TOPIC 2: COMPUTER HARDWARE

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Computer Hardware

Explains about the computer hardware and general components
Computer Hardware

Central Processing Unit

Memory Unit

Input

Output

Storage

Internal hardware

External hardware

Internal hardware

External hardware

Internal hardware

External hardware

PutraOCW
Central Processing Unit

Control Unit
- Direct and coordinate all operations in a computer

Arithmetic Logic Unit
- Perform arithmetic, logical, and comparison operation

Central Processing Unit

Machine Cycle

Fetch
Decode
Execute
Store

Data Representation
- ASCII
- UNICODE
- EBCDIC

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Memory

Volatile Memory
RAM: DRAM and SRAM

Non Volatile Memory
ROM, flash memory, CMOS

Access time
is the amount of time it takes the processor to read from memory
Input Devices

- **Input Devices**

  - **Keyboard**
  - **Ergonomic**
  - **Gaming and multimedia**
  - **Pointing devices** - trackball, pointing stick, touch pad…
  - **Laptop**
  - **Thumb size**
  - **Virtual**
  - **Reading devices** - verify personal characteristics, check processing, read barcode
  - **Motion input** - gesture recognition, using air gestures…
  - **Scanner** - flatbed, drum, sheet-fed, pen/handheld scanner…
  - **Audio/Video Input**

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**Notes**

- Virtual devices: Using air gestures...
- Speed and precision are key.
- For example, a stylus for drawing or writing.
Output Devices

- **Monitor/Display devices**
- **Printer**
  - Impact printer: Dot matrix, line printer
  - Non-Impact: Laser, thermal, label, ink-jet printer
- **Force feedback devices**
  - Joysticks, wheels, gamepads, and motion-sensing game controllers.
- **Audio and Video**
Storage devices

- Hard Disks
- Optical Discs
- Microfilm, Microfiche, Tape, Magnetic stripe cards and smart cards
- Flash Memory
- Solid State Drive
- USB flash
- Memory card
- Cloud Storage - is an Internet service that provides storage to computer users