

Chapter Six

Output

Discovering Computers 2012

**Your Interactive Guide
to the Digital World**



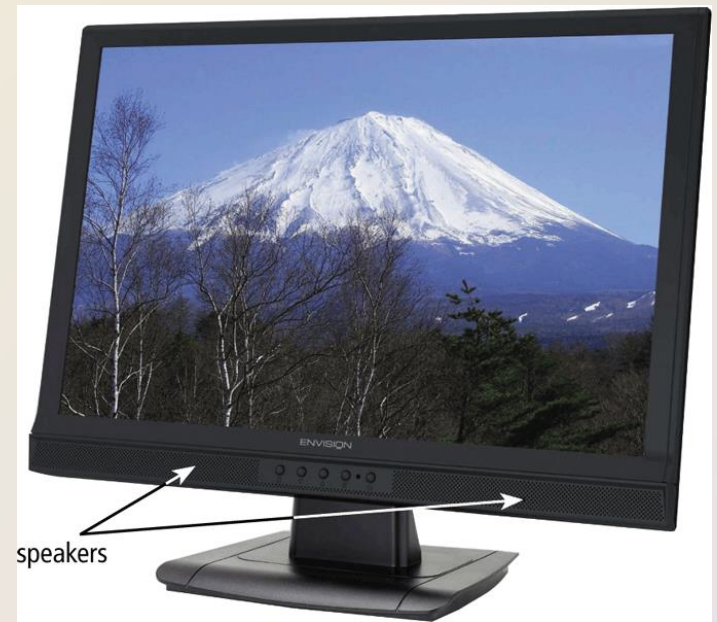
What Is Output?

- **Output** is data that has been processed into a useful form



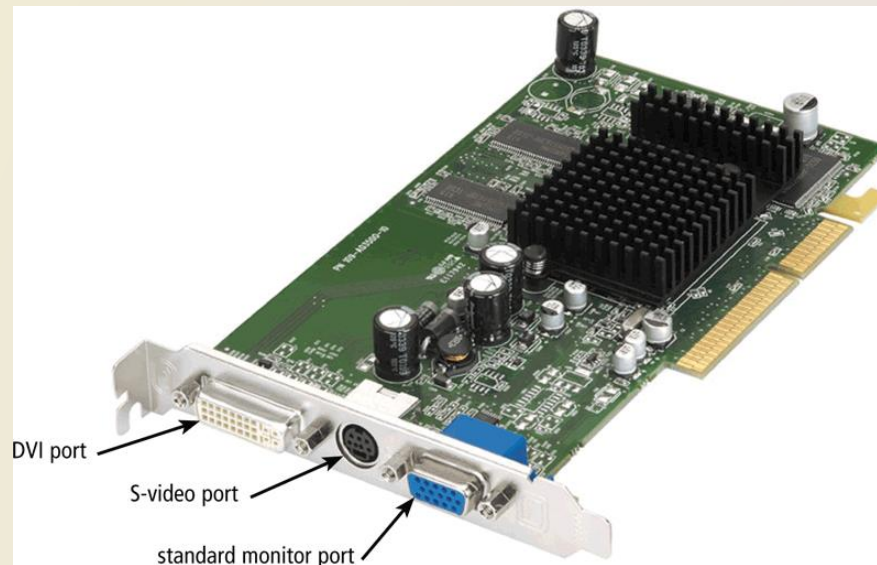
Display Devices

- A **display device** visually conveys text, graphics, and video information



Display Devices

- The **graphics processing unit (GPU)** controls the manipulation and display of graphics on a display device
- LCD monitors use a digital signal and should plug into a DVI port, an HDMI port, or a DisplayPort



Display Devices

- **Plasma monitors** are display devices that *use gas plasma* technology and offer screen sizes up to 150 inches
- Thin & light



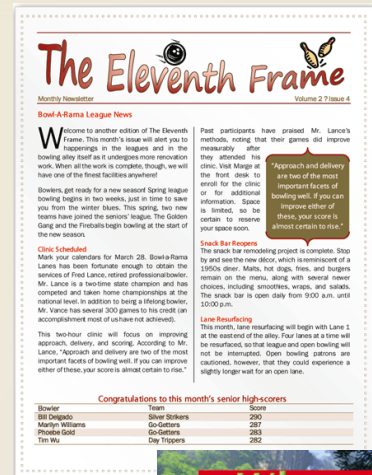
Display Devices

- A **CRT monitor** is a desktop monitor that contains a cathode-ray tube
 - Have a much larger footprint than LCD monitors
 - Not good for health



