

# Computers: Tools for an Information Age

## Chapter 3

Operating Systems: Software in the Background

# Objectives

- Describe the functions of an operating system
- Explain the basics of a personal computer operating system
- Describe the advantages of a graphical operating system
- Differentiate among different versions of Microsoft Windows
- Explain the need for network operating systems

# Objectives

- Describe the methods of resource allocation on large computers
- Describe the differences among multiprocessing, multiprogramming, and time-sharing
- Explain the principles of memory management
- List several functions that are typically performed by utility programs

# Operating Systems: Hidden Software

- Serves as intermediary between hardware and applications software
- Operating System
- Systems software
- Kernel

# Operating Systems for Personal Computers

- Platform: combination of computer hardware and operating system software
  - *Wintel* (Microsoft Windows running on an Intel-based PC) is most common
- Common Platforms
  - MS-DOS
  - Windows
  - MAC OS
  - Unix
  - Linux

# Operating Systems for Networks

- Network operating system (NOS)
  - Handles network functions
  - Make resources appear as though they were running from client computers
  - Common systems

# Operating Systems for Large Computers

- Resource allocation: assigning and computer resources to certain programs and processes for their use
- Main issues related to resource allocation
  - Sharing the Central Processing Unit
  - Sharing memory
  - Sharing storage resources
  - Sharing printing resources

# Utility Programs

- Perform secondary chores
- Examples
  - File manager
  - File compression
  - Others