

Lecture 2. Introduction to computer systems. Architecture of computer systems.

01

Review of computer systems

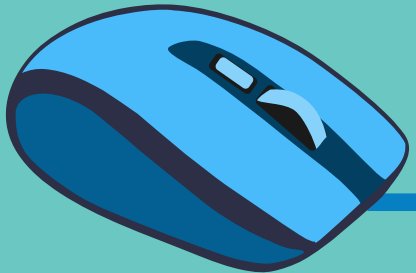
02

Evolution of computer systems.

03

Architecture and components of computer systems. Use of computer systems. Data representation in computer systems.

AGENDA



Vocabulary

- ❖ architecture of computer systems - архитектура компьютерной системы
- ❖ hardware - аппаратное обеспечение компьютера
- ❖ software - программное обеспечение компьютера
- ❖ firmware - прошивка, микропрограмма
- ❖ electronic device - электронное устройство
- ❖ tangible - осязаемый
- ❖ accomplish - выполнять
- ❖ speed - скорость
- ❖ reliability - надежность
- ❖ accuracy - точность
- ❖ diligence - старательность
- ❖ versatility - многосторонность
- ❖ storage - запоминающие устройства
- ❖ chipset - набор микросхем
- ❖ headphones - наушники
- ❖ speakers - колонки
- ❖ floppy disk - дискета
- ❖ hard disk drive - жесткий диск
- ❖ accept - принимать
- ❖ generate - генерировать



1.Review of computer systems.



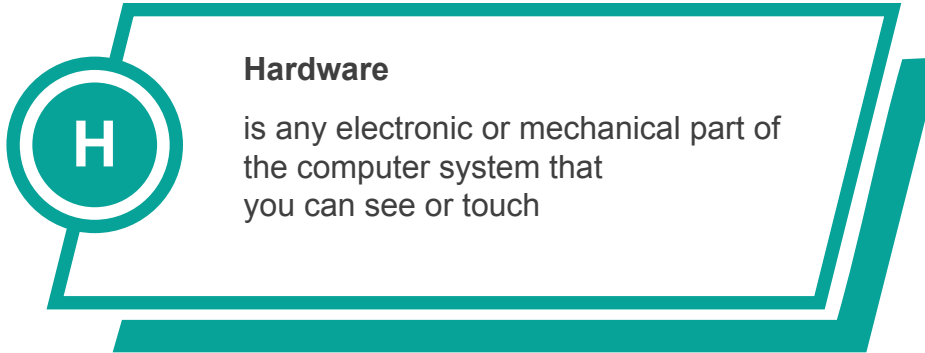
What is a computer?

A computer is, at its most basic, a machine, which can take instructions, and perform computations based on those instructions.

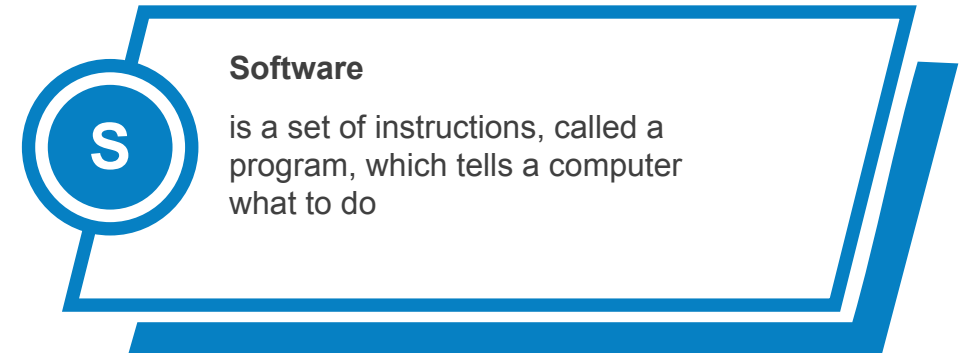
A computer is an electronic device that manipulates information, or "data". It has the ability to store, retrieve, and process data. You can use a computer to type documents, send email, and browse the internet. You can also use it to handle spreadsheets, accounting, database management, presentations, games, and more.

