



Office Automation

Faculty of Computer Science and Engineering

Dr. Abdulqader Almars

Lecture and Instructor

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Course Description

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Subjects	Week
Overview	1
Chapter 1: Office Automation Part 1 and 2	2-4
Chapter 3: Word	4-6
Quizzes 1	6
Chapter 4: PowerPoint	7
Midterm Exam	8
Chapter 5: Excel	9-10
Quizzes 2	10
Chapter 6: Latex	11-13
Revision	14

Course outline

1. Realize the characteristics of office automation systems environment.
2. Understanding Components of computerized office automation systems.
3. Identify the hardware in office.
4. Recognize suitable software of office automation systems
5. Information Systems infrastructure for office.
6. Comprehend and use a synchronize applications.

Assessment Criteria

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<u>Overview of Assessment</u>	<u>Weight</u>	<u>Deadline</u>
Assignments	10%	During the Semester
Quizzes_1	15%	Week 5
Mid_Term	20%	Week 8
Quizzes_2	15%	Week12
Final Exam - Tasks	40%	Week 15
Total	100%	

Textbook

Any related book of Microsoft application especially Word, Excel,

PowerPoint. Any related book of synchronize applications.

Any related book of Information System such as:

Joseph Valacich and Christoph Schneider (2013): *Information Systems Today: Managing in the Digital World*, 6th Edition. Prentice Hall.

Ken Laudon and Jane Laudon (2009): *Management Information Systems*, 11th edition.

Prentice Hall.

Chapter 1

Introduction to Computers

What are computers?



Computers are electronic devices that can follow instructions to accept input, process the input and then produce **information**.

Look inside the computer



SOFTWARE

HARDWARE

Computers are made of

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1. HARDWARE
2. SOFTWARE

Hardware



غير مطلوبة فقط للفهم

Hardware

The parts of computer itself (tangible objects) including :

- CPU (or Processor) and Primary memory (or Main Memory)
- Input devices i.e the keyboard and mouse
- Output devices
- Storage devices

The Case (System Unit or System Cabinet)

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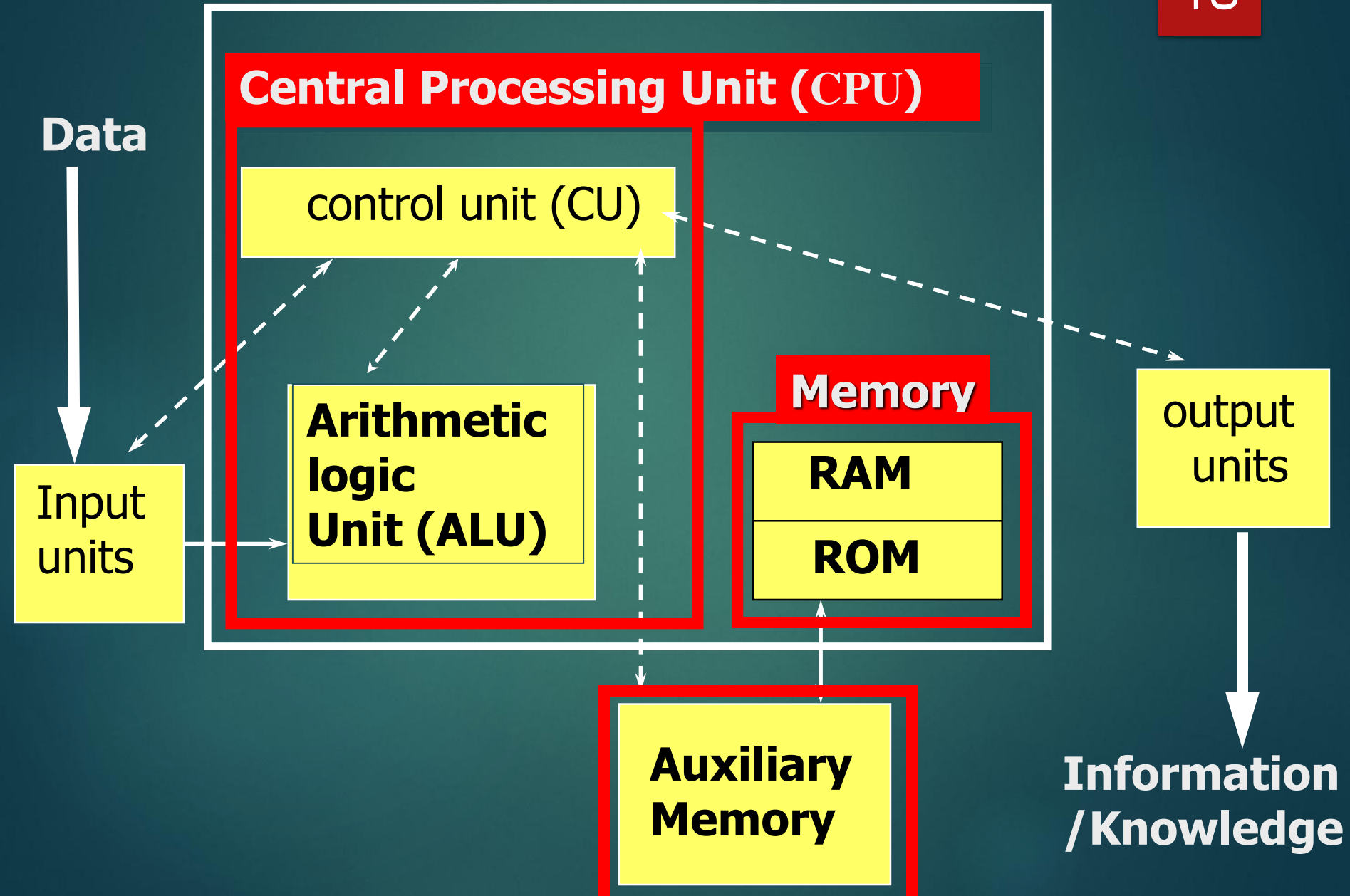
غير مطلوبة فقط للفهم



