allow you to hear audio such as music, voice, and other sounds
  - Earbuds
  - Headphones





# Data and Information

Memory consists of electronic components that store instructions waiting to be executed and the data needed by those instructions

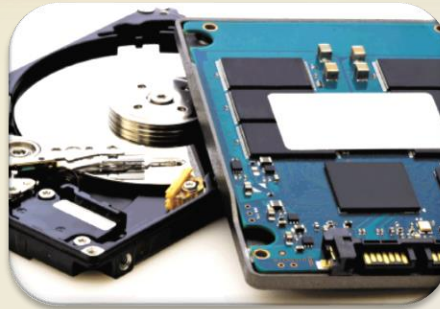
A computer keeps data, instructions, and information on a **storage media**

A **storage device** records (writes) and/or retrieves (reads) items to and from storage media

# Data and Information



Hard Disk



Solid-State  
Drive



USB Flash Drive



Memory Card



Optical Disc



Cloud Storage

# The Internet

- The **Internet** is a worldwide collection of networks that connects millions of businesses, government agencies, educational institutions, and individuals



# The Internet

The World Wide Web (or web, for short) is a global library of information available to anyone connected to the Internet

The **web** consists of a worldwide collection of electronic documents, each of which is called a **webpage**

A **website** is a collection of related webpages

A **web server** is a computer that delivers requested webpages to your computer

# The Internet

The screenshot shows the Newsradio 620 WTMJ Time Saver Traffic website. The navigation bar at the top includes links for Home, News, Weather, Sports, Traffic, What's On, Podcasts, Blogs, Events, Listener Club, Closings, Contact, and Photos. The main heading is "NEWSRADIO 620 WTMJ TIME SAVER TRAFFIC". Below this, there are social media links for Twitter (23) and Facebook (1), and a "SHARE" button. A banner for "620 WTMJ NEWSRADIO LIVE STREAM" features a "LISTEN NOW" button and the text "ON NOW: Brewers Extra Innings". The main content area is divided into two columns. The left column, titled "620 WTMJ TIMESAVER TRAFFIC", includes a "traffic.com Milwaukee Area Traffic" section with a "graphics" link pointing to a traffic map, and a "TRAFFIC LINKS" section with a "CURRENT TRAFFIC CONDITIONS" link. The right column, titled "STORM TEAM 4", includes a "Weather for: 53201" section with a "video link" pointing to a "Watch latest weather video" link, and a "7-Day Forecast" section with a "text link" pointing to an "ALERTS" link. A "pointer on a link" annotation points to the "WATCH" button in the "WATCH LATEST WEATHER VIDEO" section.