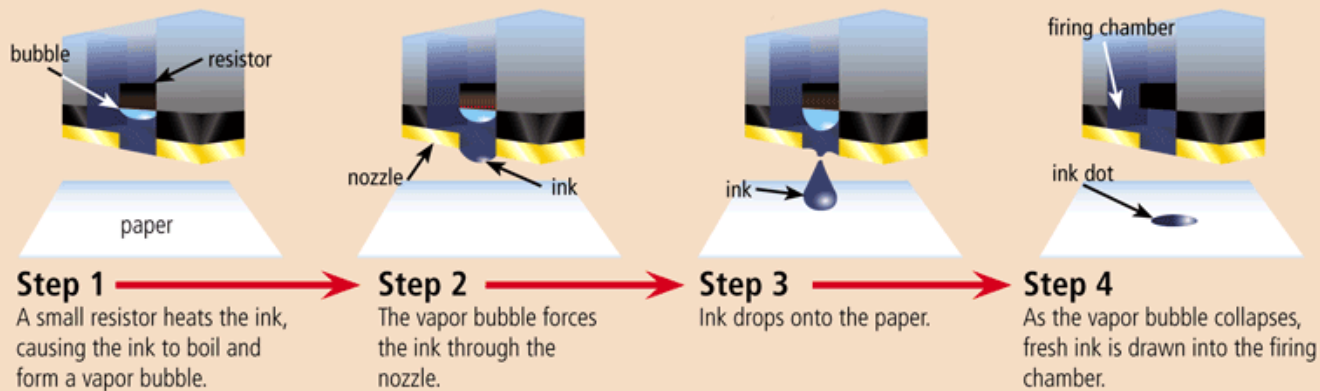
Printers

- A **printer** produces text and graphics on a physical medium
 - Printed information is called a *hard copy*, or *printout*
 - Landscape or portrait *orientation*