1. Central Processing Unit (CPU)
2. Input units
3. Output units
4. Memory (**Main or Primary** Memory & **Secondary or Auxiliary** Memory)

Components of a Computer System

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Hardware Organization

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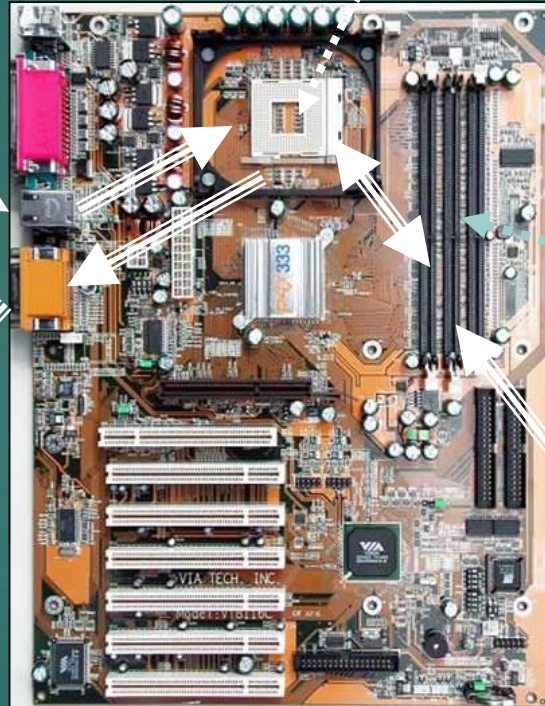
Input Devices ...



CPU



memory



motherboard



hard drive



غير مطلوبة فقط للفهم

Input Devices

- Translate data from **form** that humans understand to one that the computer can work with
- Most common are keyboard and mouse



Examples of Input Devices ۱۸

1. **Keyboard** (QWERTY keyboard, ATMs keyboard)
ATM: automatic teller machine
2. Mouse
3. Scanner
4. Pre-storage Device (Disk, CD's, ... etc.)
5. Optical mark recognition (Light Pin , Bar code scanners)
6. Microphone
7. Joystick .

