


Chapter Five


Input

Discovering Computers 2012
Your Interactive Guide to the Digital World



What Is Input?

- Input** is any data and instructions entered into the memory of a computer



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Figure 5-1

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What Is Input?

- Instructions can be entered into the computer in the form of programs, commands, and user responses

A program is a series of related instructions that tells a computer what tasks to perform and how to perform them

Programs respond to commands that a user issues

A user response is an instruction a user issues by replying to a question displayed by a program

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What Are Input Devices

An **input device** is any hardware component that allows users to enter data and instructions into a computer

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The Keyboard

- A **keyboard** is an input device that contains keys users press to enter data and instructions into a computer

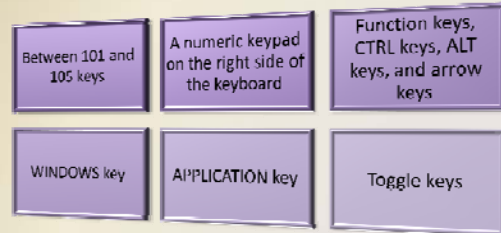


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Figure 5-2

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The Keyboard

- Most desktop computer keyboards have...



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The Keyboard

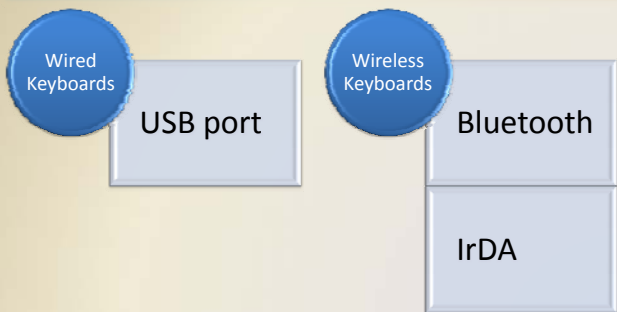
- The **insertion point**, also known as the cursor, is a symbol on the screen that indicates where the next character you type will appear



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Figure 5-3

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The Keyboard



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The Keyboard

- An ergonomic keyboard has a design that reduces the chance of wrist and hand injuries
- **Ergonomics** incorporates comfort, efficiency, and safety into the design of the workplace



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Figure 5-4

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The Keyboard

- Keyboards on mobile devices typically are smaller and/or have fewer keys
- Some phones have predictive text input, which saves time when entering text using the phone's keypad



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Figure 5-5

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Pointing Devices

A **pointing device** is an input device that allows a user to control a pointer on the screen.

A **pointer** is a small symbol on the screen whose location and shape change as a user moves a pointing device.

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Mouse

- A **mouse** is a pointing device that fits under the palm of your hand comfortably
 - Most widely used pointing device on desktop computers
- A mouse can be wired or wireless




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Figures 5-6 and 5-7

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Other Pointing Devices




Trackball

- A **trackball** is a stationary pointing device with a ball on its top or side



Touchpad

- A **touchpad** is a small, flat, rectangular pointing device that is sensitive to pressure and motion



Pointing Stick

- A **pointing stick** is a pressure-sensitive pointing device shaped like a pencil eraser that is positioned between keys on a keyboard

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Figures 5-9 – 5-11

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Touch Screens and Touch-Sensitive Pads

- A **touch screen** is a touch-sensitive display device







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Figures 5-12 – 5-13


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Pen Input

- With **pen input**, you touch a **stylus** or **digital pen** on a flat surface to write, draw, or make selections



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Figure 5-16

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Game Controllers

- Video games and computer games use a **game controller** as the input device that directs movements and actions of on-screen objects

Gamepads

Joysticks and
Wheels

Light guns

Dance pads

Motion-
sensing
controllers

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Digital Cameras

- A **digital camera** is a mobile device that allows users to take pictures and store them digitally

Studio cameras

Field cameras

Point-and-shoot camera

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Digital Cameras

- Two factors affect the quality of digital camera photos:

Resolution

- Resolution** is the number of horizontal and vertical pixels in a display device
- A pixel is the smallest element in an electronic display

Number of bits stored in each pixel

- Each pixel consists of one or more bits of data
- The more bits used to represent a pixel, the more colors and shades of gray that can be represented

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Voice Input

- Voice input** is the process of entering input by speaking into a microphone
- Voice recognition** is the computer's capability of distinguishing spoken words

