Dr.SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE

(AUTONOMOUS)
COIMBATORE-641049
Accredited by NAAC(Cycle III) with "A+" Grade
Recognised by UGC, Approved by AICTE, New Delhi and
Affiliated to Bharathiar University, Coimbatore.

DEPARTMENT OF COMPUTER SCIENCE

Computer System Architecture

I YEAR - I SEM

UNIT 1 – Data Representation

Agenda

- What is Computer?
- Major Computer Components
- Computer Components Interconnection
- Data Representation
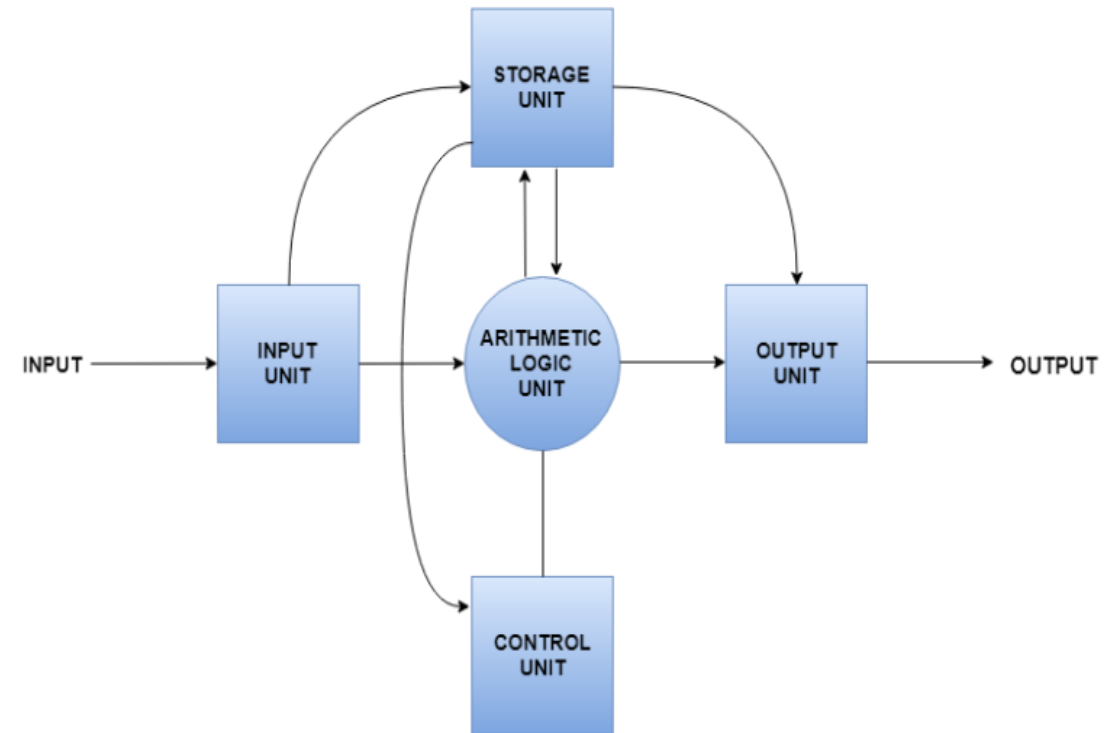- Bits, Bytes, and Words

What is Computer?