text

audio link

graphics link

graphics

pointer on a link

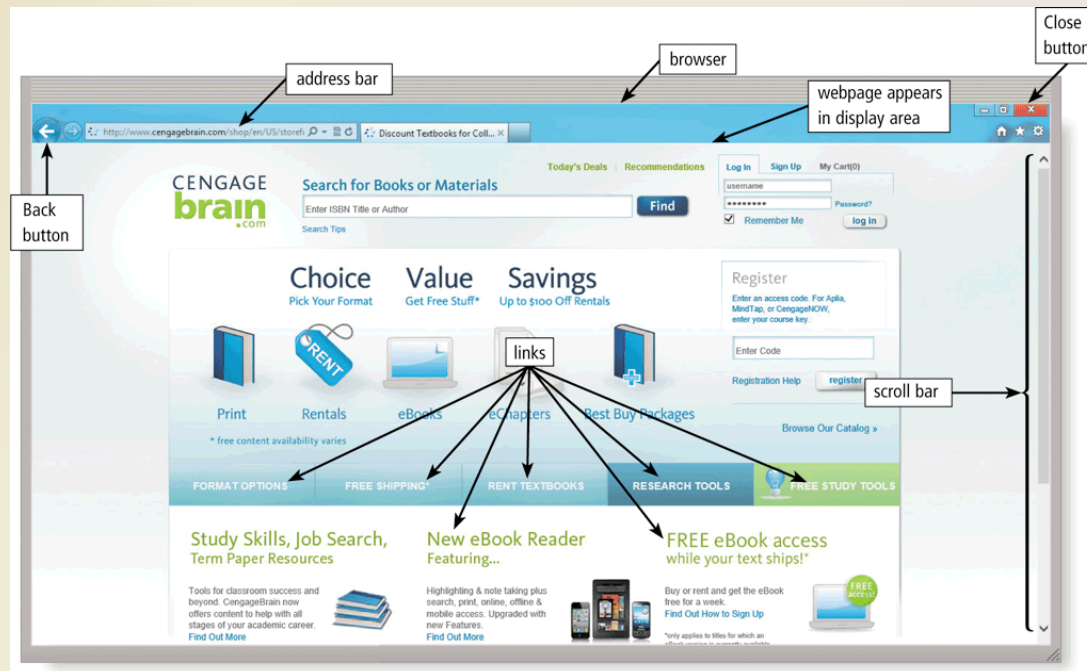
video link

text link



# The Internet

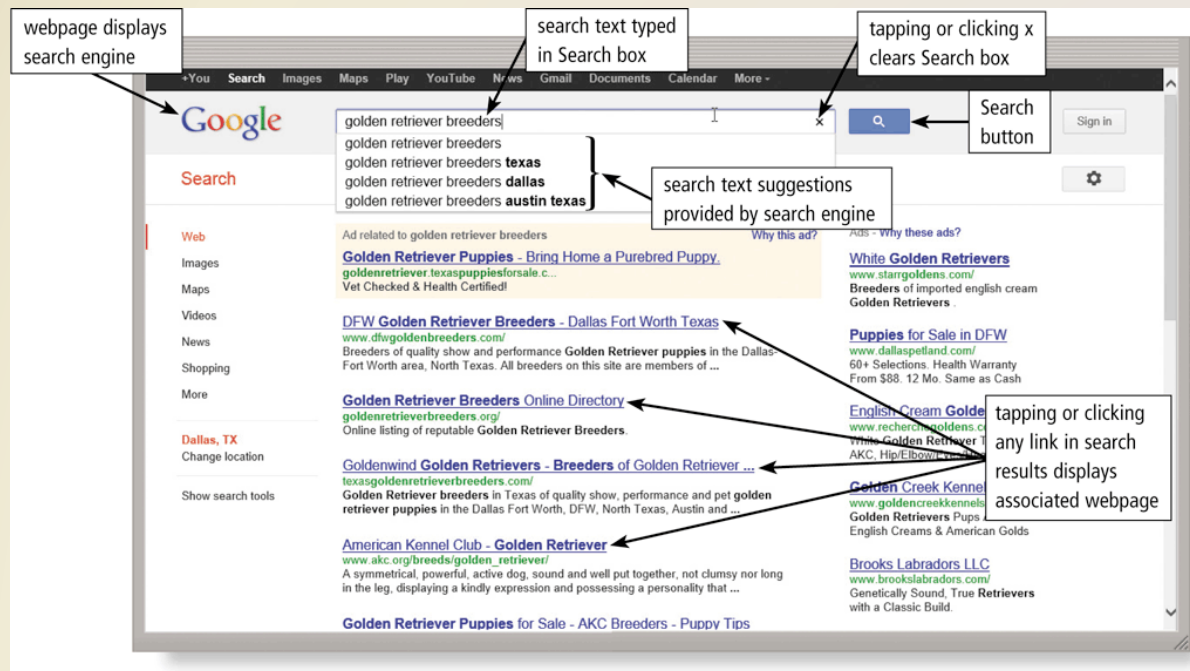
- A **browser** is software that enables users with an Internet connection to access and view webpages on a computer or mobile device