See Page 4 in text book

Examples of Input Devices(2)



8. Point and Draw devices

9. Trackball

10. Touchpad

11. Touch screen

12. Magnetic stripes and smart cards.

13. Digital Cameras



Trackball



Trackpoint



Digitizer Tablet and Pen



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Joystick



Trackpad



Hardware Organization

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CPU



memory



hard drive



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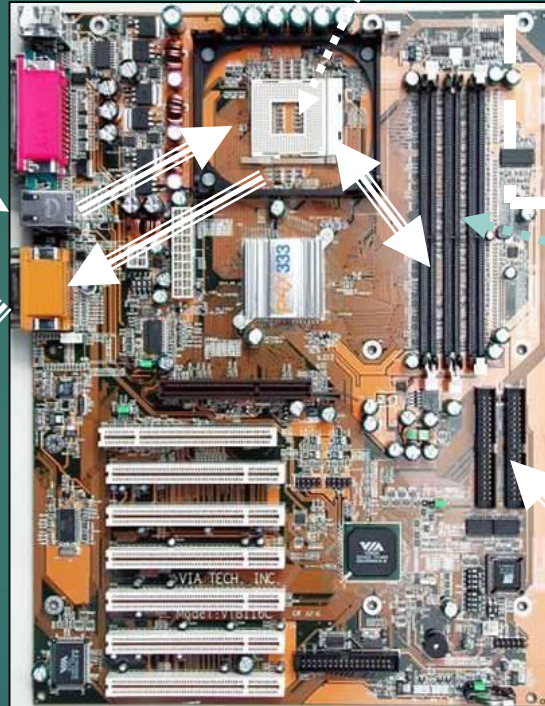
Hardware Organization



CPU



memory



motherboard

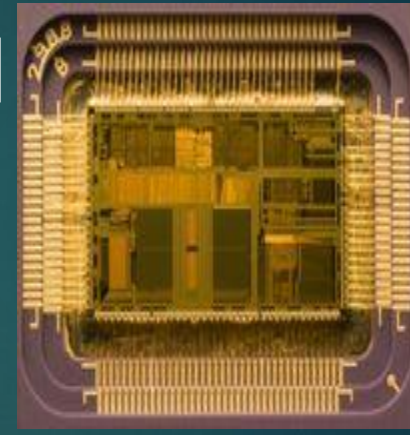


hard drive

غير مطلوبة فقط للفهم

Central Processing Unit (CPU) ۳۳

- A specific chip or the processor
a CPU's performance is determined by the rest of the computers circuitry and chips.
- The Central Processing Unit (CPU) performs the actual processing of data
- The speed (clock speed) of CPU measured by Hertz (MHz)



The CPU consists of :

- ❑ Control Unit (CU)
- ❑ Arithmetic and Logical Unit (ALU)
- ❑ Some Registers

The Control Unit (CU) :

coordinates all activities of the computer by:

- ▶ Determining which operations to perform and in what order to carry them out.
- ▶ The CU transmits coordinating control signals to other computer components.

The ALU :

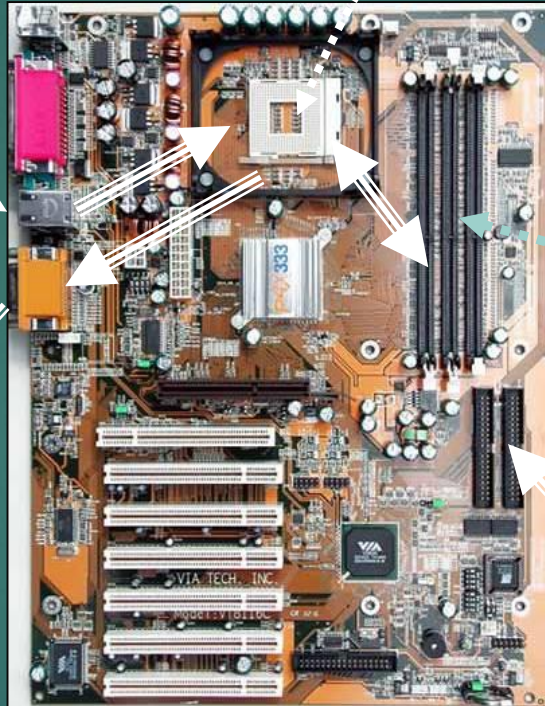
consists of electronic circuitry to perform:

- ▶ Arithmetic operations (addition, subtraction, multiplication and division)
- ▶ Logical operations (and, or, not, ...) and to make some comparisons (less-than, equal, ... etc.)