Computer systems of interconnected computers that share a central storage system and various peripheral devices

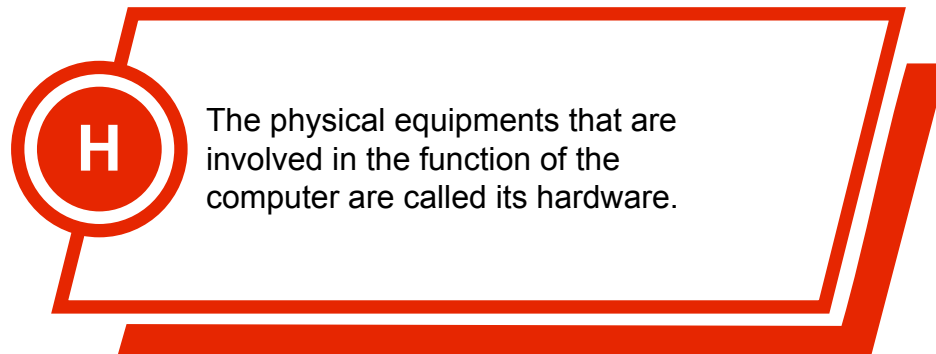
Main part of a computer system



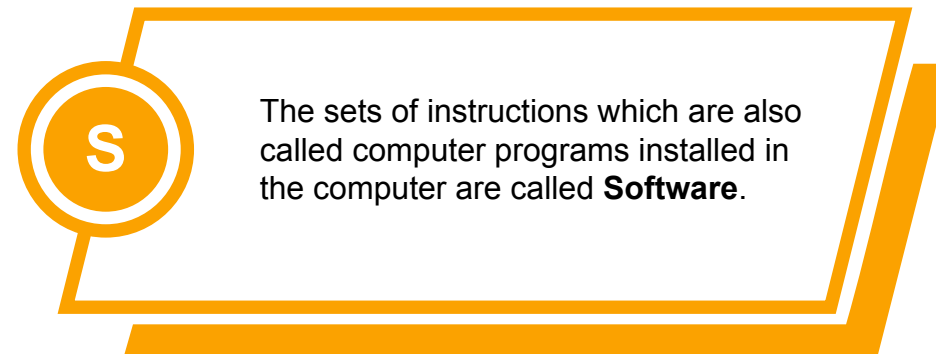
Hardware
is any electronic or mechanical part of the computer system that you can see or touch



Software
is a set of instructions, called a program, which tells a computer what to do



H The physical equipments that are involved in the function of the computer are called its hardware.



S The sets of instructions which are also called computer programs installed in the computer are called **Software**.

