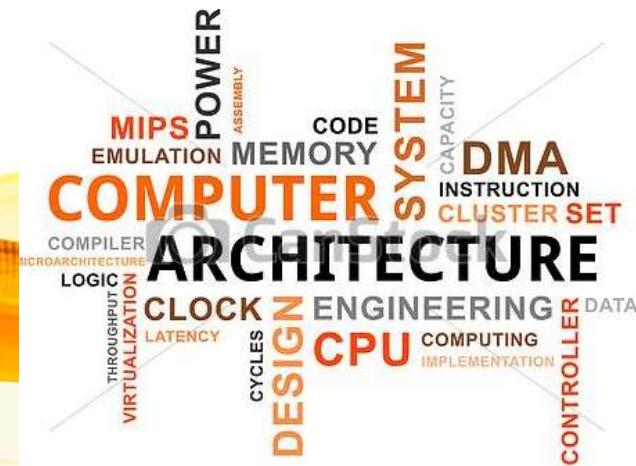


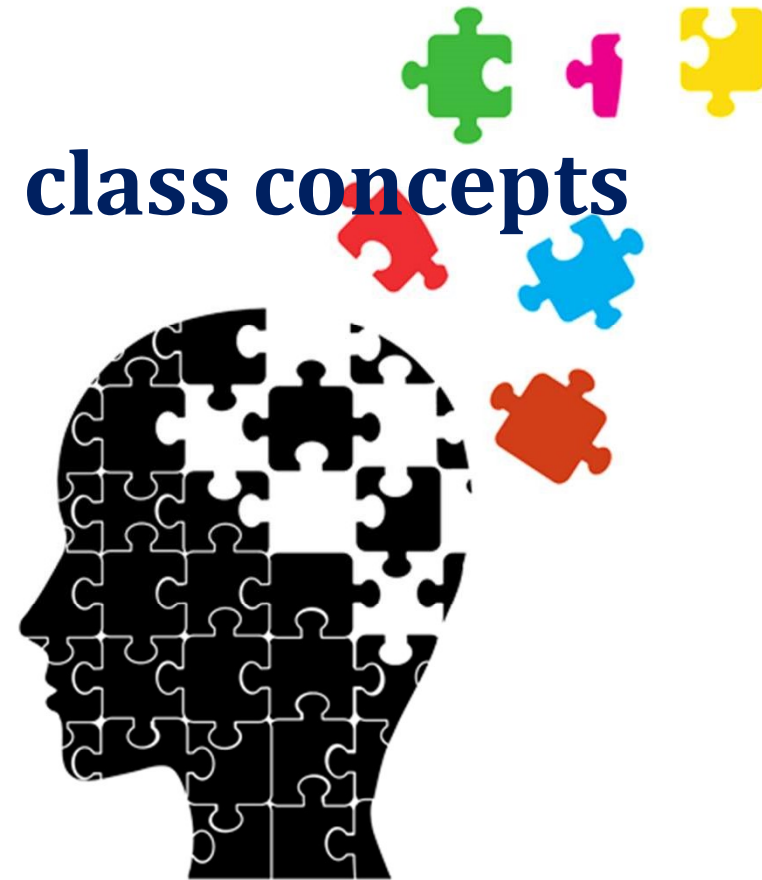
UNIT I

BASIC STRUCTURE OF COMPUTERS

Functional units – Basic operational concepts – Bus Structures – Performance – Memory locations and addresses – Memory operations – Instruction and Instruction sequencing – Addressing modes – Assembly language – Case study : RISC and CISC Architecture.