Hardware Organization



CPU



motherboard



memory



hard drive

غير مطلوبة فقط للفهم

Primary Memory

- ▶ Memory (fast, expensive, short-term memory): Enables a computer to store, at least temporarily, data, programs, and intermediate results.
- ▶ Two general parts:
 1. RAM
 2. ROM

RAM (Main Memory)



- ▶ its a primary storage or random access memory (RAM).
- ▶ it temporarily holds data and programs for use during processing (volatile)
- ▶ Any information stored in RAM is lost when the computer is turned off.
- ▶ RAM is the memory that the computer uses to temporarily store the information as it is being processed. The more information being processed the more RAM the computer needs.
- ▶ RAM consists of locations or cells. Each cell has a unique address which distinguishes it from other cells.

ROM: Read Only Memory

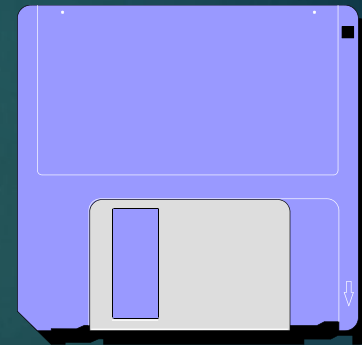
ROM is part of memory

- Programmed at manufacturing time
- Its contents cannot be changed by users
- It is a permanent store

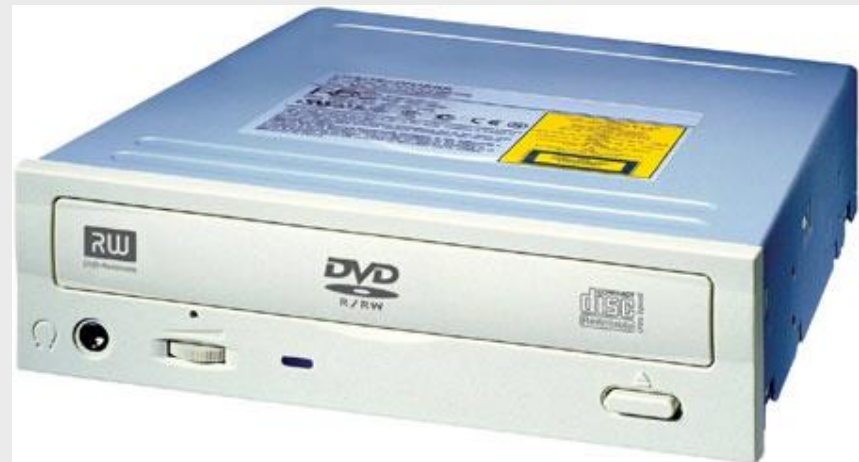
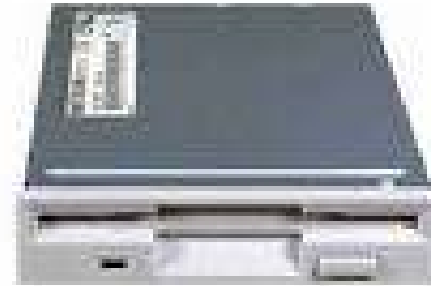
Secondary Storage

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- ❑ Stores data and programs permanently: its retained after the power is turned off
- ❑ Examples
 - Hard Drive (Hard Disk)
Located outside the CPU, but most often contained in the system cabinet
 - Floppy Disk
 - Optical Laser Discs
 - ❖ CD-ROM, CD-RW, and DVD



Kinds of Disk Drives



Common Secondary Media

- **Diskettes**

- Data represented as magnetic spots on removable flexible plastic disks
- Most common size is 3 1/2 inches, in a rigid plastic case
- Disk drive holds the diskette, reads or retrieves the data and writes or stores data



Common Secondary Media

- Hard drive



- Data is represented magnetically as with diskettes
- Normally more than one rigid platter in a sealed unit
- These disks are not removable
- Significantly more capacity and faster operating than diskettes