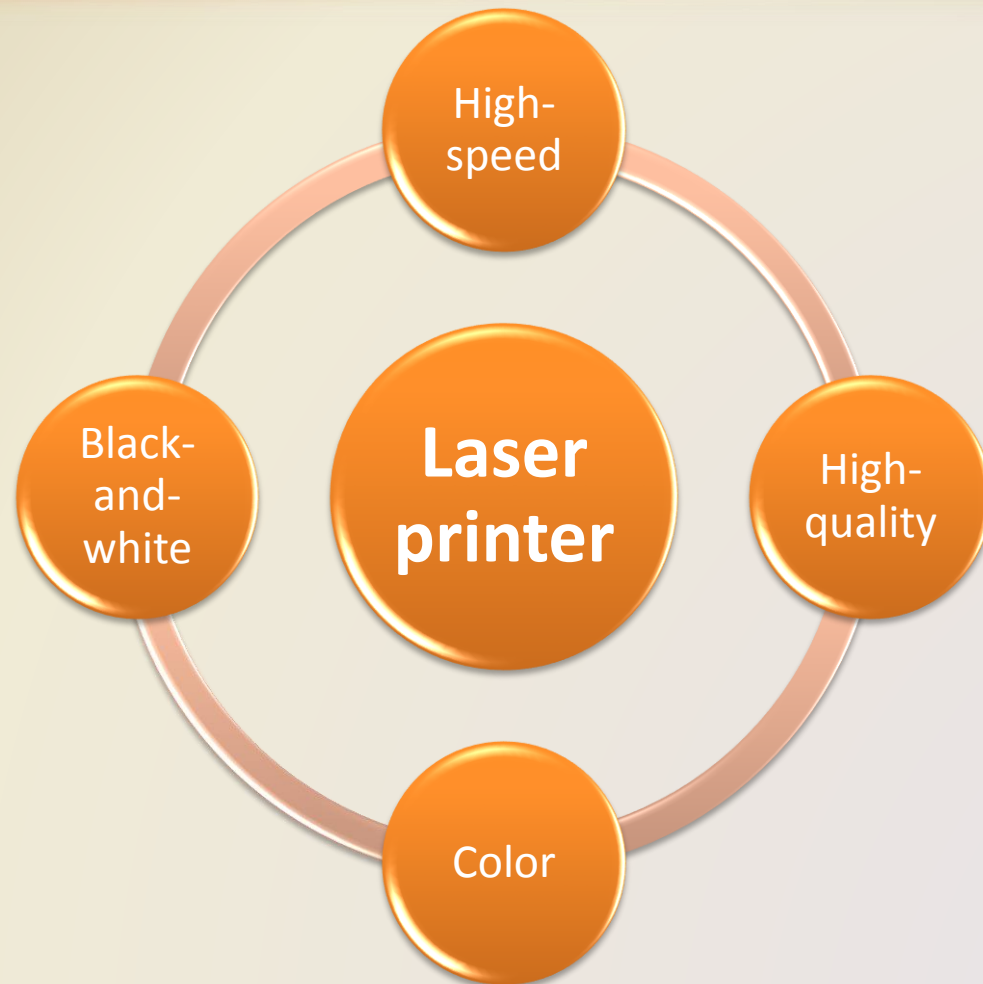


Printers

How an Ink-Jet Printer Works

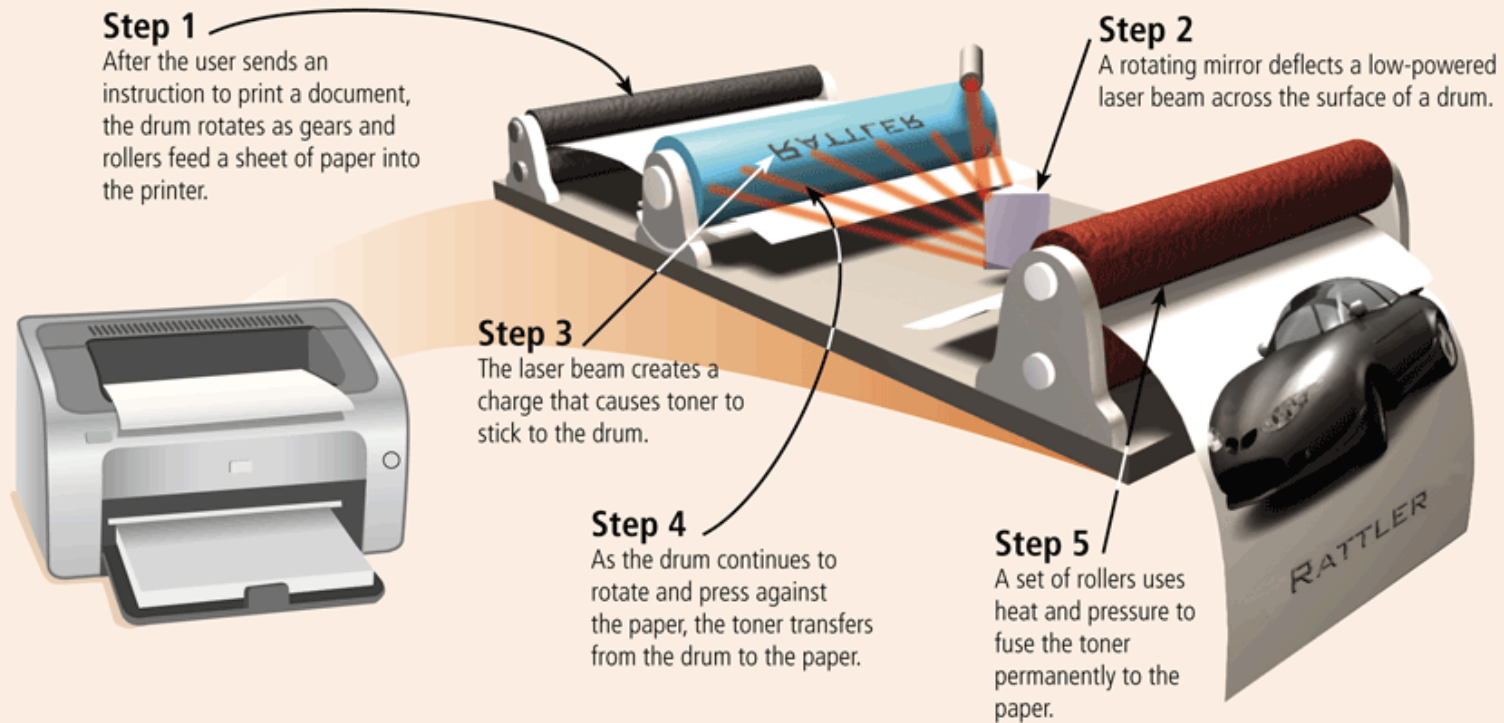


Printers



Printers

How a Black-and-White Laser Printer Works



Printers

- A **thermal printer** generates images by pushing electrically heated pins against the heat-sensitive paper

Thermal wax-transfer
printer

Dye-sublimation printer



Printers

- A **mobile printer** is a small, lightweight, battery-powered printer that allows a mobile user to print from a notebook computer, smart phone, or other mobile device



