

# **CHAPTER 7**

# **MAKING MULTIMEDIA**



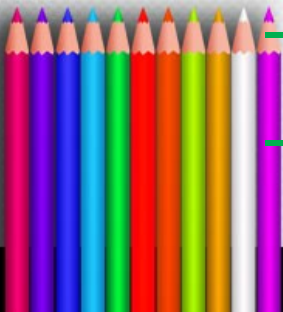
# Making Multimedia

- Introduction to Making Multimedia
  - Guidance and suggestions for getting started
- Multimedia Skills
  - What skills required



# Introduction to Making Multimedia

- The stages of a project:
  - Planning and costing
    - Idea/objectives
    - Multimedia expertise required
    - Structure & navigation system
    - Time & cost estimation
  - Designing & producing
  - Testing
  - Delivering



# Introduction to Making Multimedia

- What we need?
  - Hardware
  - Software
  - Good ideas
  - Talent
  - Skill
  - Good organization of works





# Introduction to Making Multimedia

- **Creativity:**
  - Develop a sense of its scope and content
  - Difficult to learn creativity
    - “but like classical artists who work in paint, marble, or bronze, the better you know your medium, the better able you are to express your creativity”
    - Know your hardware & software first!!



# Introduction to Making Multimedia

- **Organization**
  - Develop an organized outline a a plan that rationally details the skills, time, budget, tools, and resources we will need for a project



# Introduction to Making Multimedia

- **Hardware**

- 2 most significance platforms:

- Macintosh OS

- Intel-based IBM PC or PC Clone (MS Windows)

- Development environment

- Powerful workstation (Silicon Graphics, Sun Microsystems, or mainframe)

- Apple (Macintosh OS) more suitable for multimedia editing

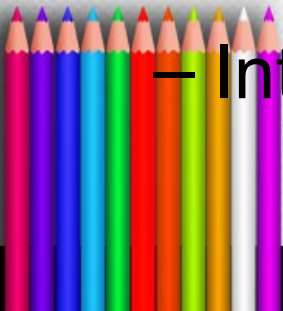
- Cross platform format (both Mac & Windows)



# Introduction to Making Multimedia

- **Networking**

- A collection of computers and other hardware components interconnected by communication channels that allow sharing of resources and information.
- LAN and WAN
- Cable and Wireless
  - Ethernet, Fiber Optics, WIFI, Bluetooth n etc
- Internet Service Provider





# Introduction to Making Multimedia

- The various connection methodologies include:
  - Small Computer System Interface (SCSI).
  - Integrated Drive Electronics (IDE).
  - Universal Serial Bus (USB).
  - FireWire
  - SATA
  - IDE
  - Fiber Channel
  - Serial and Parallel Port
  - Types of connections and transfer rate (refer to table 7-2 page 203).



# Small Computer System Interface (SCSI)

- SCSI can connect internal and external peripheral equipments and devices that conform to the SCSI standard.
- SCSI cards can be installed on Macintosh and PC platforms.
- SCSI is preferred for real-time video editing, network servers, and situations that require mirroring.
- SCSI ID conflicts should be avoided by providing unique IDs to devices.