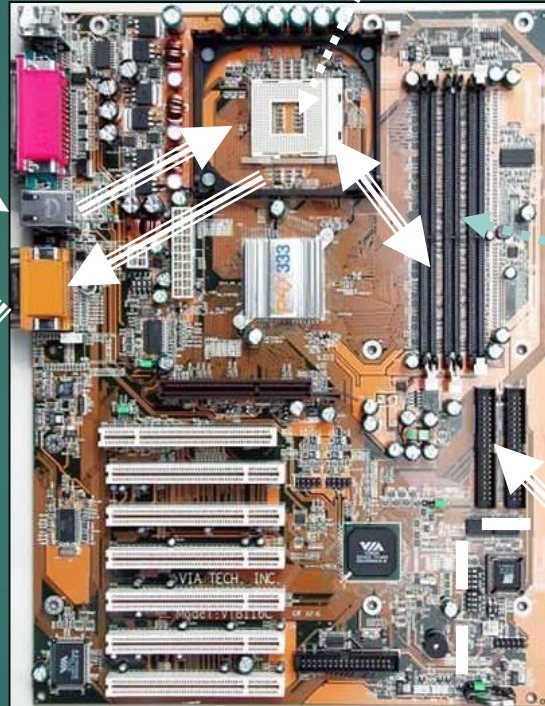
Hardware Organization



CPU



memory



motherboard



hard drive

غير مطلوبة فقط للفهم

Common Secondary Media

■ Optical Laser Discs

- ▶ CD ROM & DVD's
 - ▶ Data is represented as pits and lands
 - ▶ Some kinds are read only (CD-ROM) and some kinds are rewritable (CD-RW)
 - ▶ Significantly more capacity and faster operating than diskettes



Hardware Organization



CPU



memory



hard drive



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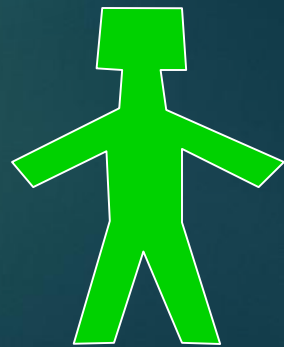
Output ...



Output Devices

Pieces of equipment that translate the processed information from the CPU into a form that humans can understand.

Processed
information



Output Devices

- Monitors
- Printers
 - Dot matrix printers
 - Ink jet printers
 - Laser printers
- Sound Blasters (Sound Card By Creative Lab)
- Controlling other devices

Software



The instructions that tell the computer what to do

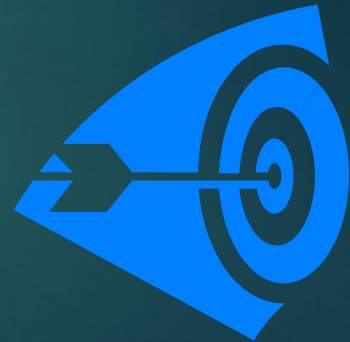
1. Application Software - helps end-users perform general purpose tasks
2. System Software - enables application software to interact with the computer

System Software

- The software that controls everything that happens in a computer.
- Background software, manages the computer's internal resources

Application Software – Basic Tools

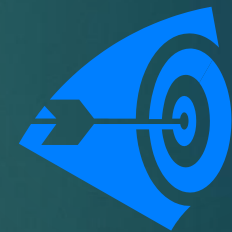
- **Word processors**– **example: Microsoft word**
- **Spreadsheets**-- **example: Microsoft Excel**
- **Database managers**-- **example: Microsoft Access**
- **Graphics**-- **example: Photoshop**



Spreadsheets: Computer software that allows the user to enter columns and rows of numbers in a accounting book like format.

Units of Measurements

- Bit (Binary Digit)(takes two values: 1 or 0)
- Byte = 8 bits
- KB (Kilo-byte) = 1024 bytes
- MB (mega-byte) = 1024 KB
- GB (giga-byte) = 1024 MB
- TB (Tera-byte) = 1024 GB



