

Introduction

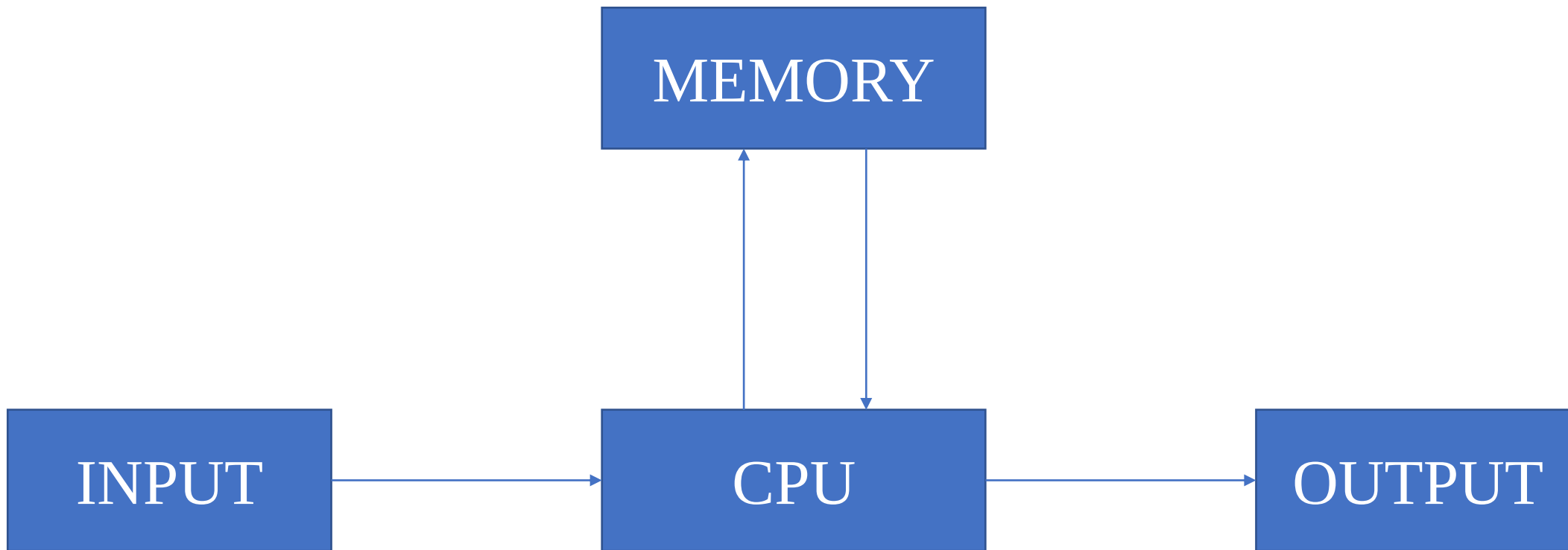
By

Mrs. R. ANGELIN MONICA
Assistant Professor

Introduction To Microcomputer:

Any digital computer system as basically four functional blocks. They are

- Input Unit
- CPU
- Memory Unit
- Output Unit



CPU:

The Central Processing Unit is the heart of computer system. It performs all arithmetic and logic functions initiated by program and controls the overall system operation.

Input Unit:

The input unit is used to information and commands to the CPU for processing.

