Input and Output

Chapter 7

Competencies (Page 1 of 2)

- Define input.
- Describe keyboard entry including the different types of keyboards and keyboard features.
- Discuss pointing devices including mice, touch screens, joysticks, and styluses.
- Describe scanning devices including optical scanners and card readers.
- Discuss image capturing devices including digital cameras and digital video cameras.

Competencies (Page 2 of 2)

- Define output.
- Discuss monitors features, flat-panel, CRT, e-book readers, data projectors, and HDTVs.
- Define printing features as well as ink-jet, laser, cloud, dot-matrix, thermal, plotter, photo, and portable printers.
- Discuss audio and video devices including portable media devices, and Mobile DTV.
- Define combination input and output devices including fax machine, multifunctional devices, and Internet telephone.
Have you ever wondered how information gets into your computer or comes out in a form you can use?

- Input devices convert what we understand into what the system unit can process.
- Output devices convert what the system unit has processed into a form that we can understand.

Any data or instructions used by a computer.

- Input devices translate data into a form that the system unit can process.
- Some hardware input devices include:
  - Keyboards
  - Mice
  - Pointing devices
  - Scanning devices
  - Image capturing devices
  - Audio-input devices

Keyboards:
- Traditional keyboards
- Ergonomic keyboards
- Wireless keyboards
- PDA keyboards
- Virtual keyboards

Features:
- Typewriter keyboard with numeric keypad
- Special purpose keys
  - Toggle
  - Combination keys
Input and Output

Traditional Keyboard

- Has keys that are hard to press
- Produces sound when keys are pressed
- Has a simple design

Pointing Devices (Page 1 of 2)

- Mice:
  - Optical
  - Mechanical
  - Wireless

- Mouse
- Trackball

- Touchpad
- Pointing stick

Pointing Devices (Page 2 of 2)

- Stylus
- Joystick

- Multitouch screen
- Touch screen
Scanning Devices (Page 1 of 2)

- Optical scanners
  - Flatbed scanners
  - Document scanners
  - Portable scanners
- Card Readers
  - Magnetic card readers
  - Radio frequency card readers

Scanning Devices (Page 2 of 2)

- Bar code readers
  - Handheld wand readers or platform scanners
  - Contain photoelectric cells that read bar codes
- Character and mark recognition devices
  - Magnetic-ink character recognition (MICR)
  - Optical-character recognition (OCR)
  - Optical-mark recognition (OMR)

Image Capturing Devices

- Digital cameras
  - Images recorded digitally on disk or in camera’s memory
  - Images can be downloaded to a computer
- Digital video cameras
  - Records motion digitally, can also take still images
- WebsCams
  - Specialized digital video cameras built-in or attached to the monitor
Making IT Work for You
WebCams and Instant Messaging

- Exchange messages and files with friends
- Voice and video capabilities
- Application sharing

Audio-Input Devices

- Voice recognition systems
  - Use a microphone, sound card, and special software
  - Users can operate computers and create documents using voice commands

What is Output?

- Processed data or information
- Types of output
  - Text
  - Graphics/photos
  - Audio & video
- Output devices
  - Monitors
  - Printers
  - Audio-output devices
Monitors (Page 1 of 3)

- Known as screens or display screens
- Output referred to as soft copy
- Features
  - Resolution/pixels
  - Dot pitch
  - Refresh rate
  - Size
  - Aspect ratio

Monitors (Page 2 of 3)

- Flat-panel monitors
  - Require less power to operate
  - Portable and thinner than CRTs
  - Liquid Crystal Display (LCD)
  - Active matrix/thin film transistor (TFT)
  - Passive matrix/dual-scan
  - Organic light-emitting diode (OLED)
- Cathode-ray tube (CRT) monitors

Monitors (Page 3 of 3)

- Other monitors
  - E-Book readers
  - Digital/interactive whiteboards
  - High-definition television (HDTV)
Enjoy reading on the go
- Many feature subscriptions to newspapers and magazines

- Translates information that has been processed by the system unit
- Output referred to as hard copy

- Resolution
- Color
- Speed
- Memory
- Duplex printing

- Ink-jet printers
- Laser printers
  - Personal or shared
- Other printers
  - Cloud printers
  - Dot-matrix printers
  - Thermal printers
  - Plotters
  - Photo printers
  - Portable printers
Audio and Video Devices

- Translates audio information from the computer into sounds that people can understand
  - Speakers and headsets
  - Portable media players/digital media players
    - Apple iPod, Creative Zen, Microsoft Zune
    - Mobile digital television (Mobile DTV)

Combination Input and Output Devices

- Fax machines
- Multifunctional devices (MFD)
- Internet telephones
  - Known as Internet telephony and IP telephony
  - Voice-over IP (VoIP)
    - Ooma
    - Vonage
    - MagicJack
    - Skype

Careers in IT

- Technical writers prepare instruction manuals, technical reports, and other scientific or technical documents
- Typically requires a college degree
  - Communications
  - Journalism
  - English
  - Specialization or familiarization with a technical field
- Technical writers can expect to earn $46,500 to $76,500 annually
A Look to the Future
Electronic Translators May Be in Your Future

- Electronic interpretation may soon exist to provide personal interpretation for foreign languages and images.
- Prototype portable handheld electronic interpreters are currently in a testing phase at the U.S. Office of Naval Research.

Open-Ended Questions (Page 1 of 2)

- Define input and input devices.
- Describe the different types of keyboard, pointing, scanning, image capturing, and audio-input devices.
- Describe output and output devices.
- Describe the features and different types of monitors and printers.

Open-Ended Questions (Page 2 of 2)

- Describe audio and video devices including portable media devices and Mobile DTV.
- What are combination input and output devices? Discuss some examples.
- What are Internet telephone phones? List and discuss four Internet telephone service providers.