Meridien Card

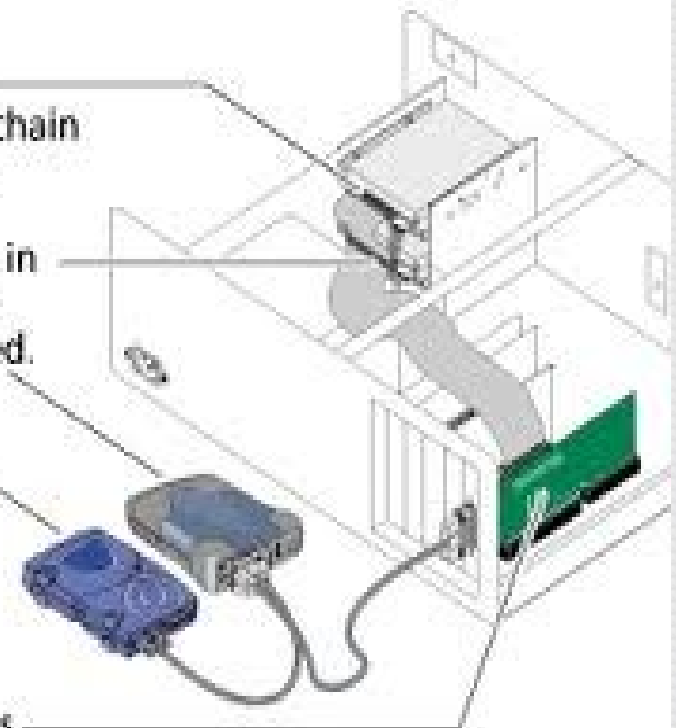
SCSI Card

Last drive in internal SCSI chain is terminated.

Middle drives in SCSI chain are not terminated.

Last drive in external SCSI chain is terminated.

SCSI adapter is not terminated.



# Integrated Drive Electronics (IDE)

- IDE connections are also known as Advanced Technology Attachment (ATA).
- They **connect only internal peripherals**.
- They **can connect four peripherals mounted inside the PC**.
- The circuitry for IDE is less expensive than SCSI.
- IDE utilizes processor chip time.





# Universal Serial Bus (USB)

- It is a standard for connecting devices to the computer using the **plug-and-play system**.
- USB uses a single cable to connect 127 USB peripherals to a single PC.
- It can be attached to one computer at a time.



# FireWire

- FireWire was introduced by Apple in the 1980s.
- It is the industry standard and provides support for high-bandwidth serial data transfer, particularly for digital video and mass storage.
- Can connect multiple computers and peripheral devices (peer-to-peer).
- It is the most common method for connecting and interconnecting professional digital video equipment.



# Memory

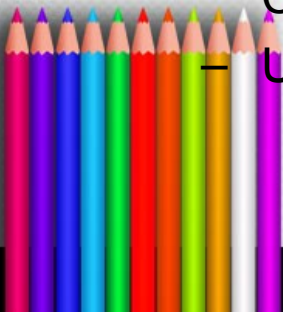
- Sufficient memory must be allocated for storing and archiving files.
- Memory requirements of a multimedia project depend on the project's content and scope.
- The two types of memory are random access memory (RAM) and read only memory (ROM).
- Storage Device : Hard Disk, Flash Memory, CD-ROM, DVD and Blue Ray.





# Input Devices

- Allow user enter DATA and COMMANDS into memory.
- Example: keyboard, mouse, camera, microphone and etc.
- Four forms of input:
  - Data
  - Program
  - Commands
  - User responses





# Input Devices

- **Keyboard** - Is the most commonly used input device. The most common keyboard for PCs is the 101 style, which provides 101 keys.
- **Mouse** - Is the standard input device for a graphical user interface (GUI).



# Input Devices

- **Trackball** - It is suitable to small confined environments such as a portable laptop.
- **Touchscreen** - They are monitors that usually have a textured coating across the glass face.



# Input Devices

- **Magnetic card encoder and reader** - Is useful when an interface is needed for a database application or multimedia project that tracks users.
- **Graphic tablet** - Provides great control for editing finely detailed graphic elements.
- **Scanner** - Is the most useful device for producing multimedia. They are categorized as flat-bed, handheld, and drum.



# Input Devices

- **Optical Character Recognition (OCR) device** - Is used to convert printed matter into ASCII text files.



- **Infrared remote** - Is used to interact with the project when the user needs to move about.





# Input Devices

- **Voice recognition system** - Is used to facilitate hands-free interaction with the project.
- **Digital camera** - Is used to capture still images of a specific resolution, and store them in camera's memory. These images can then be uploaded to a computer.



