SECONDARY 4

INPUT AND OUTPUT DEVICES

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INPUT DEVICES & USES

- It is part of external hardware components used to enter data and control signals into computer.
- It includes keyboards, mouse, scanners, camera, microphones, and etc.

KEYBOARDS

- Most common method used for data entry. Used as the input device on computers, tablets, mobile phones and many other electronic items.
- Input data to any application
- Typing in commands to computer (like Prnt Scrn, Ctrl+P to print out, and so on)

Next Page

NUMERIC KEYPADS

- It is used to enter numbers only (although some have a function key to allow alphabetic characters to be input).

USES

Automatic Teller Machines (ATMs)

- Where the customer can key in their PIN, amount of money, etc.

Point of Sale Terminals (POS)

- In case the barcode reader fails to read the barcode - the number has to be keyed in manually by the operator.


Pay
Grand Total
15.00

POINTING DEVICES

- It is used to enter numbers only (although some have a function key to allow alphabetic characters to be input).

Mouse

- The user control the position of a pointer on the screen by moving the mouse around

Optical Mouse

- It is a computer pointing device that uses a light-emitting diode (LED) and a photodetector to detect movement relative to a surface. Unlike traditional mechanical mice, which rely on a rolling ball to track motion, optical mice employ an optical sensor to capture images of the surface at a high rate of speed.

Optical Mouse

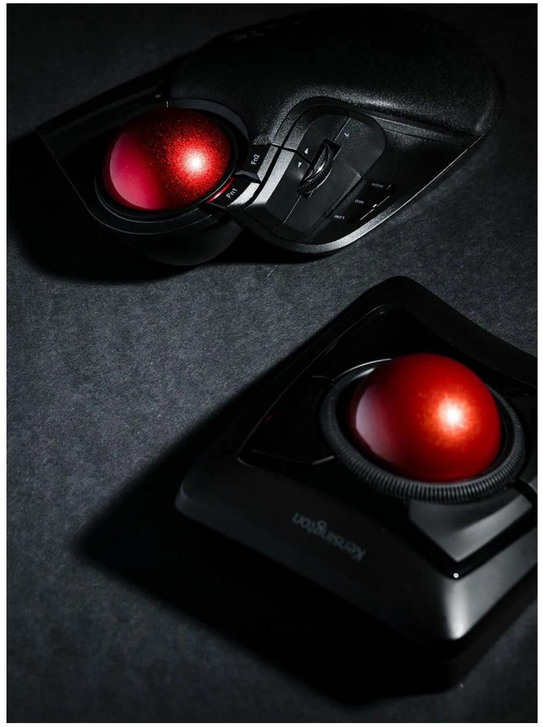
Touchpad

- a touch-sensitive interface commonly integrated into laptops and some keyboards, serving as a primary pointing device. It allows users to control the cursor and interact with the computer screen by detecting the position and movement of their fingers on its surface.

Touchpad

Trackerballs

- a pointing device that consists of a stationary base housing a large, freely rotating ball.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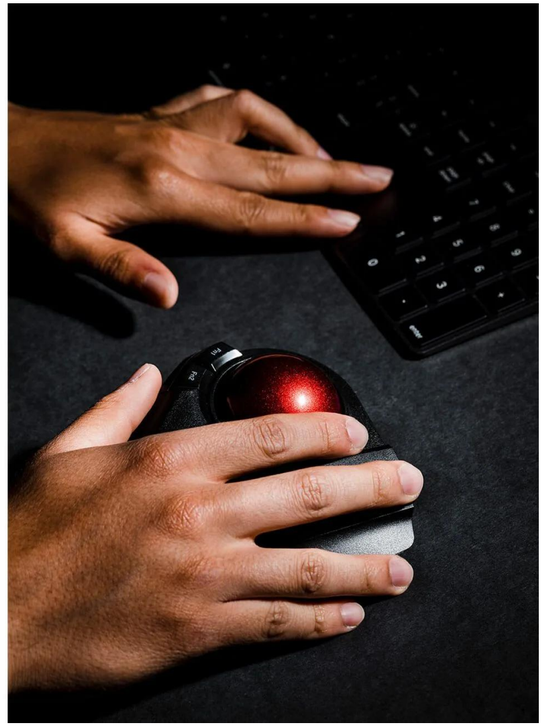

REMOTE CONTROL

- a handheld electronic device used to operate various appliances and electronic equipment wirelessly from a distance. It sends commands to the corresponding device, allowing users to control functions such as power, volume, channel selection, and playback without physical contact.