Remark: $1024=2^{10}$

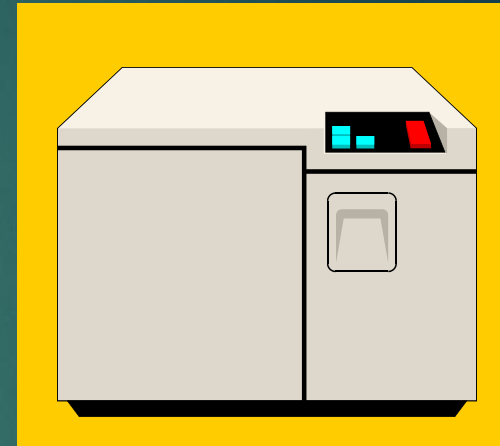
Four Kinds of Computers

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1. Microcomputers



2. Minicomputers



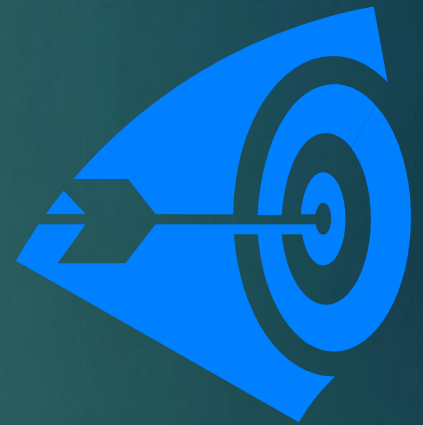
3. Mainframe computers



4. Supercomputers



- ▶ Microcomputer => Personal Computer => PC
- ▶ There are **3** types of the Microcomputers :
 1. Laptop
 2. Desktop
 3. Workstation



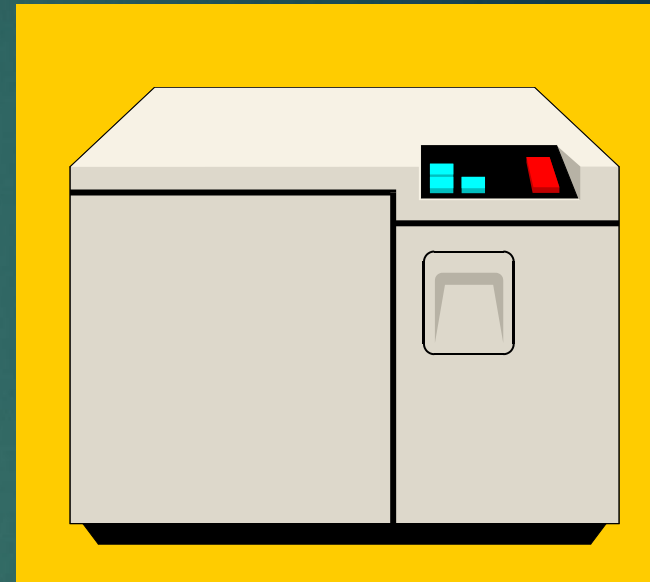
- ▶ **Personal Computer:** A small, single-user computer based on a microprocessor.
- ▶ **Workstation:** A powerful, single-user computer. A workstation is like a personal computer, but it has :
 - a more powerful microprocessor and,
 - in general, a higher-quality monitor.

Minicomputer, Mainframe, and Supercomputer

- ▶ **Minicomputer:** A multi-user computer capable of supporting up to **hundreds** of users **simultaneously**.
- ▶ **Mainframe:** A powerful multi-user computer capable of supporting many **hundreds or thousands** of users **simultaneously**.
- ▶ **Supercomputer:** An extremely fast computer that can perform hundreds of millions of instructions per second.

Minicomputers

- ▶ Desk-sized
- ▶ More processing speed and storage capacity than microcomputers
- ▶ General data processing needs at small companies
- ▶ Larger companies use them for specific purposes



Mainframe Computers

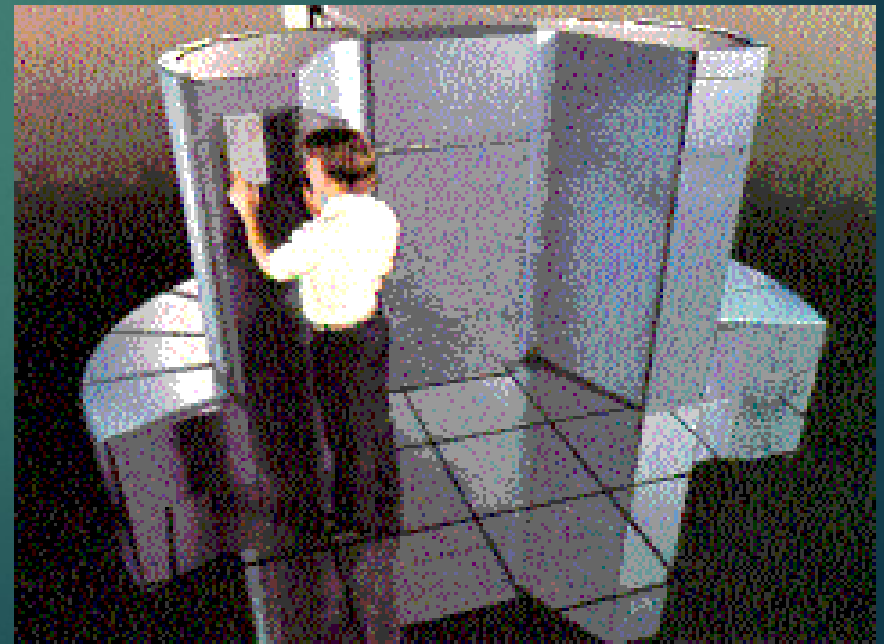


- ▶ Larger machines with special wiring and environmental controls
- ▶ Faster processing and greater storage than minicomputers
- ▶ Typical machine in large organizations