# Output Devices

- Convey information to one or more people.
- **4** forms of output:
  - Text
  - Graphics
  - Audio
  - Video



# Output Devices

## Audio devices:

- They include **sound chips and microphones**.
- Amplifiers are required when the project has to be presented to a large audience or in a noisy setting.
- Speakers can be internal or external.



# Output Devices

## Video devices:

- Video creates the maximum visual impact.
- Video devices include videodisc players and video cards.
- Videodisc players provide precise control over the image being viewed.
- Video cards enable the user to place an image in a window on the computer monitor.





# Output Devices

## Projectors:

- Projectors are used when you have a larger audience that can be accommodated around a computer monitor.
- The different types of projectors include
  - Cathode-Ray Tube (CRT)
  - Liquid-Crystal Display (LCD) panels
  - Stand-Alone LCD projectors
  - Light-Valve projectors.



# Output Devices

## Projectors (continued):

- CRT projectors are compatible with the output of most computers as well as televisions.
- LCD panels are portable devices that are popular for on-the-road presentations.
- Light-valve projectors use liquid crystal technology. The images generated are very bright and color saturated and can be projected onto wide screens.



# Output Devices

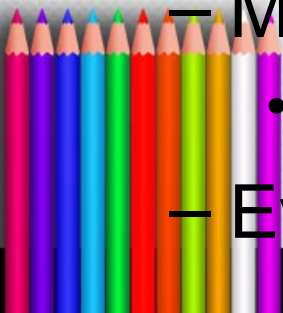
## Printers:

- The **2** types of printers:-
- **Laser printers** offer higher print quality, lower operating costs, but a higher initial cost.
- **Inkjet printers** are comparatively cheaper, but require higher maintenance.
- Color printers have become an important part of multimedia development.



# Memory and Storage Device

- **Software:**
  - Multimedia software tells the hardware what to do
  - Text, images, sounds, and video.
    - Capturing images, translating between file formats, and editing your resources
    - Photoshop, SoundForge, Premiere, GIF Animator, etc.
  - Multimedia authoring
    - Macromedia Director or flash
  - Everybody can make multimedia project!!





# Types of Software

- Text-based editing tools.
- Graphical tools.
- Sound editing tools.
- Animation, video, and digital movie tools.
- Video formats.
- Utilities useful for multimedia.



# Introduction

- Software, also called a program, is a series of instructions that tells the computer what to do and how to do it.
- Users interact with the program through its GRAPHICAL USER INTERFACE (GUI) which contains an object called ICON (can be as text, graphics or visual images).

ICONS

The screenshot shows a Microsoft PowerPoint window titled 'Microsoft PowerPoint - [chapt 02]'. The main slide is titled '5. Communication Devices' and contains two bullet points: 'A communications devices is a hardware component that enables a computer to send (transmit) and retrieve data, instructions and information to and from one or more computers.' and 'Main device is **MODEM**.' Below the text is a diagram illustrating the process of data transmission. It shows a computer connected to a modem, which then connects to a radio link. The radio link is shown as a signal being transmitted through the air to another computer. Below the radio link, there are three diagrams of different types of cables: a coaxial cable with labels 'GLASS COATING', 'GLASS CORE', 'OUTER INSULATION', and 'METAL CORE'; a twisted pair cable with labels 'OUTER INSULATION' and 'METAL CORE'; and a fiber optic cable with labels 'GLASS COATING', 'GLASS CORE', 'OUTER INSULATION', and 'METAL CORE'. The diagram also includes labels for 'BITS GO TO MODEM', 'MODEM CHANGES BITS TO SOUND SIGNAL', and 'RADIO LINK The sound signal is transmitted on a radio carrier wave in the same way as AM or FM broadcasting.' The PowerPoint interface includes a menu bar (File, Edit, View, Insert, Format, Tools, Slide Show, FlashPaper, Window, Help), a toolbar, and a slide navigation pane on the left showing slides 35 through 40. The status bar at the bottom indicates 'Slide 38 of 49', 'Radial', and 'English (U.S.)'.

