Computer

- **COMPUTER** stands for Common Operating Machine Purposely Used for Technological and Educational Research.
- A **computer** is a machine or device that performs processes, calculations and operations based on instructions provided by a software or hardware program. It has the ability to accept data (input), process it, and then produce outputs.

Block diagram of computer

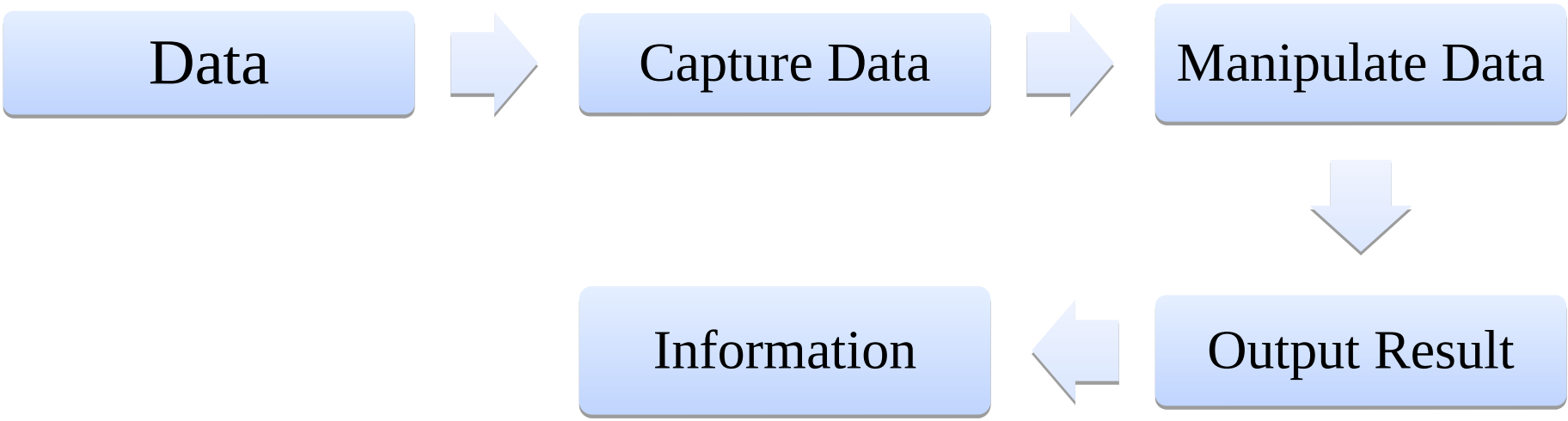
Input

CPU
ALU
CU
Registers

Output

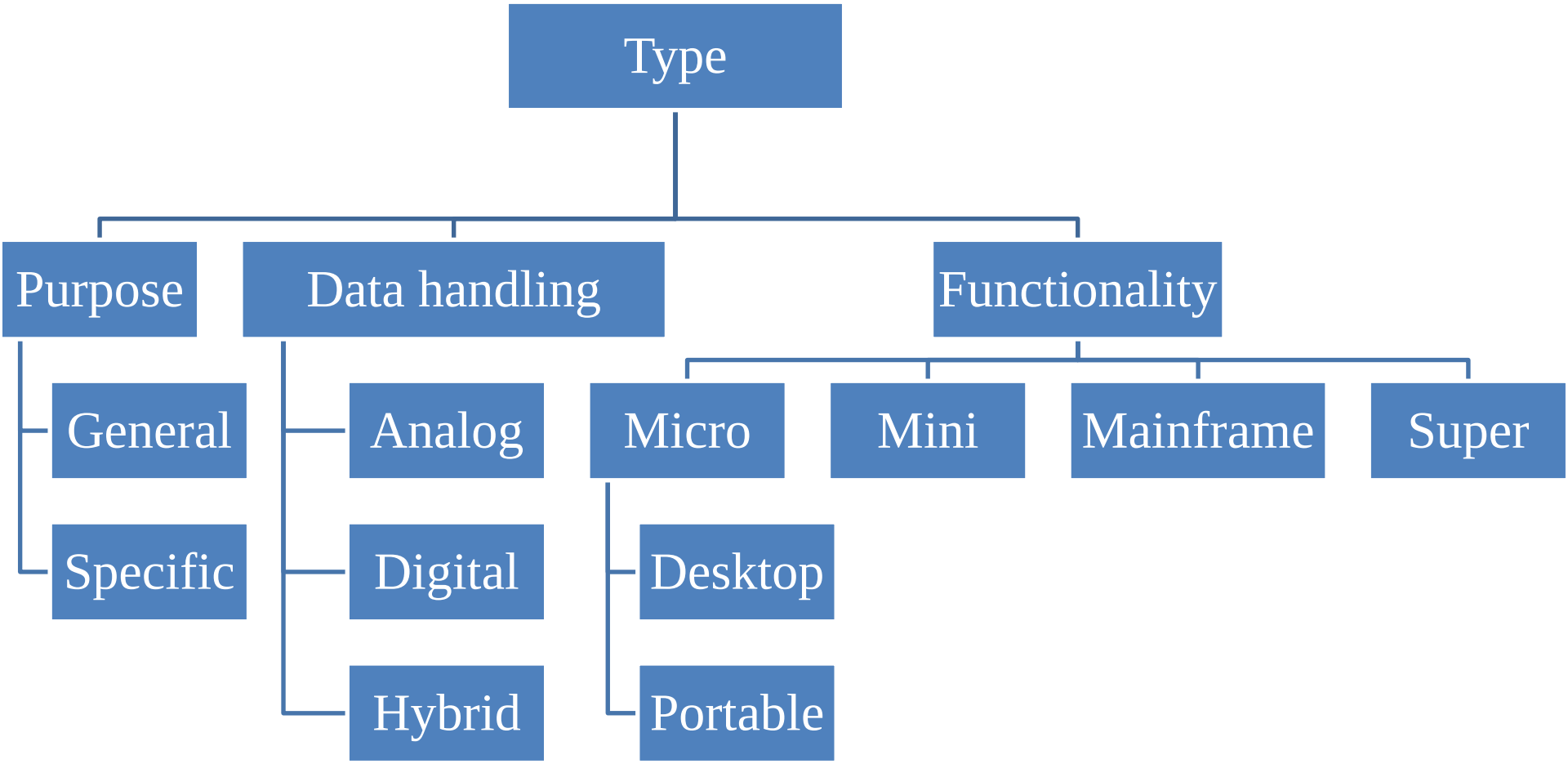
Memory

Data Processing



Data is raw material used as input and information is processed data obtained as output of data processing

Computer : Classification



Generation of computer

First
(Vacuum
tabes)

Second
(Transistors)

Third
(Integrated
Circuits)

Fourth
(Microprocess
ors)

Fifth
(Artificial
Intelligence)

1st generation

- 1940-56
- Vaccum tube technology
- Computation time-miliseconds
- Size-very large
- Memory(temporary)-magnetic drums
- Input as punch cards & paper tapes
- Output as printouts
- Non portable
- Consumed & generate a lot of energy (so use AC)
- Eg-ENIAC & UNIVAC

2nd generation

- 1957 to 1963
- Transistors technology used
- Computation time-microseconds
- Size-compared to 1st gen. is small
- Support assembly(machine) language
- Primary(magnetic cores)& secondary(magnetic disk) memory
- Input as punch cards
- Output as printouts
- Eg-IBM 1620

3rd generation

- 1964 to 1971
- IC(integrated circuit)
- Computation times-nanoseconds
- Small size, portable,fast,costly
- Support high level language
- Input as keyboard
- Output as monitors
- Eg-IBM 360 series