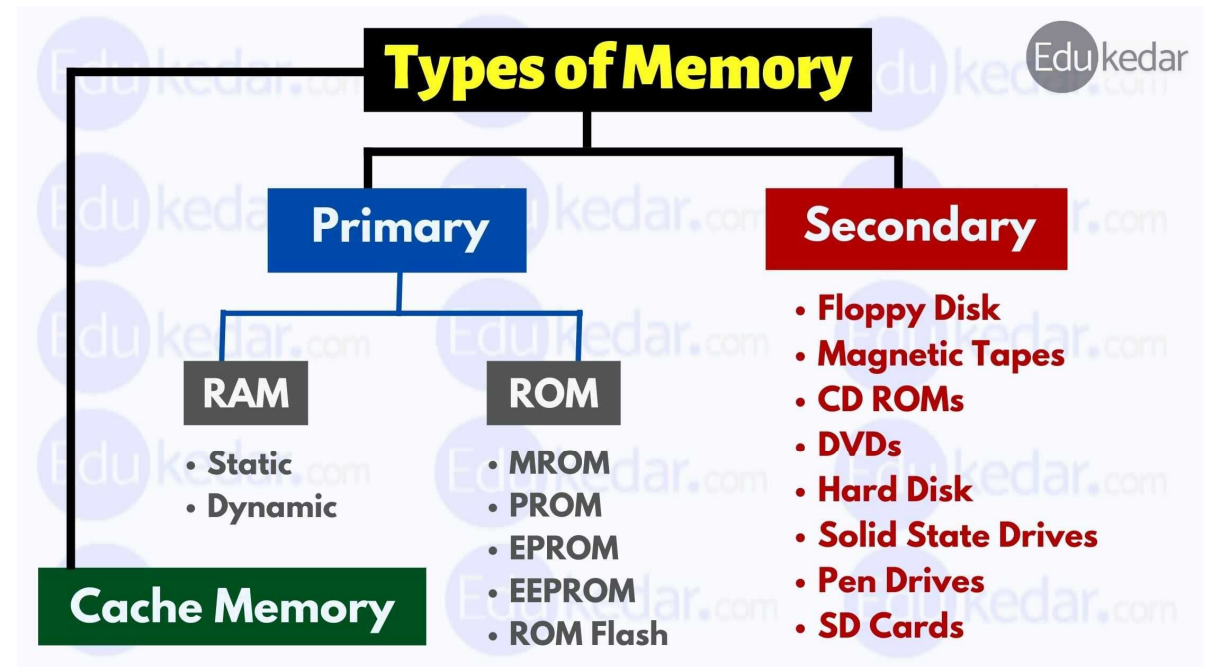
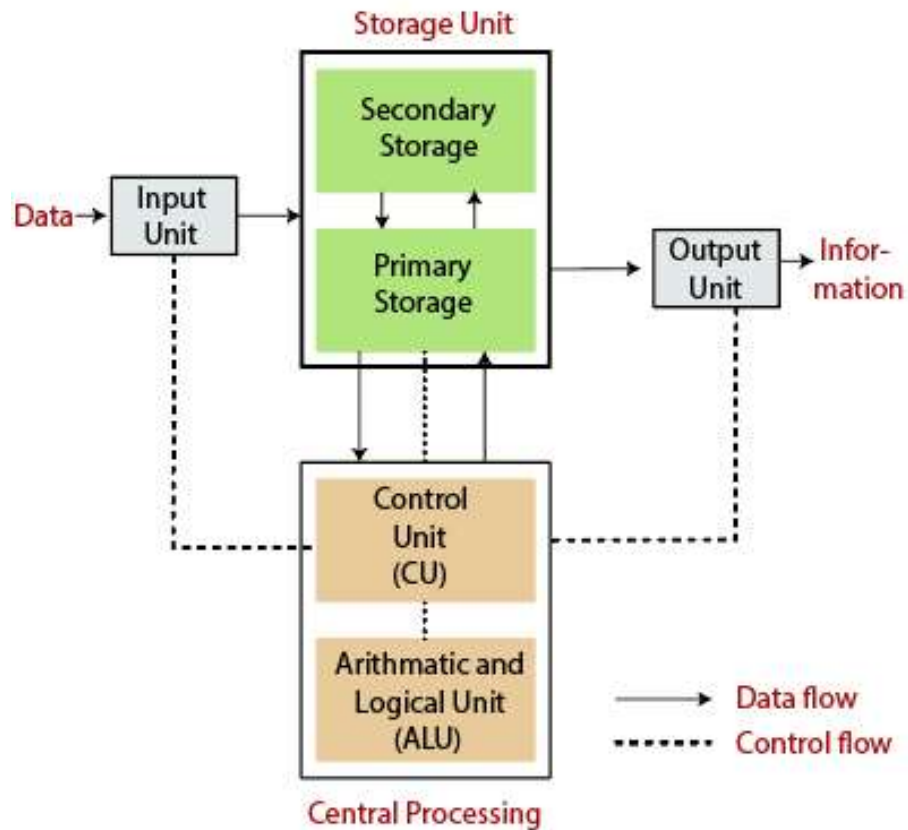