# Introduction (Cont.)

- Two categories of software:
  - System Software
  - Application Software

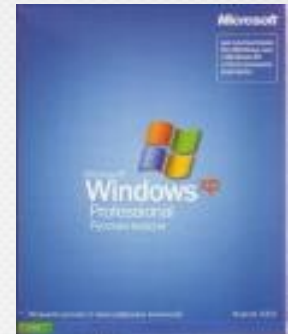




# Introduction (Cont.)

## 1. System Software

- Consists of the programs that control or maintain the operations of the computers and its devices.
- **2** types of system software
  - **Operating System**
    - Windows XP
  - **Utility Programs**
    - Disk defragmenter, Anti virus, Scan Disk

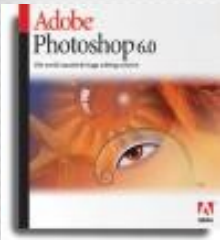
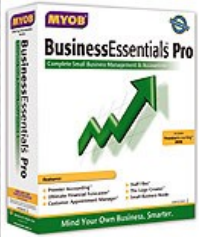




# Introduction (Cont.)

## 2. Application Software

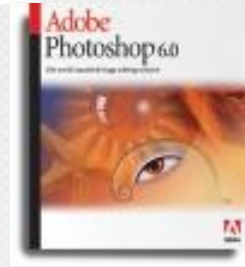
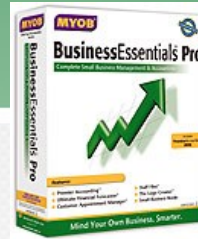
- Consists of programs that perform specific task for user. Application software is used for a variety of reasons:
  - As business tool
  - To assist with graphics and multimedia projects
  - To support home, personal and educational activities
  - To facilitate communications



# Introduction (Cont.)

- **Business Software**

- Accounting
- Stock



- **Graphic and Multimedia Software**

- Photo Editing
- Authoring tools
- Movie Players



- **Home, Personal and Education Software**

- Courseware



- **Communication Software**

- Yahoo Messenger MSN Messenger, ICQ, MIRC

- **Web Application**

- Maybank2u, Web based E-mail



# Text-based Editing Tools

## Word processors:

- Are powerful applications that include spell checkers, table formatters, thesaurus, and pre-built templates for commonly used documents.
- Are used for creating project letters, invoices, and storyboards.
- Allow embedded multimedia elements.



# Text-based Editing Tools

## Word processors (continued):

- Microsoft Word and WordPerfect are Word processors.
- Often come bundled in an "Office Suite."





# Text-based Editing Tools

## Optical Character Recognition (OCR) software:

- Converts bitmapped characters into electronically recognizable ASCII text.
- Makes use of probability and expert system algorithms.
- Is very accurate and saves time and effort.



# Graphical Tools

- Painting and drawing tools.
- 3-D modeling tools.
- Image editing tools.



# Painting and Drawing Tools

- Most graphic programs use bitmapped images since they provide the greatest choice.
- Include the Eyedropper tool, Autotrace tool, and anti-aliasing, airbrushing, blending, and masking functionalities.
- PhotoShop, Fireworks, and Painter are painting software.
- CorelDraw, FreeHand, and Illustrator are drawing software.



# Painting and Drawing Tools

## Features include:

- An intuitive graphical user interface.
- Scalable dimensions.
- Multiple undo capability.
- Scalable text font support.
- Support for third-party special effect plug-ins.
- Layering capability.





# 3-D Modeling Tools

Features include (continued):

- Good color and palette management.
- Multiple dimension windows and unlimited cameras.
- Lathe and extrude features.
- Ability to drag and drop primitive shapes, sculpt organic objects.
- Color and texture mapping.



# Image-Editing Tools

- Are specialized and powerful tools for enhancing and retouching existing bitmapped images.
- Features include conversion of image-data types and file formats, masking features, employment of virtual memory scheme, etc.
- Support third-party plug-ins.