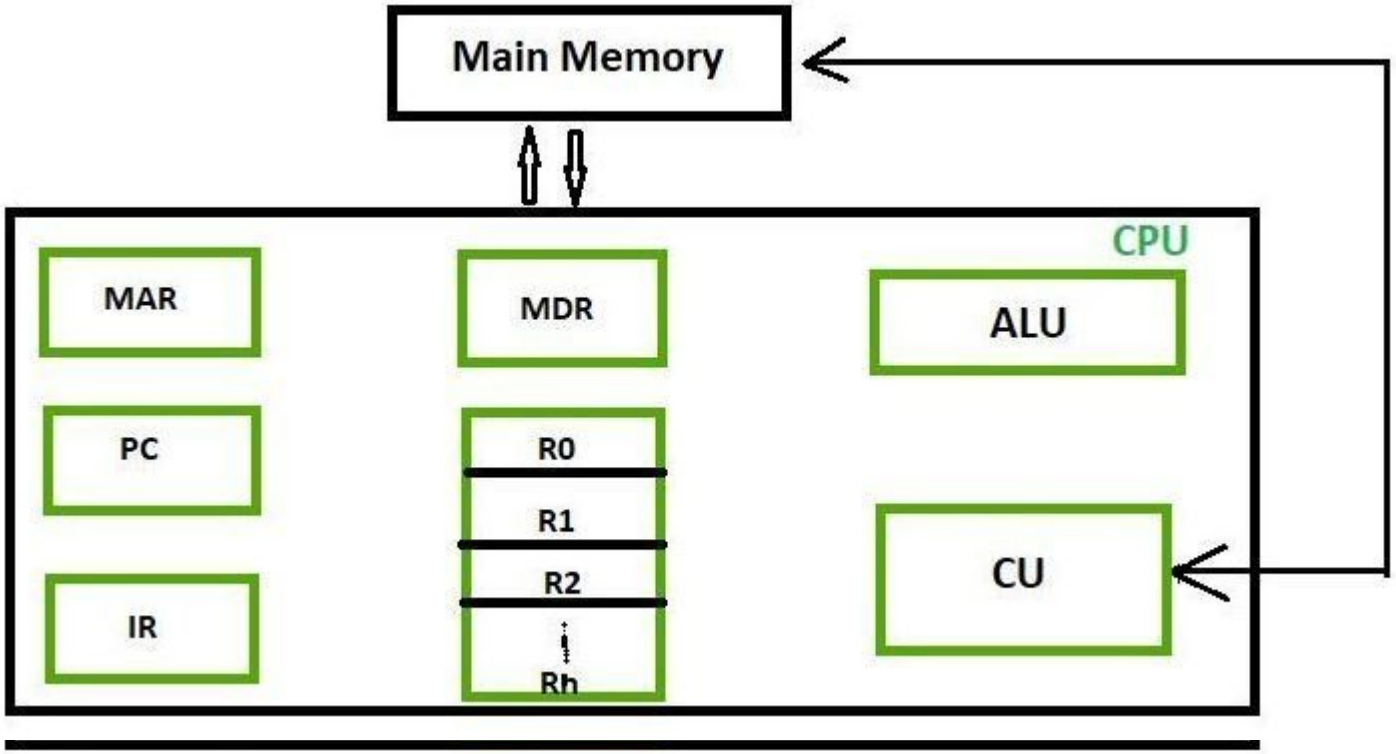
4th generations

- 1972 to present
- Microprocessor tech. used
- Cheaper, portable,relaible,small size,no AC
- Use internet
- Eg-CRAY 1

5th generations

- Ppresent & beyond
- AI(artificial intelligence)
- Natural language processing
- Eg-desktop,laptop

CPU registers



Registers

- A group of flip flops which store a word
- General purpose register- hold & store frequently used data
- Program counter- is a set of instruction stored in memory
- Instruction register- hold instruction that currently being executed
- Memory data register(also knw as memory buffer register)-perfrom read & write both operation
- Memory address register- hold the address of current data