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Figure 5-22

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Voice Input

- Audio input** is the process of entering any sound into the computer

Speech

Music

Sound Effects

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Voice Input

- Music production software allows users to record, compose, mix, and edit music and sounds



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Figure 5-23

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Video Input

- **Video input** is the process of capturing full-motion images and storing them on a computer's storage medium

Record video on a **digital video (DV) camera** or use a video capture card to convert analog signals to digital

Connect the camera to a port on the system unit

Transfer video and images

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Video Input

- A **Web cam** is a type of digital video camera that enables a user to:

Capture video and still images

Send e-mail messages with video attachments

Add live images to instant messages

Broadcast live images over the Internet

Make video telephone calls



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Video Input

- A **video conference** is a meeting between two or more geographically separated people








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Figures 5-25 - 5-26

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Scanners and Reading Devices

-  Flatbed
-  Pen or Handheld
-  Sheet-fed
-  Drum

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Figure 5-27

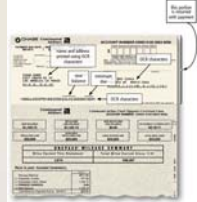
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Scanners and Reading Devices

- **Optical character recognition (OCR)** involves reading characters from ordinary documents
- A **turnaround document** is a document you return to the company that creates and sends it

ABCDEFGHIJKLM
 NOPQRSTUVWXYZ
 1234567890
 - = ! ; ' , . /




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Figures 5-29 – 5-30

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Scanners and Reading Devices

- **Optical mark recognition (OMR)** reads hand-drawn marks such as small circles or rectangles
- An OMR device scans the documents and matches the patterns of light




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Figure 5-31

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Scanners and Reading Devices

- A **bar code reader**, also called a **bar code scanner** uses laser beams to read **bar codes**



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Figure 5-32

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Scanners and Reading Devices

- **RFID** (radio frequency identification) uses radio signals to communicate with a tag placed in or attached to an object
- An **RFID reader** reads information on the tag via radio waves
- RFID can track:
 - Tracking times of runners in a marathon
 - Tracking location of soldiers
 - Employee wardrobes
 - Airline baggage
 - Checking lift tickets of skiers
 - Managing inventory
 - Gauging pressure and temperature of tires
 - Checking out library books
 - Tracking toll payments

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Scanners and Reading Devices


- **Magnetic stripe card readers** read the magnetic stripe on the back of cards such as:
 - Credit cards
 - Entertainment cards
 - Bank cards
 - Other similar cards



Page 281 Discovering Computers 2012: Chapter 5 Figure 5-34 30

Scanners and Reading Devices


- **MICR** (magnetic ink character recognition) devices read text printed with magnetized ink
- An **MICR reader** converts MICR characters into a form the computer can process
- Banking industry uses MICR for check processing



Page 281 Discovering Computers 2012: Chapter 5 Figure 5-35 31

Scanners and Reading Devices

- Data collection devices obtain data directly at the location where the transaction or event takes place
- Used in:
 - Restaurants
 - Grocery stores
 - Factories
 - Warehouses
 - The outdoors



Page 282 Discovering Computers 2012: Chapter 5 Figure 5-36 32

Biometric Input




- Biometrics authenticates a person's identity by verifying a personal characteristic

Fingerprint reader	Face recognition system	Hand geometry system
Voice verification system	Signature verification system	Iris recognition system
Retinal scanners		

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Terminals

- A terminal is a computer that allows users to send data to and/or receive information from a host computer

		
A POS terminal records purchases, processes payment, and updates inventory	An automated teller machine (ATM) allows users to access their bank accounts	A DVD kiosk is a self-service DVD rental machine

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Input Devices for Physically Challenged Users

- Several input devices are available to assist physically challenged users:

Keyguard	Keyboards with larger keys	On-screen keyboard	Various pointing devices
Head-mounted pointer	Gesture recognition	Computerized implant devices	

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Input Devices for Physically Challenged Users

<p>Keyboard with larger keys</p> 	<p>Head-mounted pointer</p> 
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Chapter Five

Input

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Chapter 5 Complete

A photograph showing a man with dreadlocks and a woman with blonde hair looking at a smartphone together. The man is wearing an orange shirt and a dark beanie, and the woman is smiling. They are both looking at the screen of the phone which the man is holding.