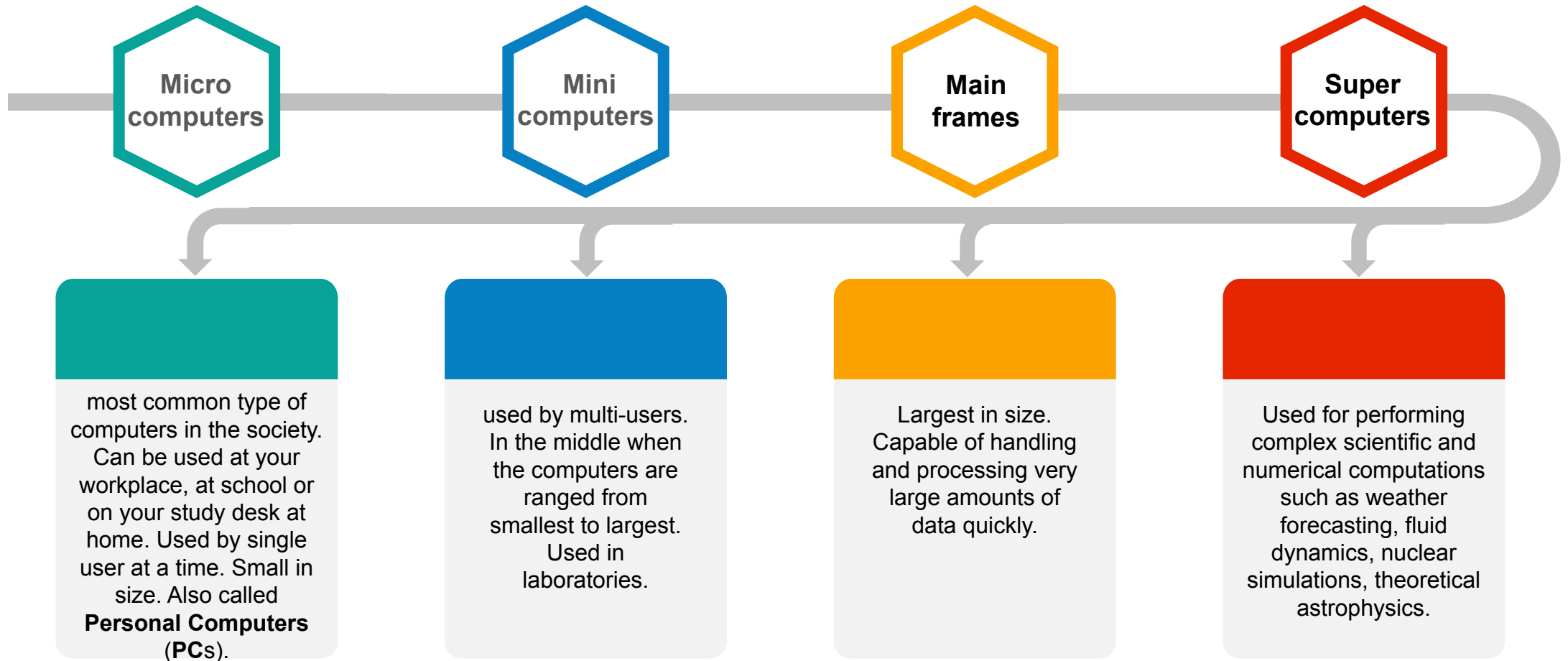


2. Evolution of computer systems.

When you hear a word
“COMPUTER” what comes
first to your mind?



Computer classification



3. Architecture and components of computer systems. Use of computer systems. Data representation in computer systems.

The computer hardware is typically divided into four main categories:

01

Processing Devices

02

Memory Devices

03

Input/, Output Devices

04

Storage Devices



Infographic Style

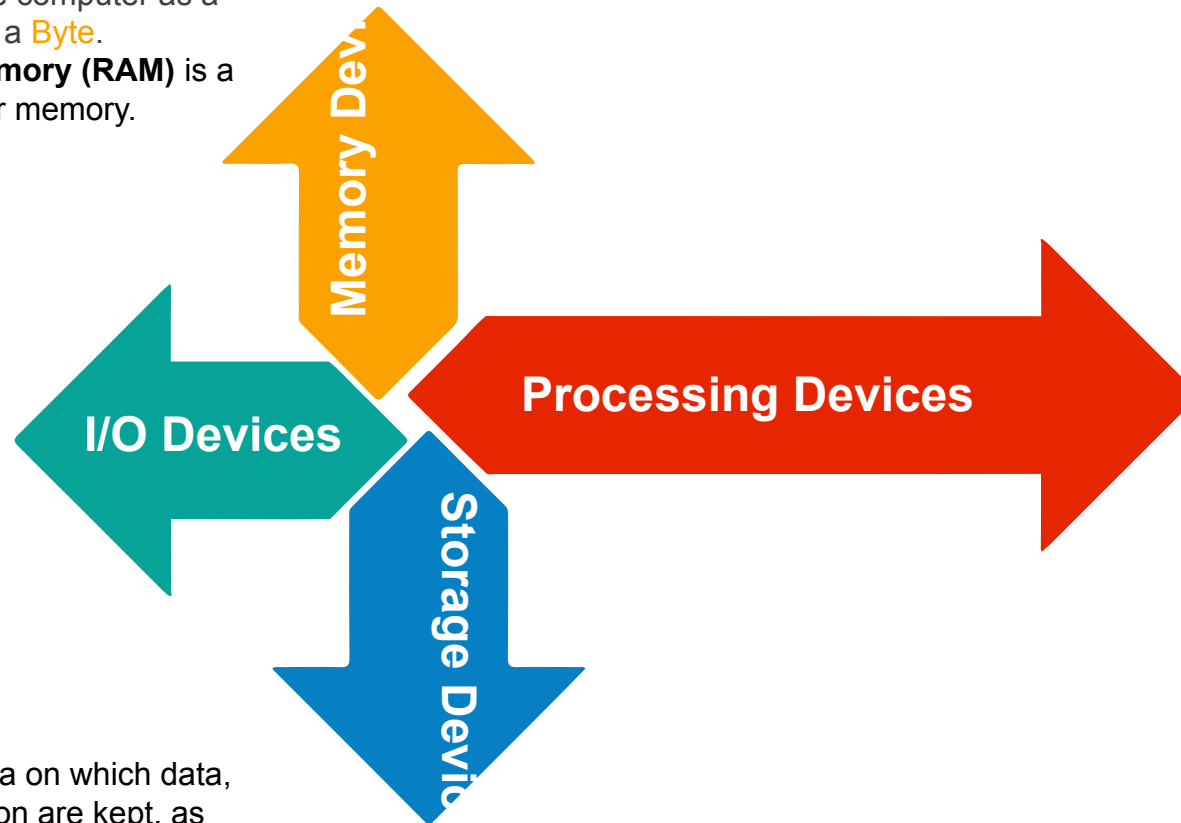
A character is stored in the computer as a group of 0s and 1s, called a **Byte**. The **Random Access Memory (RAM)** is a **volatile** form of a computer memory.

The collection of unorganized facts that can include words, numbers, pictures, sounds, and videos is called **data**.

A series of instructions that tells a computer how to perform the tasks is called **program**.

An instruction given to a computer program is called **command**.

Storage refers to the media on which data, instructions, and information are kept, as well as the devices that record and retrieve these items.



