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DEPARTMENT OF COMMERCE WITH INFORMATION TECHNOLOGY

21UCI507 -Business Information Technology

Input Devices

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Input Devices

Hardware components used to **enter data and instructions into a computer system**.

They convert user input into a form that the computer can understand and process.

Functions of Input Devices

- Accept data from the user
- Convert data into machine-readable form
- Send data to the CPU for processing

Types of Input Devices

1. Keyboard

The most common input device used to type text, numbers and symbols.

Uses:

- Data entry
- Command execution

Types of Keys:

- Alphabet keys
- Numeric keys
- Function keys
- Control keys

Types of Input Devices

2. Mouse

A pointing device used to control the cursor on the screen.

Functions:

- Click
- Double-click
- Drag and drop
- Scroll
- Types:
- Optical mouse
- Wireless mouse

Types of Input Devices

3. Scanner

Used to convert physical documents and images into digital form.

Uses: Document digitization

Image scanning

OCR processing

4. Microphone

Used to input sound into the computer.

Applications: Voice recording

Video conferencing

Speech recognition

Types of Input Devices

5. Webcam / Digital Camera

Captures live images and videos.

Uses:

Online meetings

Video calls

Security monitoring

6. Joystick

Control device mainly used in gaming and simulations.

Used for:

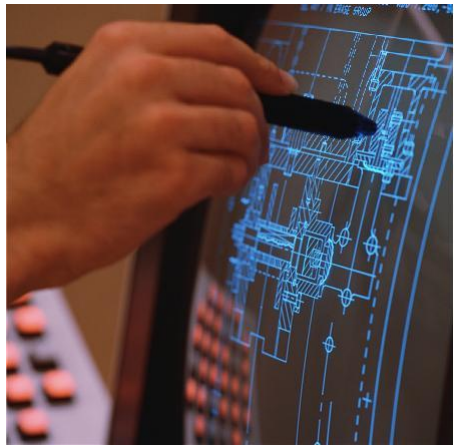
Flight simulators

Video games

Types of Input Devices

7. Light Pen

A pen-like device used to draw directly on the screen.



8. Touch Screen

Allows direct input by touching the screen.

Used in:

Smartphones

ATMs

Tablets

Characteristics of Input Devices

- User-friendly
- Interactive
- Accurate data entry
- Fast response

Mind map

Components of Input Devices

Keyboards

Used for typing text and commands

Mice

Used for navigating and selecting items

Scanners

Used for converting physical documents into digital formats

Microphones

Used for recording audio and voice input

DT-Based Case Study : Input Devices

Enhancing Student Attendance System Using Smart Input Devices

1. Empathize (Understand the Problem)

A college is facing issues with its manual attendance system:

- Faculty spend too much time taking attendance.
- Students sometimes give proxies.
- Data entry errors occur
- Admin staff find it difficult to maintain large volumes of attendance data.

2. Define (Identify the Core Problem)

The college needs a system that:

- Accurately identifies each student.
- Automatically records attendance.
- Reduces manual work.
- Integrates easily with existing student databases.

DT-Based Case Study : Input Devices

3. Ideate (Generate Possible Input Device Solutions)

The team brainstorms different input devices:

Input Device	How It Helps	Limitation
Barcode Scanner	Scans student ID cards quickly.	Cards may get lost/damaged.
RFID Reader	Auto-detects ID tags without scanning.	Requires RFID tagging & setup cost.
Fingerprint Scanner	High security & uniqueness.	Slower for large crowds.
Face Recognition Camera	No physical contact, fast.	Accuracy changes with lighting.
Numeric Keypad Login	Low cost.	Students may enter false IDs.

DT-Based Case Study : Input Devices

4. Prototype (Build a Simple Model)

•Each student gets an **RFID card**.

•A **card reader** is placed at the classroom entrance.

•A **microcontroller/computer** stores time-stamped attendance records.

•A simple dashboard shows attendance reports to faculty.

5. Test (Check Performance & Improve)

The prototype is tested for one week.

Observations:

• Time reduced from 10 minutes to **1 minute**.

• No proxy attendance.

• Students found it easy and fast.

• Faculty appreciated automatic report generation.

Improvements Suggested:

•Add SMS notification to parents for absentees.

•Add battery backup to the reader.

•Place multiple readers for large classrooms.

DT-Based Case Study : Input Devices

Final Outcome

The college successfully upgraded to an automated attendance system using **RFID input devices**, making the process:

- Faster
- More accurate
- More secure
- Less labor-intensive

Input Devices

Next Topic:

Output Devices