Recall the previous class concepts



Functional Unit

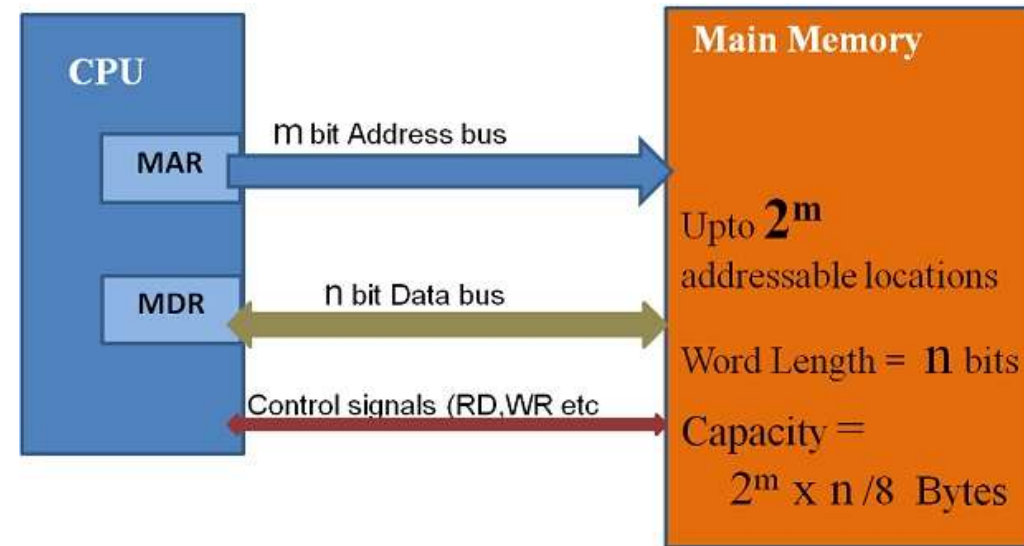
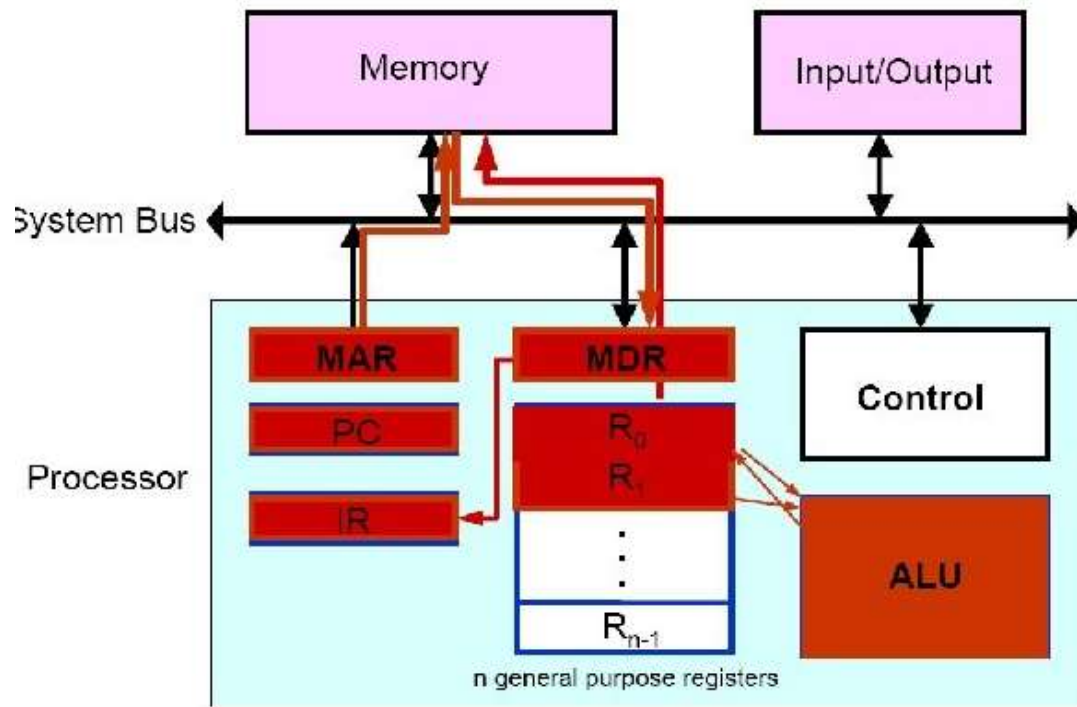
Block diagram of Computer