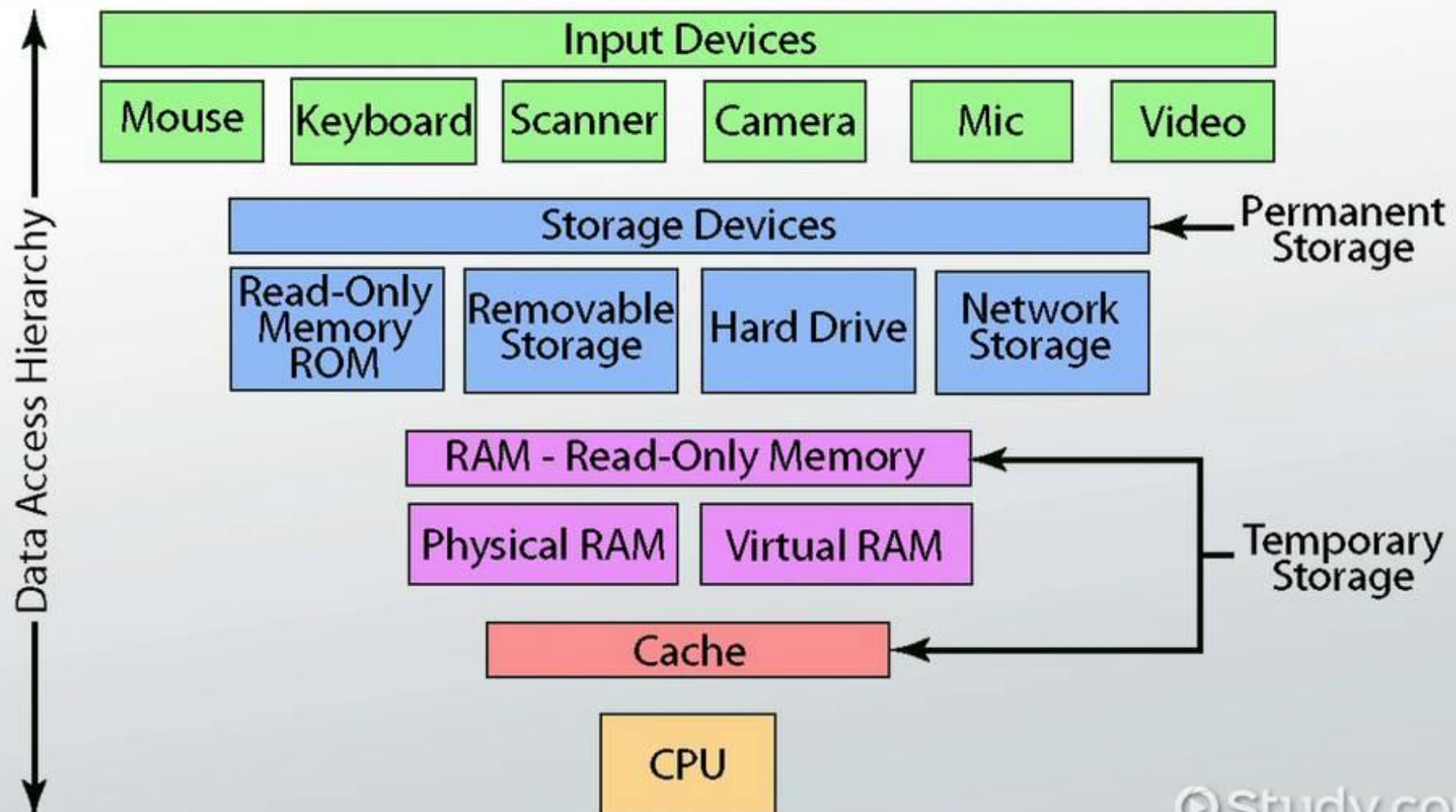
The first technical characteristics of a CPU is a **speed**.