# Sound Editing Tools

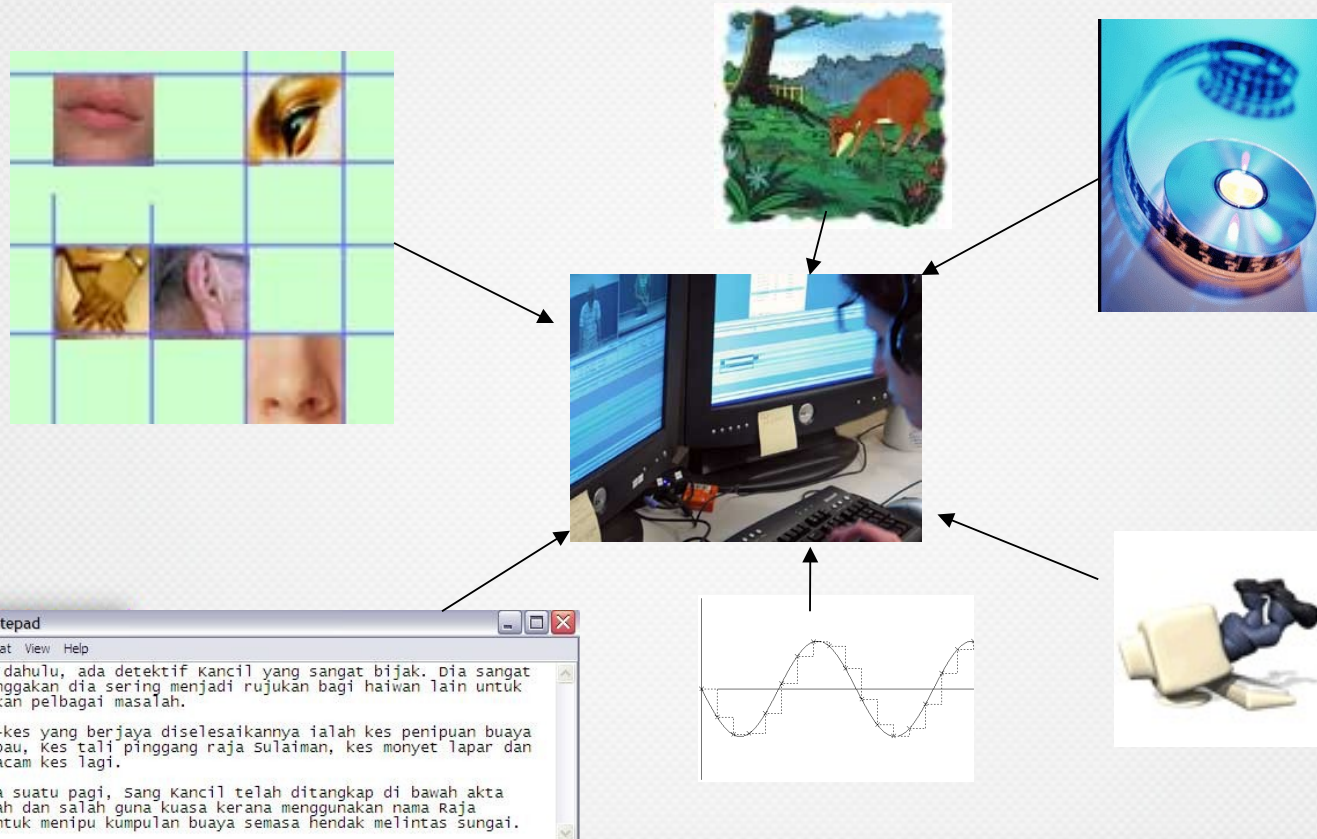
- Enables the user to see music as well as hear sound.
- This is done by drawing a representation of sound in fine increments.
- Enable the user to create custom system beeps.
- System beeps are pre-packaged sounds that indicate an error, warning or special user activity.





# What is an Authoring Tools

- The tools by which various media components are brought together (integrated) into a structure and flow.





# Authoring Tools

