University of Mosul
Lecture No.: 3
College of Veterinary Medicine
Date: 2024-2025
Unit of Scientific Affairs
Website: https://uomosul.edu.iq/veterinarymedicine/

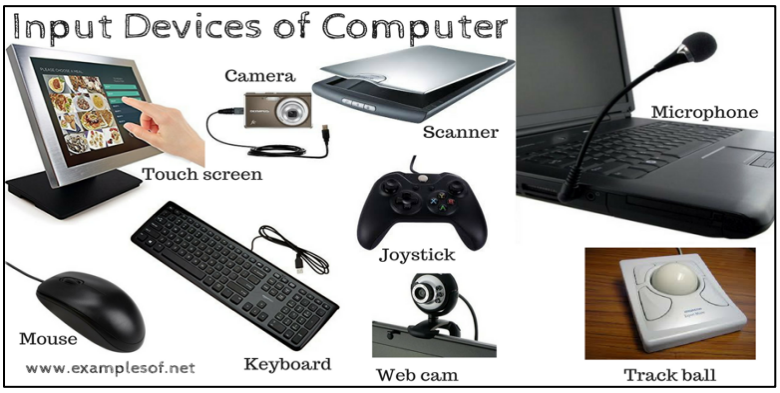
Lecture title: # Computer Input, Output Devices and Memory

Lecturer Affiliation: ***Iman Thannoon Sedeeq,*** *BSc, MSc, PhD*
Assistant Professor, Department of Public Health
College of Veterinary Medicine, University of Mosul, Mosul, Iraq
https://orcid.org/0000-0001-5903-3593

Summary:

Computer Input, Output Devices and Memory

Input Devices	**Output Devices**
1. Keyboard, mouse, digital camera, …… 2. Provide data to computers. 3. Translate data to a form that can computers understand.	Converts electronically generated information into human readable form.



Memory Types

1. *Primary memory*

ROM – Read Only Memory – the microcomputer's non-volatile memory is a permanent form of storage. Data is written into this memory at manufacture and are not affected by power loss.

RAM – Random Access Memory – the microcomputer's volatile memory. Data held in it is lost when power is switched off. RAM is considered "random access" because you can access any memory cell directly if you know the row and column that intersect at that cell.

Secondary Memory:-

Stores data and programs permanently: it is retained after the power is turned off

1. Hard disk drive (HDD) that store and provides relatively quick access to large amounts of data on an electromagnetically charged surface or set of surfaces.

2. Optical Disk: CD and DVD, that uses laser light as part of the process of reading or writing data to or from optical discs. Some drives can only read from discs, but recent drives are commonly both readers and recorders, also called burners or writers. CDs can store up to 700 megabytes (MB) of data and DVDs can store up to 8.4 GB of data.

3. Flash Disk a flash disks have no mechanical platters or access arms.

Differences between Main and Secondary Memory

Main Memory	Secondary Memory
1. Primary memory is also known as Main memory or Internal memory	1.Secondary memory is also known as External memory or Auxiliary memory
2. In primary memory, data is directly accessed by CPU.	2. In secondary memory, data is first transferred to RAM and then to CPU.
3. Semi conductor chips are used to store information in primary memory.	3. Magnetic disk, optical disks are used to store information in secondary memory.
4. Information stored is temporary and it can be lost when there is a sudden power cut.	4. Information stored is permanent unless one deletes it intentionally.
5. Primary memory devices are more expensive than secondary storage devices.	5. Secondary memory devices are less expensive when compared to primary memory devices.
6. Nature of Parts of Primary memory varies. RAM- volatile in nature. ROM- Non-volatile	6. It's always Non-volatile in nature.
7. It is very fast in interacting with CPU.	7. It is little slow in interacting with CPU.
8. Primary memory has limited storage capacity.	8. Secondary memory can store bulk amounts of data.
9. Examples: RAM, ROM	9. Examples: Magnetic Tapes, Optical Disc, Floppy Disks, Flash memory [USB drives], etc.