Infomation Technology Essentials

COMP106

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Chapter 4

Installing and Configuring Peripheral Components

Objectives

◆ In this session, you will learn to:

- ◆ Install and configure display devices.
- ◆ Install and configure input devices.
- ◆ Install and configure adapter cards.
- ◆ Install multimedia devices.

Install and Configure Display Devices

◆ In order to install and configure display devices, you would need to:

- ◆ Identify various types of display devices
- ◆ Identify various display settings
- ◆ Identify LCD characteristics
- ◆ Identify different types of connectors
- ◆ Configure the device driver

Display Devices Types

◆ The following are some common display devices:

- CRT monitor
- LCD monitor
- Projection system

Display Settings

◆ The following are some display characteristics for each video output device, which you can configure either through a dialog box in Windows, or through controls on the physical monitor.

   ◆ Resolution

   ◆ Refresh rate (The refresh rate is how often per second the image is rebuilt)

   ◆ Color depth/color quality

   ◆ Brightness (Intensity of the image)

   ◆ Contrast (Ratio of light to dark)

   ◆ Image position (Vertical and horizontal location of image on the screen)

   ◆ Reset (Returns the monitor settings to factory settings)

LCD Characteristics

- The following are some unique characteristics of LCD devices:

  - Screen type (Active or Passive Matrix)
  - Resolution
  - Contrast ratio
  - Backlighting
  - Pixelation

Connector Types

◆ The following are some of the connector types used by display devices:
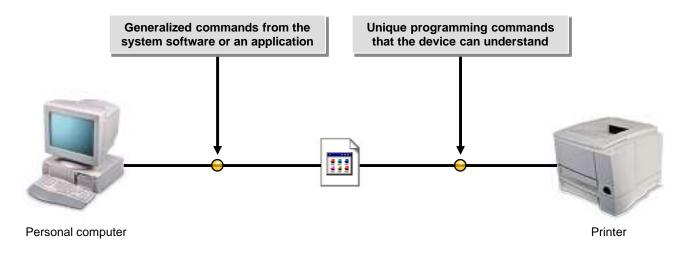
VGA

DVI

HDMi

Component/RGB

S-Video

Composite video

Device Drivers

◆ A **device driver** is a type of software that enables the operating system and a peripheral device to communicate with each other.

Generalized commands from the system software or an application

Unique programming commands that the device can understand

Personal computer

Printer

Display Device Selection Tips

◆ CRT monitors offer more features and potentially better resolution.

◆ CRT monitors are also less expensive than flat-panel monitors.

◆ Many users simply prefer flat-panel monitors because they take up less space.

Display Device Installation Considerations

◆ When you're ready to install a display device, keep the following considerations in mind:

   ◆ Drivers

   ◆ Digital Video Interfaces

   ◆ Video Adapters

Activity 4-1

Activity on Installing Display Devices

Activity 4-2

Activity on Configuring Display Devices

Standard Input Device Types

◆ The following are some common input devices which fall under mice and keyboards:

Ergonomic keyboard

Standard keyboard

Dvorak keyboard

Mouse

Trackball

Touch pad

Biometric Input Devices

◆ *Biometrics* is an automated method of recognizing a person based on a physiological or behavioral characteristic.

Specialized Input Devices

◆ The following are some specialized input devices that you might encounter in your workplace:

- ◆ Bar code readers
- ◆ Touch screens

Input Device Selection Tips

- For keyboards, consider ergonomics and additional features such as wireless connectivity.

- For pointing devices, consider optical mice, wireless mice, and user preference.

Input Device Installation Considerations

◆ You should consider following factors before attempting to install input devices:

  ◆ Drivers

  ◆ Ports

  ◆ Manufacturer's instructions

Activity 4-3

Activity on Installing Input Devices

Activity 4-4

Activity on Configuring Input Devices

Internal Bus Architectures

◆ System boards include several buses, or data paths, to transfer data to and from different computer components, including all adapter cards. The various internal bus architectures are:

- ◆ 8-bit (legacy)

- ◆ ISA (Industry Standard Architecture)

- ◆ PCI (Peripheral Components Interconnect)

- ◆ AGP (Accelerated Graphics Port)

- ◆ PCI-E (Peripheral Components Interconnect-Express)

- ◆ AMR (Audio Modem Riser)

- ◆ CNR (Communication and Networking Riser)

Adapter Card Types

◆ The following figure lists the various adapter card types:

Adapter Card Type	Description
Video adapters	A video adapter provides the interface necessary to connect a monitor for visual output. Generally, these adapters connect to the system board through PCI, AGP, or PCI-E slots.
Multimedia adapters	Multimedia adapters provide the interfaces necessary to connect microphones, speakers, electronic musical devices, and some gaming devices for audio input and output.
Input/output adapters	Input/output adapters provide the interfaces necessary to connect SCSI, serial, USB, and parallel devices for data input and output.
Network adapters	Network adapters provide the interface necessary for network communications.
Modem adapters	Modem adapters provide the interface necessary for remote communications over phone or data lines.

Adapter Card Selection Tips

- ◆ Verify that its bus type is compatible with the computer.

- ◆ Make sure that the adapter card's drivers are compatible with the computer's operating system.

- ◆ Use PnP to automatically configure the card's hardware resources, but make sure that the computer's BIOS and operating system supports PnP.

Adapter Card Installation Considerations

◆ You should consider the following before installing adapter cards.