Remote Control

JOYSTICK AND DRIVING WHEELS

Joystick

- versatile input device used primarily for gaming and various control applications, allowing users to navigate and interact with digital environments by tilting a stick in different directions.
- Used in Video/computer games
- Used in simulator (flight simulator) to mimic the actual control

Joystick

JOYSTICK AND DRIVING WHEELS

Driving Wheel

- known as a steering wheel controller, is a specialized input device designed to simulate the experience of driving a vehicle in racing and driving simulation games.
- Used in Video/computer games (car racing games)
- Used in simulator (car driving simulators) to mimic the actual vehicle control


PXN
LT L2
LB L1
RT R2
RB R1
Y
B
X
A
SHARE
HOME
OPTIONS


00:59.23

TOUCH SCREENS

- A user interface that allows interaction by directly touching the display screen, rather than using a keyboard, mouse, or any other intermediary device.
- Faster entry of option than using keyboard or mouse


9:67
Friday, 08 December


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SCANNERS

- a device that converts physical images, documents, or objects into digital format for storage, manipulation, and sharing on computers or other digital platforms.
- The hard copy document or photo is scanned by a light source and produces a computer-readable image

Scanners

DIGITAL CAMERAS

- a device that captures and stores photographs and videos in digital format, as opposed to traditional film-based cameras and it uses an image sensor.

Digital Cameras

MICROPHONES

- a device designed to capture sound waves and convert them into electrical signals, which can then be amplified, recorded, or transmitted.