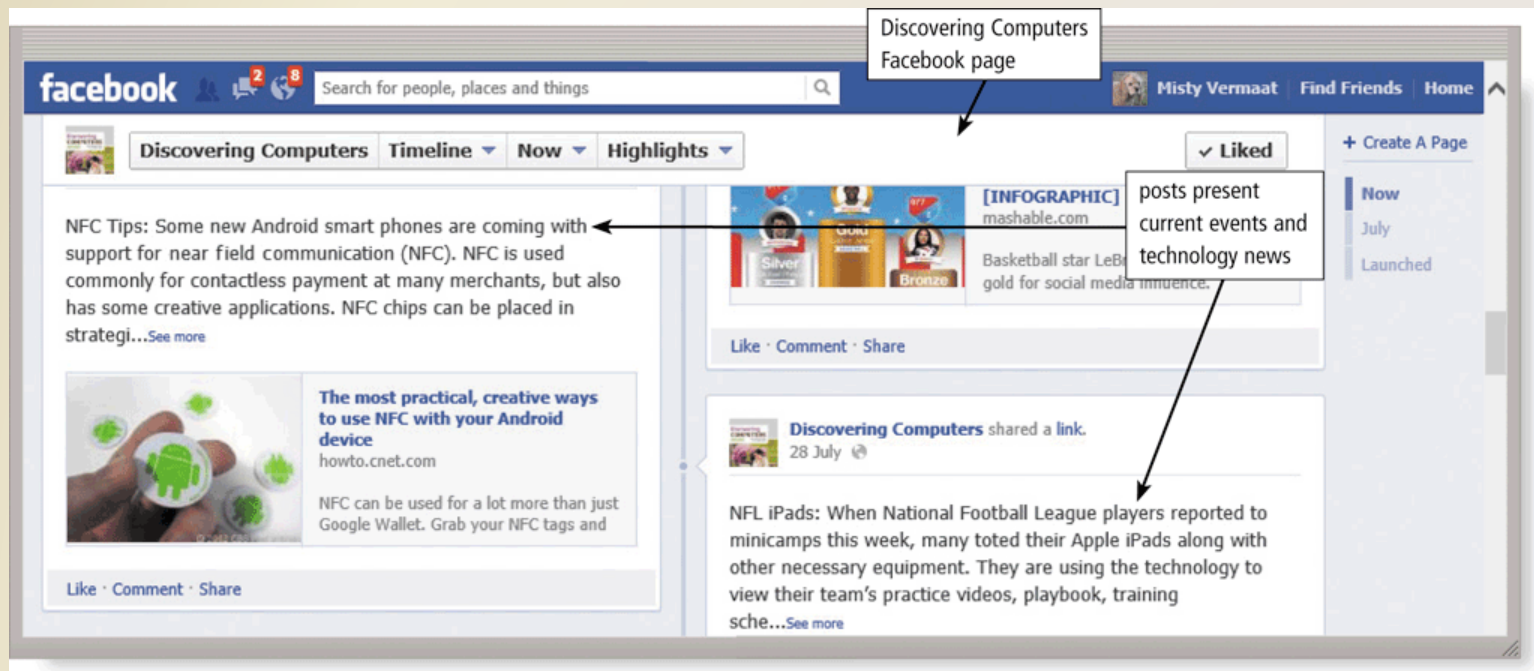
# The Internet

- A **search engine** is software that finds websites, webpages, images, videos, news, maps, and other information related to a specific topic



# The Internet

- An **online social network** encourages members to share their interests, ideas, stories, photos, music, and videos with other registered users



# Digital Safety and Security

- It is important that users protect their computers and mobile devices

Viruses and  
Other  
Malware

Privacy

Health  
Concerns

Environmental  
Issues

# Digital Safety and Security

- **Green computing** involves reducing the electricity consumed and environmental waste generated when using a computer
- Strategies include:
  - Recycling
  - Using energy efficient hardware and energy saving features
  - Regulating manufacturing processes
  - Extending the life of computers
  - Immediately donating or properly disposing of replaced computers

# Programs and Apps

- **Software**, also called a **program**, tells the computer what tasks to perform and how to perform them