A data processing machine capable of performing computations and making logical decisions very fast. Consists of hardware such as keyboard, screen, mouse, disks, memory, CD-ROM, and processing units. A program (software) is a set of instructions written in a computer language that runs on a computer.
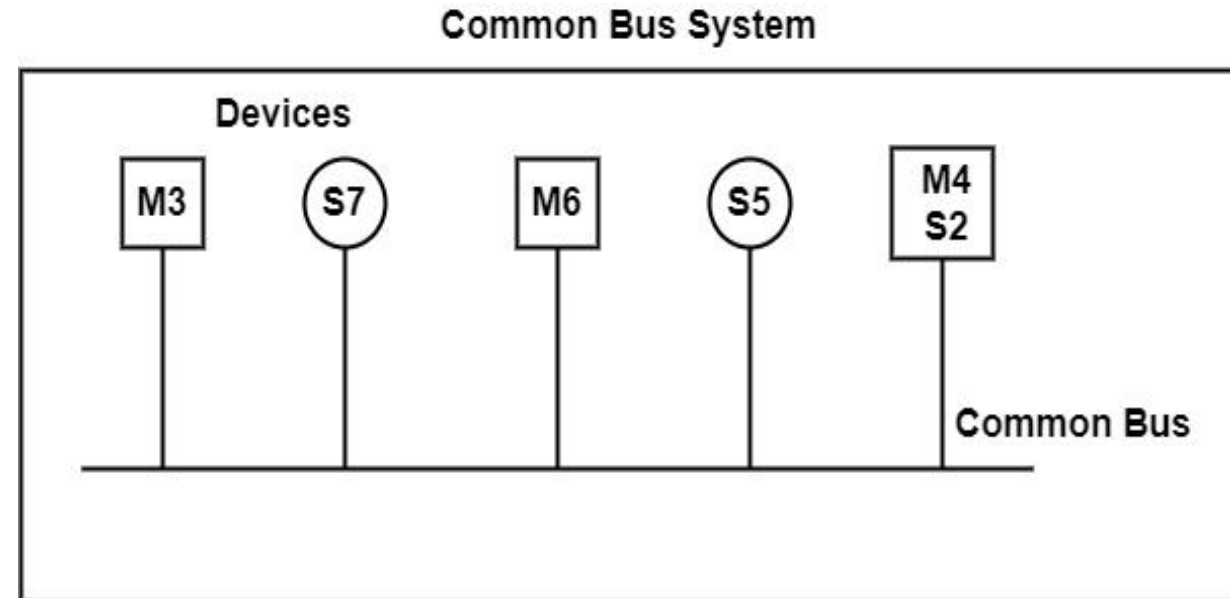
Major Computer Components

- Input / Output (I/O) Unit

- Memory Unit)

- Arithmetic and Logic Unit (ALU)

- Central Processing Unit (CPU)

Major Computer Components Interaction
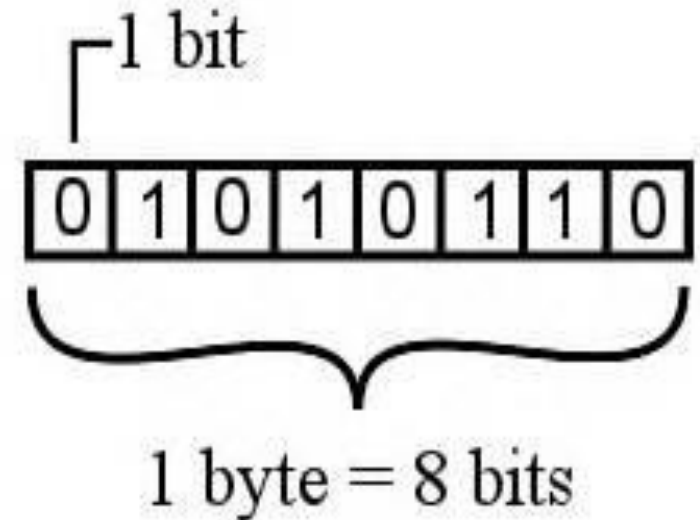
- Data Bus

- Address Bus

- Control Bus

Common Bus System

Devices

M3 S7 M6 S5 M4 S2

Common Bus

Data Representation

Data Types

- Text

- Number

- Image

- Audio

- Video

Bits, Bytes, Words

- A bit is a single binary digit (a 1 or 0).

- A byte is 8 bits

- A word is 32 bits (that is, 4 bytes)

- Long word = 8 bytes = 64 bits

- Quad word = 16 bytes = 128 bits

┌─1 bit

| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |

1 byte = 8 bits

Number Systems

- Decimal (0-9)

- Binary (0 or 1)

- Octal (0-7)

- Hexadecimal. (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F)

Assessment

- Tell about components of Computer?

- What is Number system & Tell about it types with example?

- Define Bits, Bytes

- What is Bus?

Thank You