

Memory and Storage Devices

Digital Versatile Discs (DVD)

In December 1995, nine major electronics companies (Toshiba, Matsushita, Sony, Philips, Time Warner, Pioneer, JVC, Hitachi, and Mitsubishi Electric) agreed to promote a new optical disc technology for distribution of multimedia and feature-length movies called Digital Versatile Disc (DVD). With a DVD capable not only of gigabyte storage capacity but also full-motion video (MPEG2) and high-quality audio in surround sound, this is an excellent medium for delivery of multimedia projects. Commercial multimedia projects will become more expensive to produce, however, as consumers' performance expectations rise. There are three types of DVD, including DVD-Read Write, DVD-Video, and DVD-ROM.

Blu-ray Discs

Driven by the implementation of High Definition TV (HDTV) and by the motion picture industry, a new technology was needed to increase storage capacity and throughput beyond DVD. Two competing and incompatible solutions were promoted and a war was fought in the marketplace between HD-DVD, backed by Toshiba, and Blu-ray, backed by Sony. By 2008, Toshiba had sold about one million HD-DVD players, but Sony had sold close to ten million Blu-ray players, which were also included in popular PlayStation game machines. Blu-ray is promoted not only for high definition television recording and high definition video distribution, but also for high definition camcorder archiving, mass data storage, and digital asset management and professional storage when used as a recording medium in BD-R format.

Input Devices

A great variety of input devices—from the familiar keyboard and handy mouse to touchscreens and voice recognition setups—can be used for the development and delivery of a multimedia project. The input device to use depends on the application it is designed for. If you are designing your project for a public kiosk, use a touchscreen. If your project is for a lecturing professor who likes to wander about the classroom, use a remote handheld mouse. If you create a great deal of original computer-rendered art, consider a pressure-sensitive stylus and a drawing tablet. Scanners enable you to use optical character recognition (OCR) software, such as OmniPage from ScanSoft or Recore from Maxsoft-Ocron. With OCR software and a scanner, you can convert paper documents into a word processing document on your computer without retyping or rekeying.

Barcode readers are probably the most familiar optical character recognition devices in use today—mostly at markets, shops, and other point of purchase locations. Using photo cells and laser beams, barcode readers recognize the numeric characters of the Universal Product Code (UPC) that are printed in a pattern of parallel black bars on merchandise labels. With OCR, or barcoding, retailers can efficiently process goods in and out of their stores and maintain better inventory control. An OCR terminal can be of use to a multimedia developer because it recognizes not only printed characters but also handwriting. This facility may be beneficial at a kiosk or in a general education environment where user friendliness is a goal, because there is growing demand for a more personal and less technical interface to data and information.

Voice Recognition systems are used for hands-free interaction in a project. These behavioral biometric systems usually provide a unidirectional cardioid, noise-canceling microphone that automatically filters out background noise and learns to recognize voiceprints. Most voice recognition systems currently available can trigger common menu events such as Save, Open, Quit, and Print, and you can teach the system to recognize other commands that are more specific to your application. Systems available for the Macintosh and Windows environments typically must be taught to recognize individual voices and then be programmed with the appropriate responses to the recognized word or phrase. Dragon's Naturally Speaking takes dictation, translates text to speech, and does command-to-click, a serious aid for people unable to use their hands. The quality of your audio recordings is greatly affected by the caliber of your microphone and cables. A unidirectional microphone helps filter out external noise, and good cables help reduce noise emitted from surrounding electronic equipment.

Digital cameras are used to capture still images of a given number of pixels (resolution), and the images are stored in the camera's memory to be uploaded later to a computer. It uses CCD technology same as video cameras. The resolution of a digital camera is determined by the number of pixels on the CCD chip, and the higher the megapixel rating, the higher the resolution of the camera. Images are uploaded from the camera's memory using a serial, parallel, or USB cable, or, alternatively, the camera's memory card is inserted into a PCMCIA reader connected to the computer. Digital cameras are small enough to fit in a cell phone, and in a more complicated manner they can be used in a television studio or spy camera on an orbiting spacecraft.

NOTE: The study material (as per the guideline) is compiled from your prescribed textbook Multimedia: Making it Work (ninth edition) by Tay Vaughan.