SCM-10
C414
RØDE
SUBZERO
SHURE SM7B


RØDE

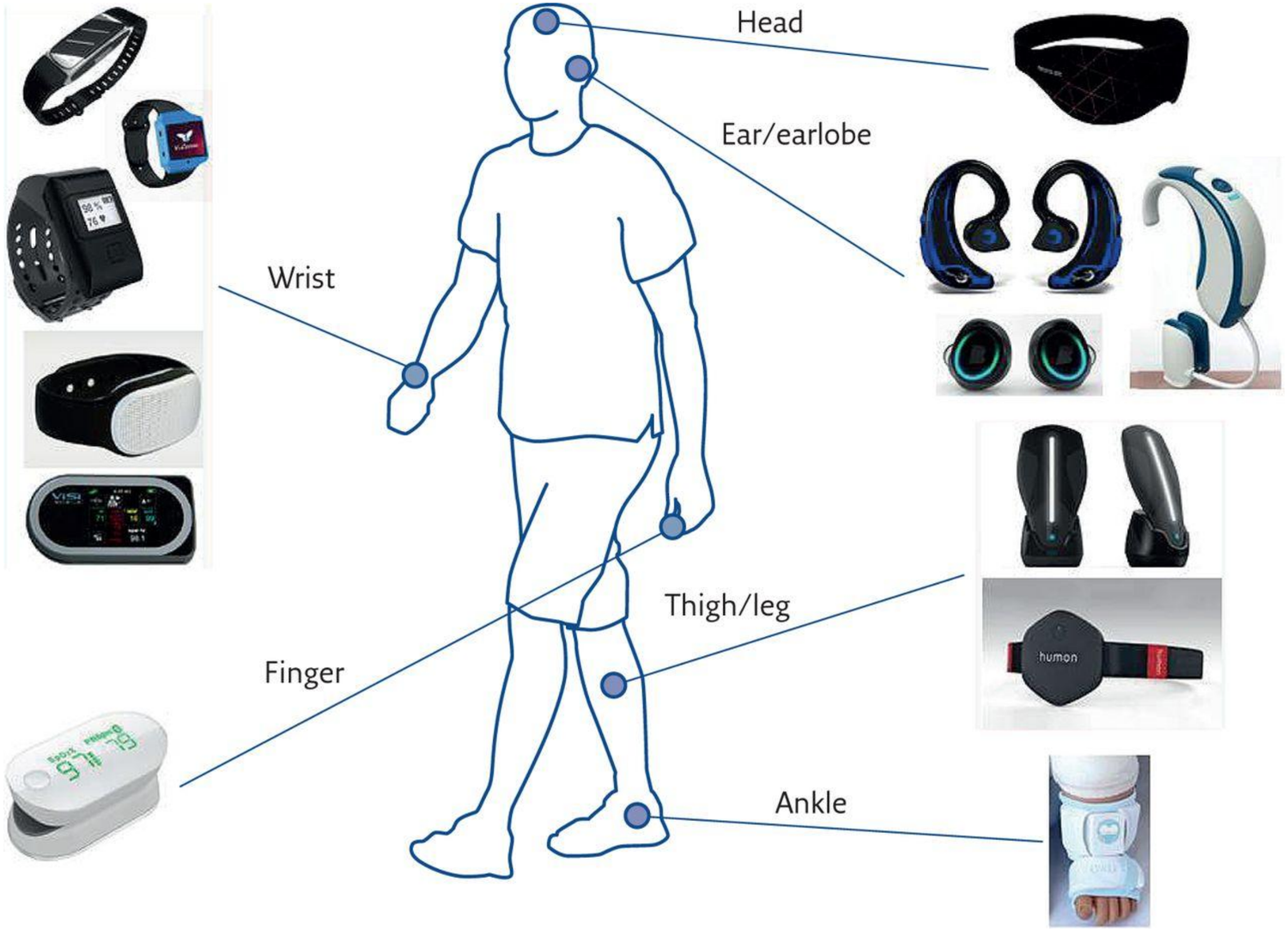
SENSORS

- are devices or components that detect and respond to physical inputs or changes in the environment, converting these stimuli into measurable signals or data. They are fundamental in various fields, including industrial automation, consumer electronics, healthcare, and environmental monitoring.

USES OF SENSORS

Type of Sensor	Applications
Temperature	Used in automatic washing machines, central heating system, automatic glasshouses, ovens
Pressure	Used in intruder alarm system, washing machines, robotics, environmental monitoring
Light	Used in automatic glasshouses, automatic doors, intruder alarm systems, street lighting control
Sound/ Acoustic	Used in intruder alarm system, monitoring liquid and power flow in pipes
Humidity/ Moisture	Used in automatic glasshouses, environmental monitoring, in factories where moisture level are crucial (heating, ventilation, and air conditioning).
pH (Potential Hydrogen)	Used in automatic glasshouses, chemical processes, and environmental monitoring

Sensors



LIGHT PENS

- a pointing device shaped like a pen that interacts with a computer screen through light-sensitive technology.

Light pens

DIRECT DATA ENTRY (DDE) DEVICES

Card Readers

Magnetic stripe readers

- a device used to read data encoded on the magnetic stripe of cards such as credit cards, debit cards, ID cards, and membership cards.
- The magnetic stripe, typically located on the back of the card, contains information such as account numbers, cardholder names, expiration dates, and other pertinent data.

Magnetic stripe reader

DIRECT DATA ENTRY (DDE) DEVICES

Card Readers

Chip and PIN readers

- interacts directly with the chip on the card, typically through a slot or contact points, to authenticate the transaction.
- When a customer inserts their chip card into the reader and enters a PIN (Personal Identification Number), the reader communicates with the card to verify the PIN and generate a unique transaction code.