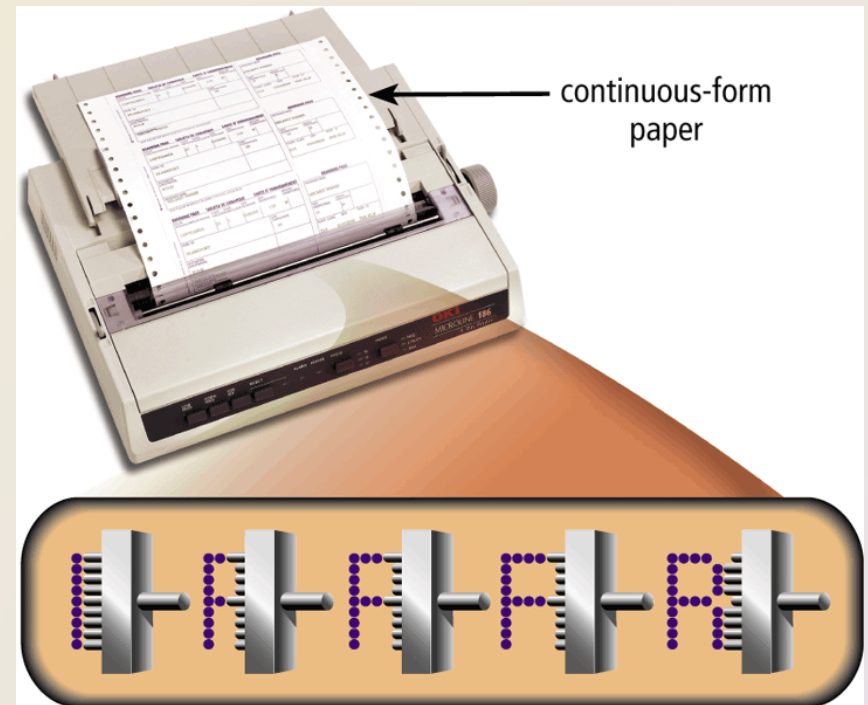
Printers

- **Plotters** are used to produce high-quality drawings
- **Large-format printers** create photo-realistic quality color prints on a larger scale



Printers

- A **dot-matrix printer** produces printed images when tiny wire pins on a print head mechanism strike an inked ribbon
- A **line printer** prints an entire line at a time



Speakers, Headphones, and Earbuds

- An **audio output device** produces music, speech, or other sounds



Most computer users attach **speakers** to their computers to:

- Generate higher-quality sounds for playing games
- Interact with multimedia presentations
- Listen to music
- View movies

Speakers, Headphones, and Earbuds

- **Headphones** are speakers that cover or are placed outside of the ear
- **Earbuds** (also called earphones) rest inside the ear canal



Other Output Devices

- A **data projector** is a device that takes the text and images displaying on a computer screen and projects them on a larger screen
 - LCD projector
 - Digital light processing (DLP) projector



Other Output Devices

- An **interactive whiteboard** is a touch-sensitive device, resembling a dry-erase board, that displays the image on a connected computer screen



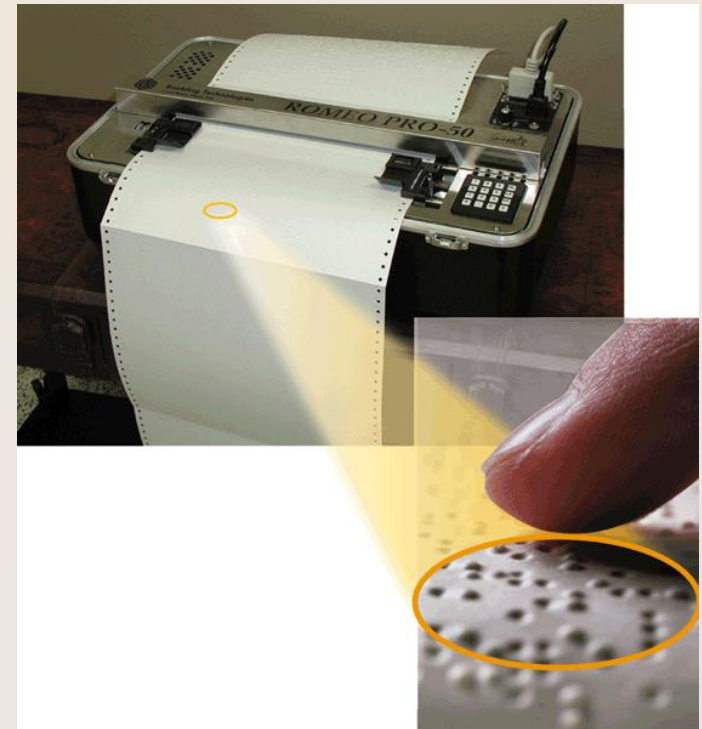
Other Output Devices

- **Force-feedback** sends *resistance* to the device in response to actions of the user
- **Tactile output** provides the user with a physical response from the device



Output Devices for Physically Challenged Users

- Many accessibility options exist for users with various disabilities



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