Analysing how processor and memory are connected

- Processors have various registers to perform various functions
- **Program Counter** - It contains the memory address of next instruction to be fetched.
- **Instruction Register** - It holds the instruction which is currently being executed
- **MDR** - It facilitates communication with memory. It contains the data to be written into or read out of the addressed location.
- **MAR** - It holds the address of the location that is to be accessed
n general purpose registers that is R0 to Rn-1

Connection between Processor & Memory



Basic Operational Concepts

- Instruction consists of 2 parts

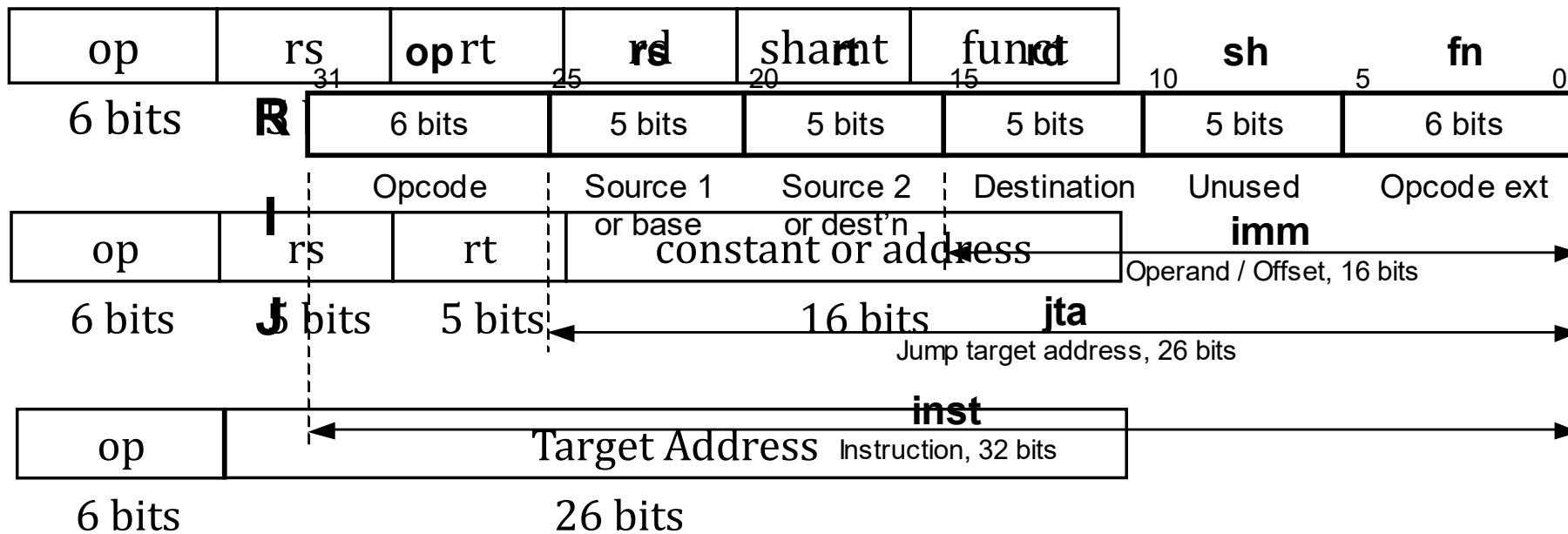


- Example

ADD LOCA, R0

Load LOCA, R1
Add R1, R0

Instructions Format



Translating Arm Assembly Instructions into Machine Instructions

op	rs	rt	rd	shamt	funct
6 bits	5 bits	5 bits	5 bits	5 bits	6 bits

add \$t0, \$s1, \$s2

special	\$s1	\$s2	\$t0	0	add
0	17	18	8	0	32
000000	10001	10010	01000	00000	100000

$$00000010001100100100000000100000_2 = 02324020_{16}$$

Operating System





sns
INSTITUTIONS



Thank You