Supercomputers



- ▶ The most powerful of the four categories
- ▶ Used by very large organizations, particularly for very math-intensive types of tasks



Supercomputers

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Characteristics of Computers



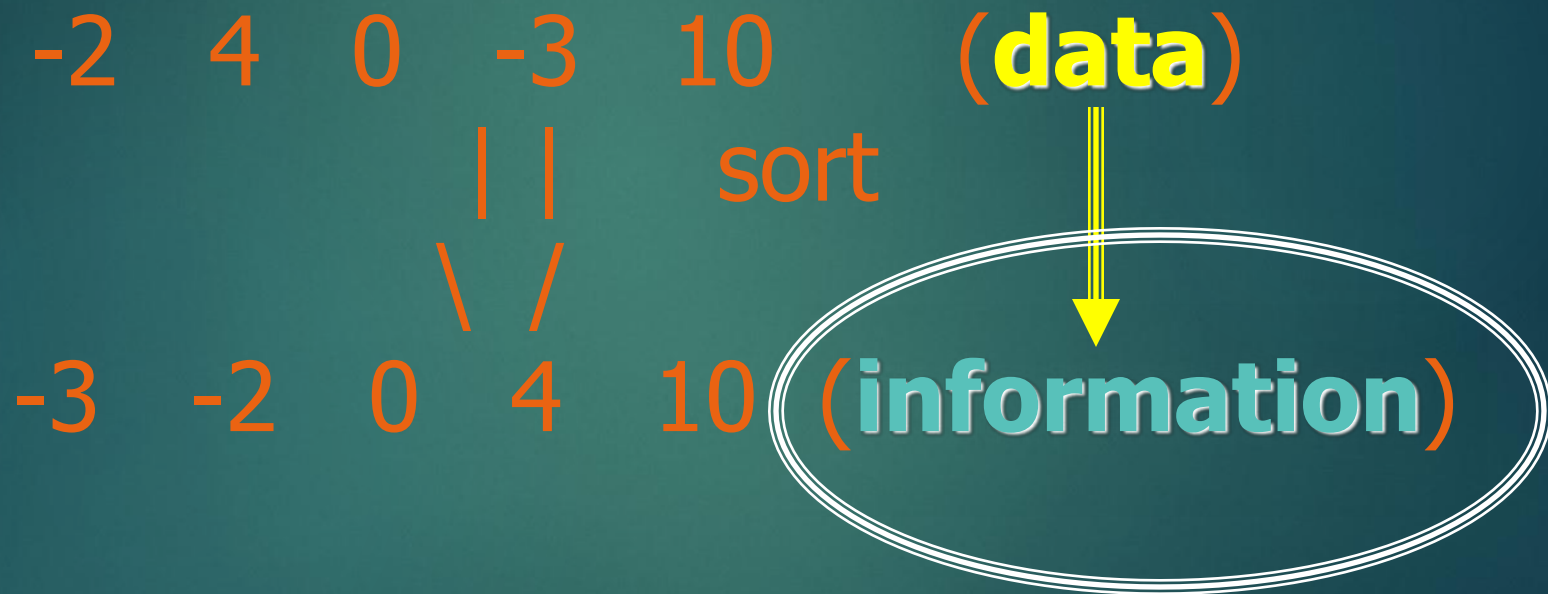
- 1- Store a large amount of data and information for a long period of time.
- 2- process data and information in high accuracy level .
- 3- Speed in processing data information.
- 4- Sharing of information / network.

Understanding the difference between Data, Information and Knowledge:



- ✓ **Data**: is the name given to basic facts such as names and numbers.
- ✓ **Information**: is data that has been converted into a more useful or intelligible form.
- ✓ **Knowledge**: arrangement of information and classifying information of the same type or the same topic.

▶ e. g.



Processing **data** produces
information, and processing
information produces
knowledge.