Grade 7
ICT

Unit 1
Central Processing Unit

Reading Material

Central Processing Unit

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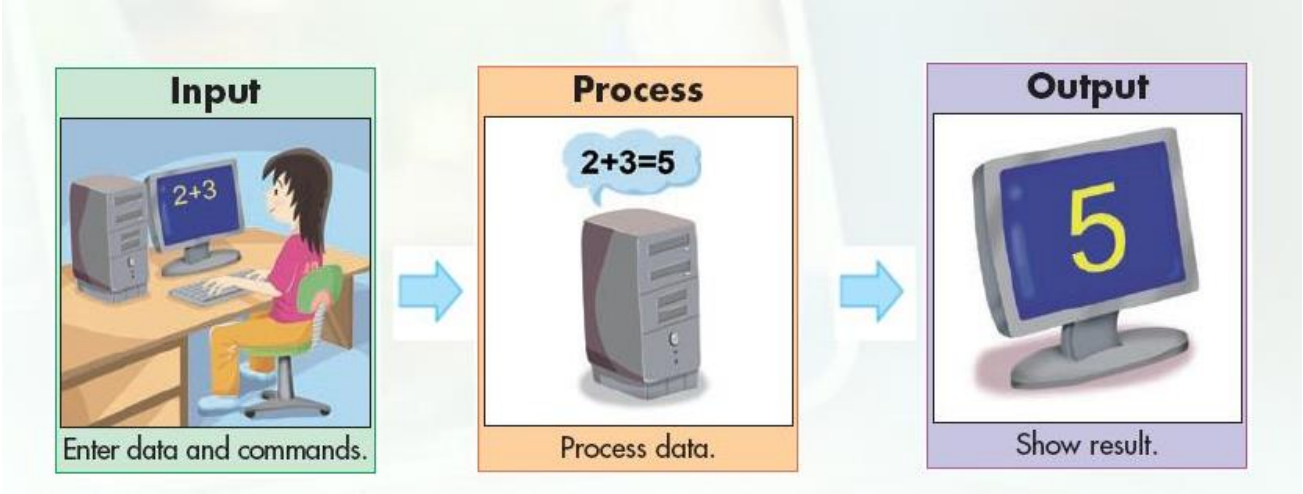
The functions of a computer

The basic functions of a computer are entering data, processing them and producing processed data (information). we also learned that our system unit performs this function called process.



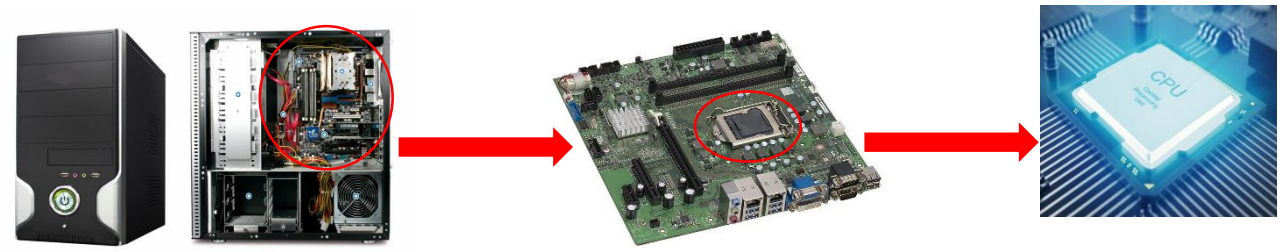
We have heard in a hotel or a restaurant, the cooking is done in the kitchen. Then who does this cooking? We call him Chef. This computer is like the kitchen of a restaurant. Then the central processing unit inside our computer is like the chef working in this kitchen or we call it the processor.

Computer is like kitchen

Central Processing Unit is like a Chef in that kitchen

Central Processing Unit (CPU)

- Central Processing Unit (CPU) cannot be observed from the outside.
- It can be found inside the system unit.



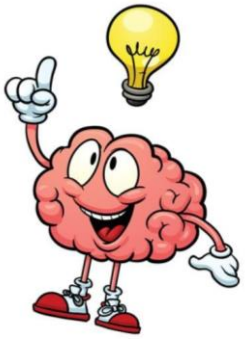
System Unit Motherboard CPU

- Central Processing Unit (CPU) execute instructions stored in a computer program and processes data according to given instructions

Prepares food

Data → Information

CPU is the brain of the computer



- But CPU works according to the instructions we give, because it can't think and work on its own.

Different types of CPU

- There are two major processor manufactures in the market.
- They are **Intel** and **Advanced Micro Devices(AMD)**

Components of a CPU

The Central Processing Unit consists of three main components

Arithmetic and Logical Unit - ALU

Control Unit - CU

Memory Registers - MU

Arithmetic and Logical Unit - ALU

Mathematical (Arithmetic) and Logical functions are performed in the ALU.

Arithmetic	Logical
+ - * /	> < >= <=
Mathematical calculations	Comparison of two numbers

- **Example for Arithmetic Operation**

Mathematics	-	65
English	-	85
ICT	-	70
Total	**=**	**220**

Average of a student = 220 / 3

= 73.33

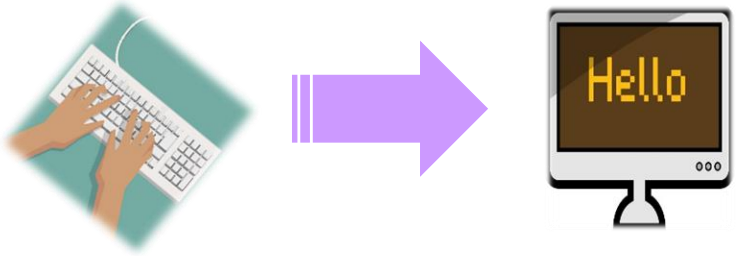
- **Example for Logical Operation**

ICT mark of student 1	-	70
ICT mark of student 2	-	85

ICT mark of Student 1	<	ICT mark of Student 2
70	<	85

Control Unit - CU

- The control unit communicates between the hardware connected to the computer and controls them
- Controls input and output data to ensure that data is sent to right place at the right time



Memory Registers – MR

- Stores data and instructions that are being used by the CPU for a short period (Temporarily).
- After processing is done data need to be send to output device or storing device, until they send to relevant location data is stored inside memory registers
- Storage capacity is very low
- Data access speed is very fast

Speed of the CPU

- The number of instructions executed in a given time (milliseconds) by the CPU is known as “Speed of the CPU”
- This is also known as “Clock Speed”
- To measure the speed of the CPU
  - megahertz (MHz)
  - gigahertz (GHz)

Speed of the CPU

Smallest	=	1 Hertz (Hz)
1000 Hz	=	1 kilohertz (KHz)
1000 KHz	=	1 Megahertz (MHz)
1000 MHz	=	1 Gigahertz (GHz)