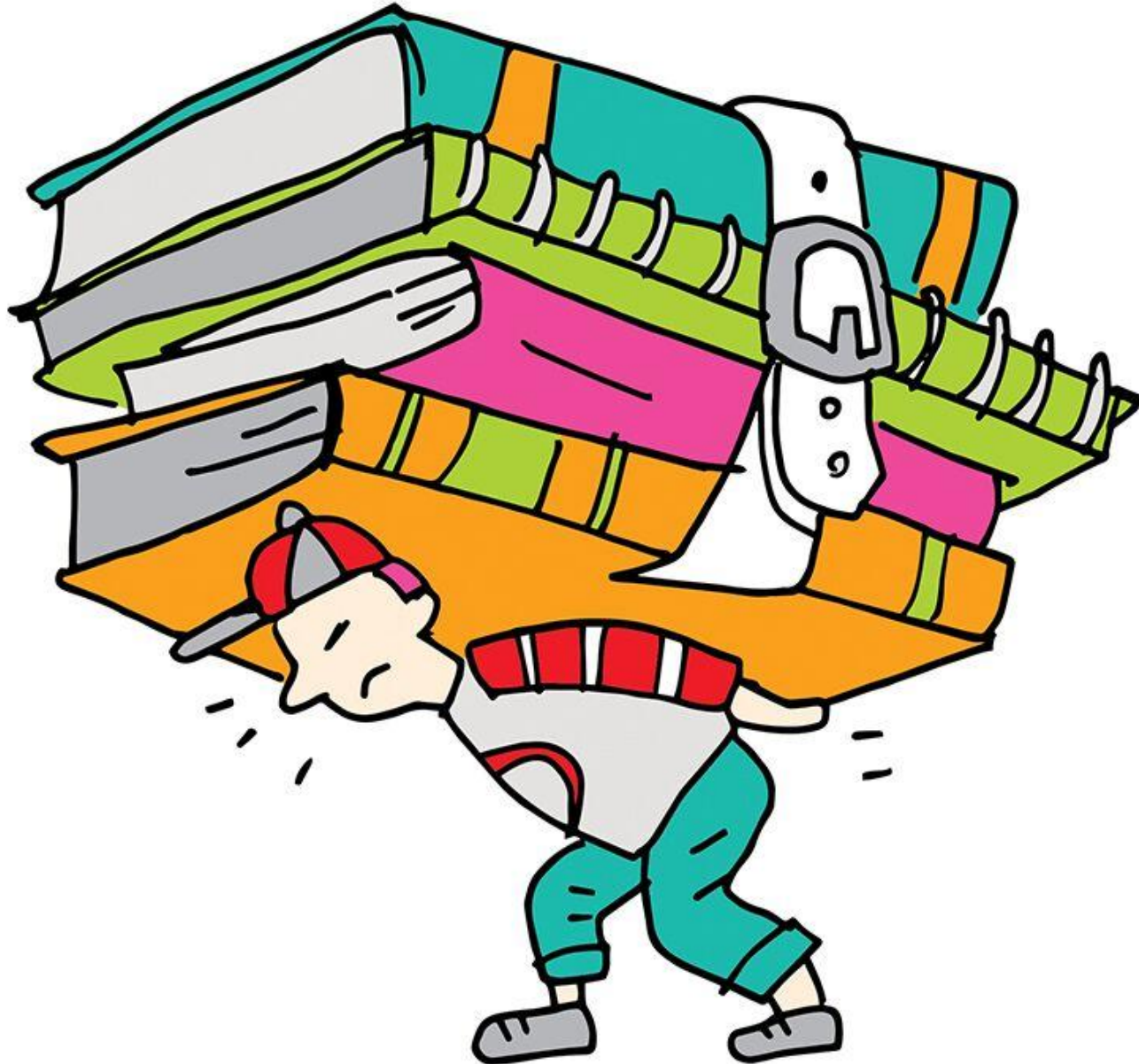
Two major components of a Central Processing Unit are **Control Unit (CU)** and the **Arithmetic and Logic Unit (ALU)**, which work together to perform the processing operations.

The Control Unit (CU). As you know, a computer program or set of instructions must be stored in memory for a computer to process data. The CPU uses its CU to execute these instructions.

The Arithmetic and Logic Unit (ALU). ALU performs the arithmetic, comparison, and logical operations.

How do computer store data?





Homework



Read lecture

Take a note for yourself



Learn vocabulary

<https://quizlet.com/523649324/ict-flash-cards/>

References



1. June J. Parsons and Dan Oja, *New Perspectives on Computer Concepts 16th Edition - Comprehensive*, Thomson Course Technology, a division of Thomson Learning, Inc Cambridge, MA, COPYRIGHT © 2014.
2. Lorenzo Cantoni (University of Lugano, Switzerland) James A. Danowski (University of Illinois at Chicago, IL, USA) *Communication and Technology*, 576 pages.
3. Craig Van Slyke *Information Communication Technologies: Concepts, Methodologies, Tools, and Applications* (6 Volumes). ISBN13: 9781599049496, 2008, Pages: 4288
4. Utelbaeva A.K., Utelbaeva A.K. *Study guide for lectures on discipline "Computer science"*, Shimkent 2008, 84 pages.



THANK YOU

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