## System Software

- Operating system
- Utility program



## Application Software

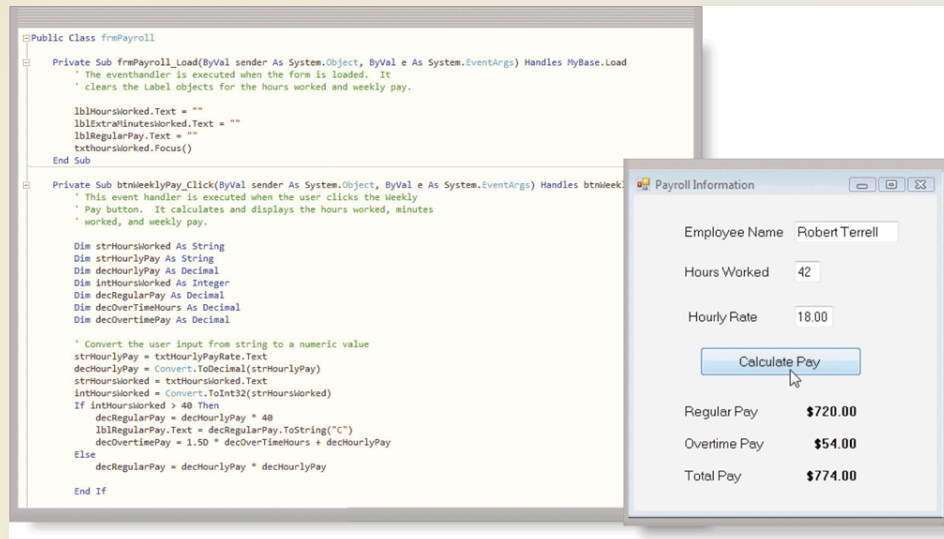
# Programs and Apps

- Installing is the process of setting up software to work with the computer, printer, and other hardware
- Once installed, you can run an application so that you can interact with it
- You interact with a program or application through its user interface