Magnetic stripe reader

RADIO FREQUENTLY IDENTIFICATION (RFID) READERS

- It emit radio waves that power passive RFID tags and collect information stored on them, such as identification numbers or product details.
- are essential in various industries for inventory management, supply chain logistics, and asset tracking, offering efficient and automated data capture capabilities.

OPTICAL MARK RECOGNITION/ READER (OMR)

- refers to technology used to detect marks made by a human on a specially designed document, typically with a pencil or pen.
- These marks are usually in the form of checkboxes, bubbles, or filled-in circles, which signify responses to questions or data points.

OPTICAL CHARACTER RECOGNITION/ READER (OCR)

- is a technology that enables the conversion of different types of documents, such as scanned paper documents, PDF files, or images captured by a digital camera, into editable and searchable data.

BARCOODE READER

- a device or software application that reads QR codes, which are two-dimensional barcodes consisting of black modules arranged in a square grid on a white background.

OUTPUT DEVICES & USES

- It is part of external hardware components that connect to a computer to convey the results of data processing to the user or other systems.
- It includes monitors, projectors, printers, plotters,3D printers, Speakers, and actuators.

MONITORS

LED and LCD screens

- Display that uses light modulating properties of crystals or made up of tiny liquid crystals.

CRT monitors

- Use of an electron gun firing against phosphor screen.
- The picture is made up of tiny dots which are colored red, green and blue.

MONITORS

LED and LCD screens

- LED screens are slim, lightweight, and can be made in various shapes and sizes.
- higher brightness, better contrast ratios, and the ability to be viewed from wider angles.

CRT monitors

- screens are bulky and heavy due to the large glass tube inside.
- can suffer from flickering, which can cause eye strain over extended use.

Light Emitting Diode

Cathode ray tube (CRT) monitor

MONITORS

Multimedia projector

- a device that projects visual and sometimes audio content from a computer, DVD player, or other media sources onto a screen or surface, allowing for a larger display.
- are commonly used for presentations, educational purposes, entertainment, and professional meetings.

Multimedia Projector

PRINTERS

Laser Printer

- Printing is fast.
- Uses a laser beam to produce an image on a drum. The drum then picks up toner (a powdered ink) and transfers it to paper, which is fused with heat.
- It produce high quality and hard copy output

Laser Printer

PRINTERS

InkJet Printer

- Sprays tiny droplets of liquid ink onto paper through a series of nozzles.
- The ink is absorbed by the paper to create images and text. It produce high quality and hard copy output.
- Produce good quality hard copies.
- Known for excellent color reproduction and photo quality, making them ideal for printing photos and color documents

InkJet Printer

PRINTERS

Dot Matrix Printer

- Are type of impact printer where a print head (made up of a matrix of pins) presses against an inked ribbon.
- Produces lower-quality prints with visible dots forming characters and images.
- Suitable for text and simple graphics, but not for high-resolution images.

Dot Matrix Printer

3D PRINTERS

- Are primarily used in computer aided design (CAD) applications.
- Based on inkjet and laser printer technology and can produce solid object which is built up layer by layer using materials such as powdered resin, powdered metal, paper or ceramic.

3D PRINTER

Direct 3D Printing

- Uses inkjet technology, a print head can move left to right as in a normal printer and the print head can move up and down to build up the layers of an object.