- ◆ Available slot
- ◆ Latest drivers
- ◆ Unplug the computer and discharge electricity

Adapter Card Configuration and Optimization Requirements

◆ Some of the requirements while configuring adapter card are:

  ◆ Plug and Play support in the system should automatically detect the adapter card

  ◆ If, not get the driver for the adapter card from the manufacturer

  ◆ Use Add Hardware Wizard to manually select the adapter card from the device list

Hardware Resources

◆ The following are the various categories of hardware resources:

- ◆ Interrupt Request (IRQ) lines
- ◆ I/O address
- ◆ Direct Memory Access (DMA)
- ◆ Base memory address

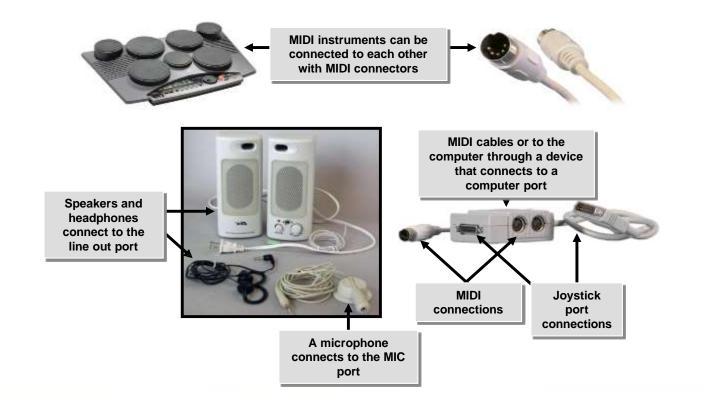# Activity 4-5

Activity on Identifying System Parameters
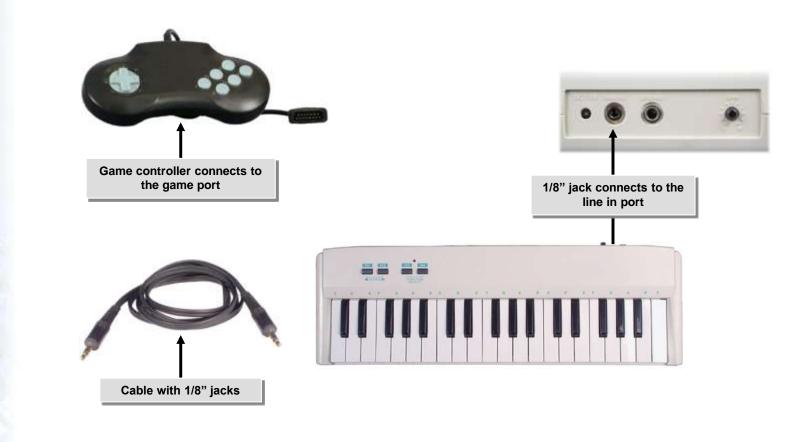
Activity 4-6

Activity on Installing Adapter Cards

Multimedia Devices

◆ A *multimedia device* is a computer peripheral or internal component that transfers sound or images to or from a personal computer.

MIDI instruments can be connected to each other with MIDI connectors

MIDI cables or to the computer through a device that connects to a computer port

Speakers and headphones connect to the line out port

MIDI connections

Joystick port connections

A microphone connects to the MIC port

Multimedia Devices (Contd.)

Game controller connects to the game port

1/8" jack connects to the line in port

Cable with 1/8" jacks

Common Multimedia Devices

◆ Some of the common multimedia devices are:

- ◆ Digital cameras
- ◆ Webcams
- ◆ Video-conferencing systems
- ◆ MIDI devices
- ◆ Microphones
- ◆ Speakers

Multimedia Device Selection Tips

- Digital Camera: What type of output does the user need from the camera?

- Sound Cards: Responsible for translating digital music into analog signals.

- Microphones: Use microphones to complete tasks such as making phone calls via the internet and to dictate to the computer using voice recognition software.

- Speakers: If users plan to listen to music or play games on a computer, it's important to help them select higher-quality speakers.

Multimedia Device Installation Considerations

◆ Some of the considerations that need to be taken while installing multimedia devices are:

- ◆ Is there a slot available on the motherboard for installing a sound card?

- ◆ Are the appropriate device drivers available for the computers operating system?

- ◆ Are the necessary cables to connect multimedia devices available?

- ◆ Do you have a memory card reader available?

Multimedia Device Configuration and Optimization Requirements

◆ The following can be configured using the Device Manager for multimedia devices:

- Enabling and disabling audio features
- Updating drivers
- Specifying hardware resources

Activity 4-7

Activity on Installing Multimedia Devices

Summary

- In this session, you learned that:
    - The prerequisites for installing and configuring the display devices are:
        - Identification of various types of display devices
        - Identification of various display settings
        - Identification of LCD characteristics
        - Identification of different types of connectors
        - Configuring the device driver
    - The prerequisites for installing different input devices are:
        - Drivers
        - Ports
        - Manufacturer's instructions
    - The adapter cards are used to extend the capabilities of a computer.
    - Video adapter, multimedia adapter, Input/output adapter, network adapter and modem adapter as some of the types of adapter cards.

Summary (Contd.)

◆ A multimedia device is a computer peripheral or internal component that transfers sound or images to or from a personal computer.

◆ Some of the common multimedia devices are:

- ◆ Digital cameras
- ◆ Webcams
- ◆ Video-conferencing systems
- ◆ MIDI devices
- ◆ Microphones
- ◆ Speakers