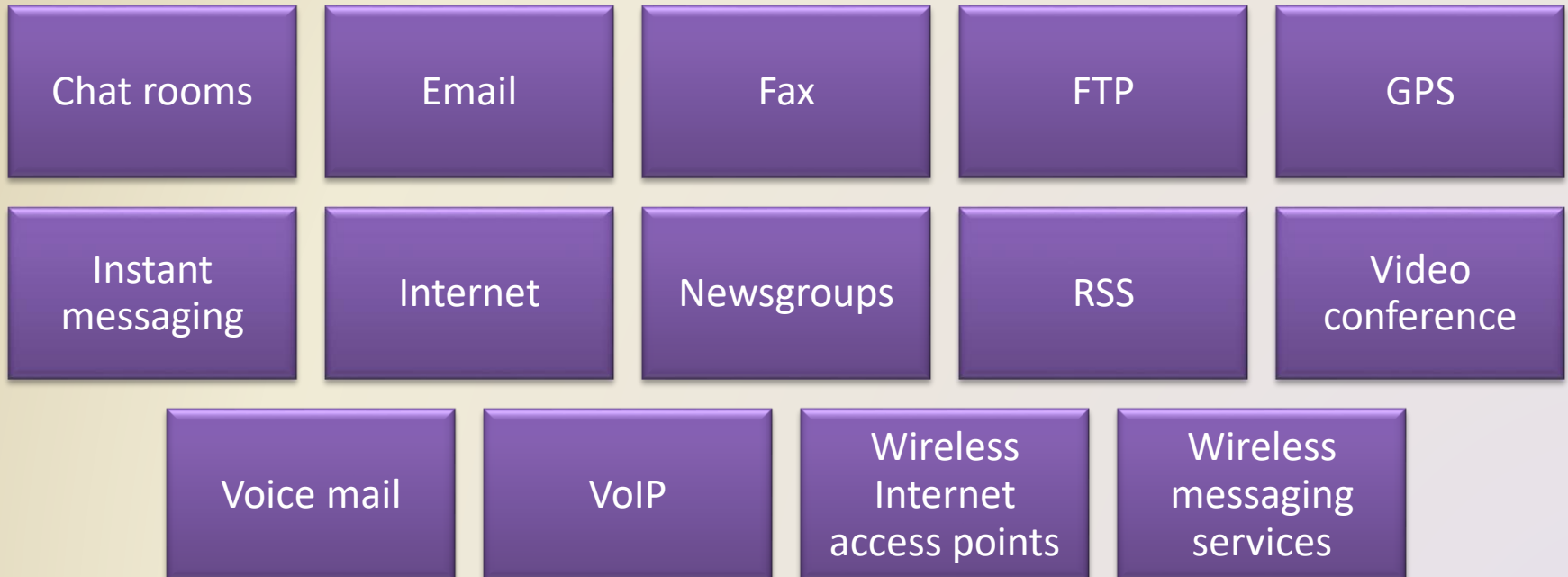
# Programs and Apps

- A software developer, sometimes called an application developer or computer programmer, is someone who develops programs and apps or writes the instructions that direct the computer or mobile device to process data into information



# Communications and Networks

- In the course of a day, it is likely you use, or use information generated by, one or more of these communications technologies



# Communications and Networks

- A **communications device** is hardware capable of transferring items from computers and devices to transmission media and vice versa



# Communications and Networks

- Examples of wireless communications technologies include:

Wi-Fi

Bluetooth

Cellular radio

# Communications and Networks

- A **network** is a collection of computers and devices connected together via communications devices and transmission media



# Communications and Networks

## Home Networks

- Connect to the Internet
- Share a single high-speed Internet connection
- Access photos, music, videos, and other content
- Share devices
- Play multiplayer games
- Connect game consoles to the Internet
- Subscribe to and use VoIP

## Business Networks

- Facilitate communications
- Share hardware
- Share data, information, and software



# Uses of Technology in Society

Education

Government

Finance

Retail

Entertainment

Health Care

Travel

Science

Publishing

Manufacturing

# Technology Users



Home User



Small/Home  
Office User



Mobile User



Power User



Enterprise User

# A BRIEF COMPUTER HISTORY

The computer as we know it today had its beginning with a 19th century English mathematics professor name Charles Babbage.

He designed the Analytical Engine and it was this design that the basic framework of the computers of today are based on.

Generally speaking, computers can be classified into three generations. Each generation lasted for a certain period of time, and each gave us either a new and improved computer or an improvement to the existing computer.

## First generation: 1937 – 1946

In 1937 the first electronic digital computer was built by Dr. John V. Atanasoff and Clifford Berry. It was called the Atanasoff-Berry Computer (ABC).

In 1943 an electronic computer name the Colossus was built for the military. Other developments continued until in 1946 the first general-purpose digital computer, the Electronic Numerical Integrator and Computer (ENIAC) was built.

It is said that this computer weighed 30 tons, and had 18,000 vacuum tubes which was used for processing. When this computer was turned on for the first time lights dim in sections of Philadelphia. Computers of this generation could only perform single task, and they had no operating system.

## Second generation: 1947 – 1962

This generation of computers used transistors instead of vacuum tubes which were more reliable.

In 1951 the first computer for commercial use was introduced to the public; the Universal Automatic Computer (UNIVAC 1).

In 1953 the International Business Machine (IBM) 650 and 700 series computers made their mark in the computer world. During this generation of computers over 100 computer programming languages were developed, computers had memory and operating systems.

Storage media such as tape and disk were in use also were printers for output.



## Third generation: 1963 - present

The invention of integrated circuit brought us the third generation of computers. With this invention computers became smaller, more powerful more reliable and they are able to run many different programs at the same time.

In 1980 Microsoft Disk Operating System (MS-Dos) was born and in 1981 IBM introduced the personal computer (PC) for home and office use. Three years later Apple gave us the Macintosh computer with its icon driven interface and the 90s gave us Windows operating system.

As a result of the various improvements to the development of the computer we have seen the computer being used in all areas of life. It is a very useful tool that will continue to experience new development as time passes.

# Chapter Summary

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Basic computer  
concepts

Various methods  
for input, output,  
memory, and  
storage

The Internet

Digital security and  
safety risks and  
precautions

Uses of technology  
applications in  
society

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## Chapter 1

### Digital Literacy

Chapter 1 Complete