Binder 3D Printing

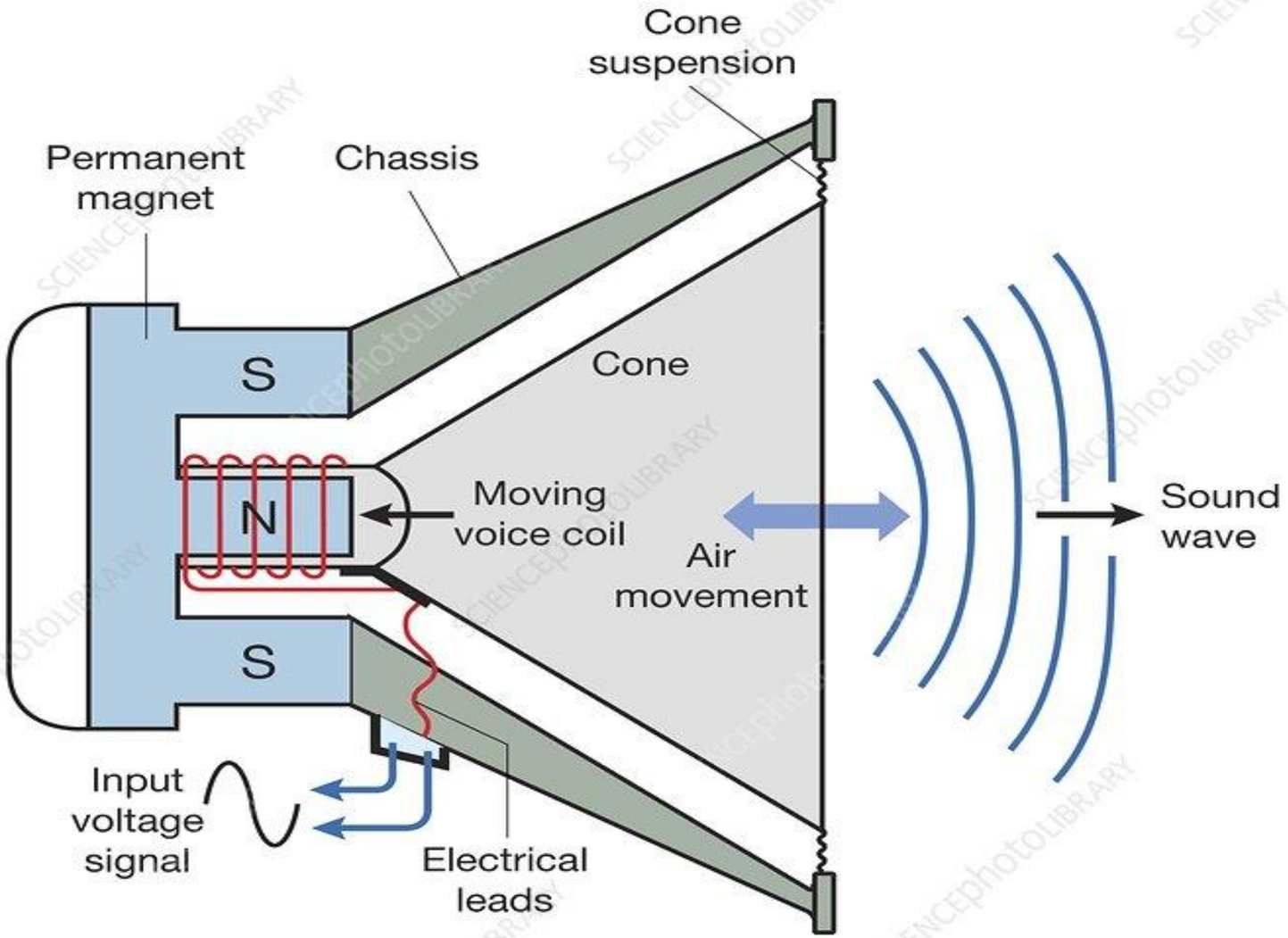
- Uses two passes for each of the layers.
- 1st spray dry powder
- 2nd a binder is sprayed to form a layer.

3D Printer

SPEAKERS

- Are output device that produce sound.
- Convert electrical signals into sound waves, allowing us to hear audio from various devices

Speaker


Cone
suspension
Permanent
magnet
Chassis
S
Cone
N
Moving
voice coil
Air
movement
Sound
wave
S
Input
voltage
signal
Electrical
leads

ACTUATORS

- A device that makes something move or operate.

Examples:

- When we go to the grocery store the doors open automatically for us. The actuator makes the door open
- In the car, we can move the car seat forward and backward before we drive away in or car.

Actuators

THANK YOU

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