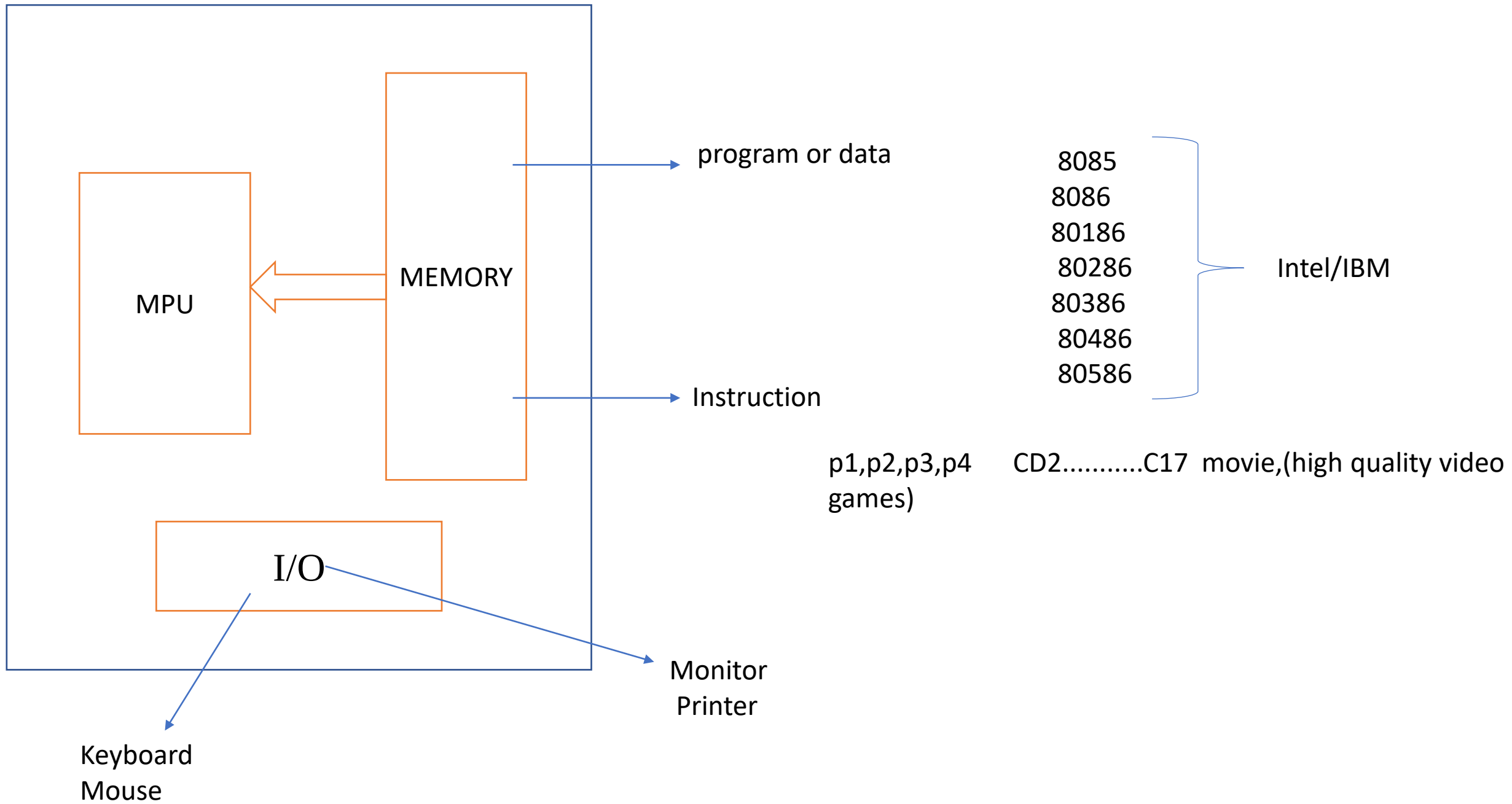
Memory Unit:

The memory unit of the computer is used to store information. The memory divided as

1. **Internal memory-----ROM and RAM**
2. **External memory**

Output Unit:

The results are taken out through the output unit.



Instruction Cycle:

1.Fetch

2.Decode

3.Execute

a=b+c ;HLL $\longrightarrow$ Compiler

ADD B,C ;ASM $\longrightarrow$ Assembler

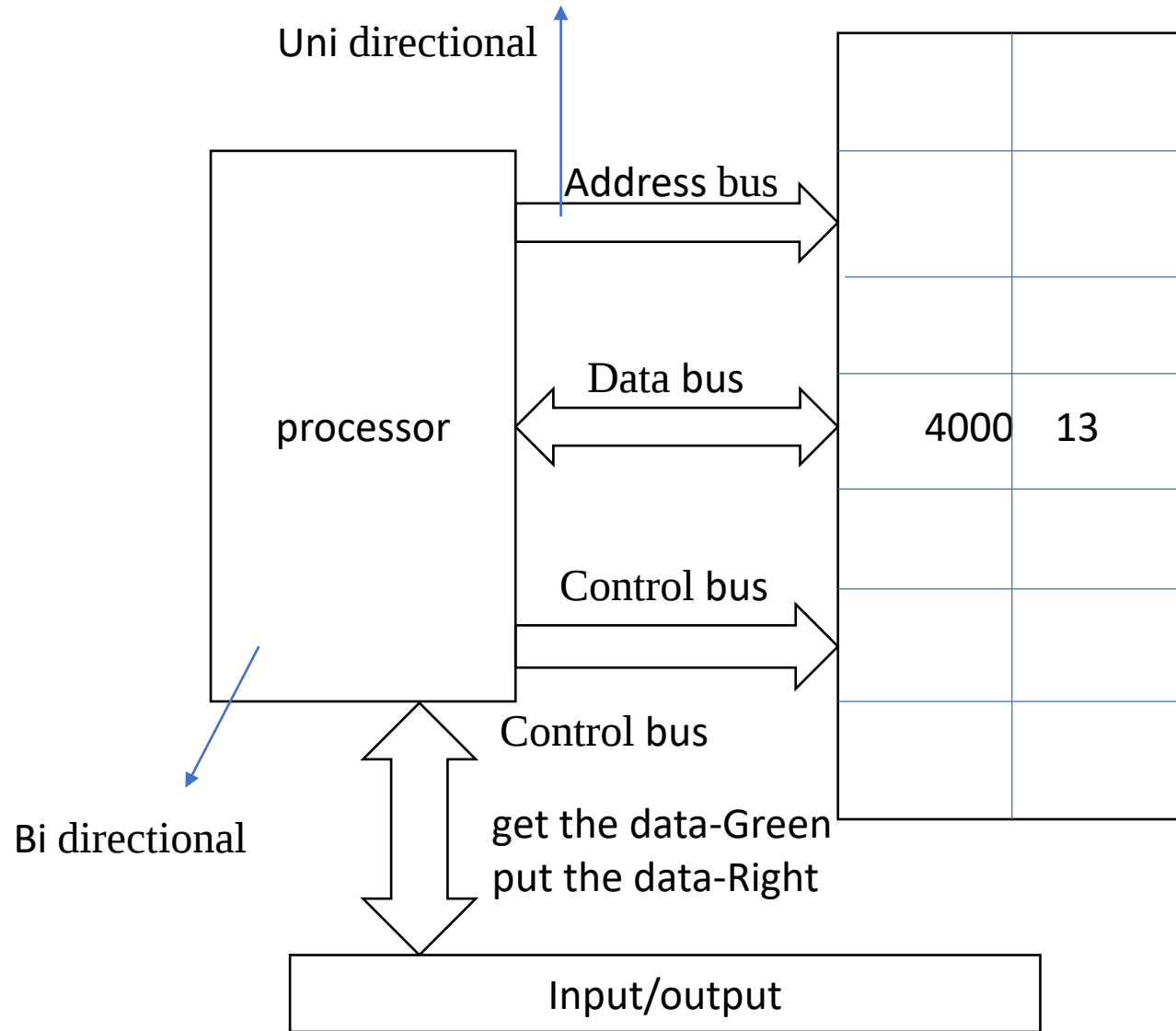
0110 1011 ;LLL/Machine/Binary/OP code

SYSTEM BUS:

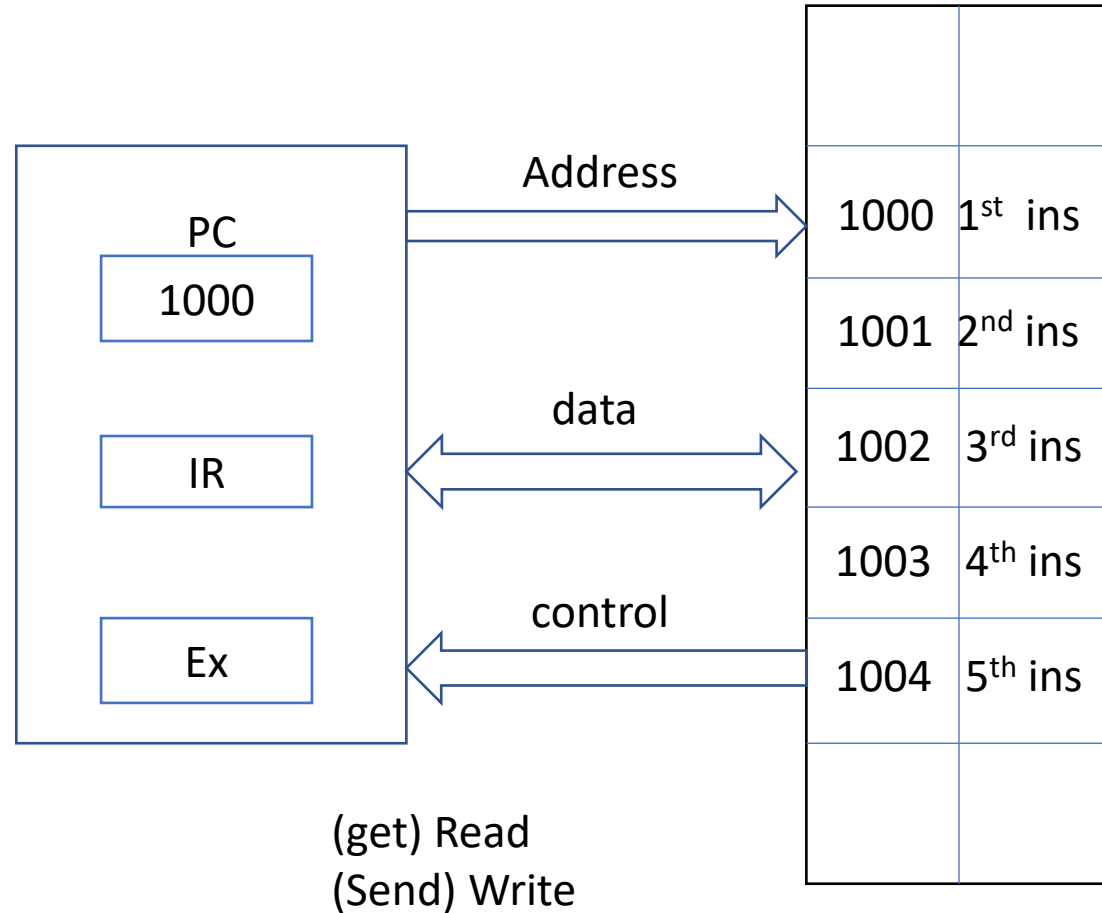
A various input and output units and memory are connected to the CPU by a group of lines called a **bus**. A bus is a set of conductors carrying signals. The system bus contains **three** buses.

- Address Bus
- Data Bus
- Control Bus

System Bus Structure



Process Execution



move B,C---> Assembly language

Assembly Language Program:

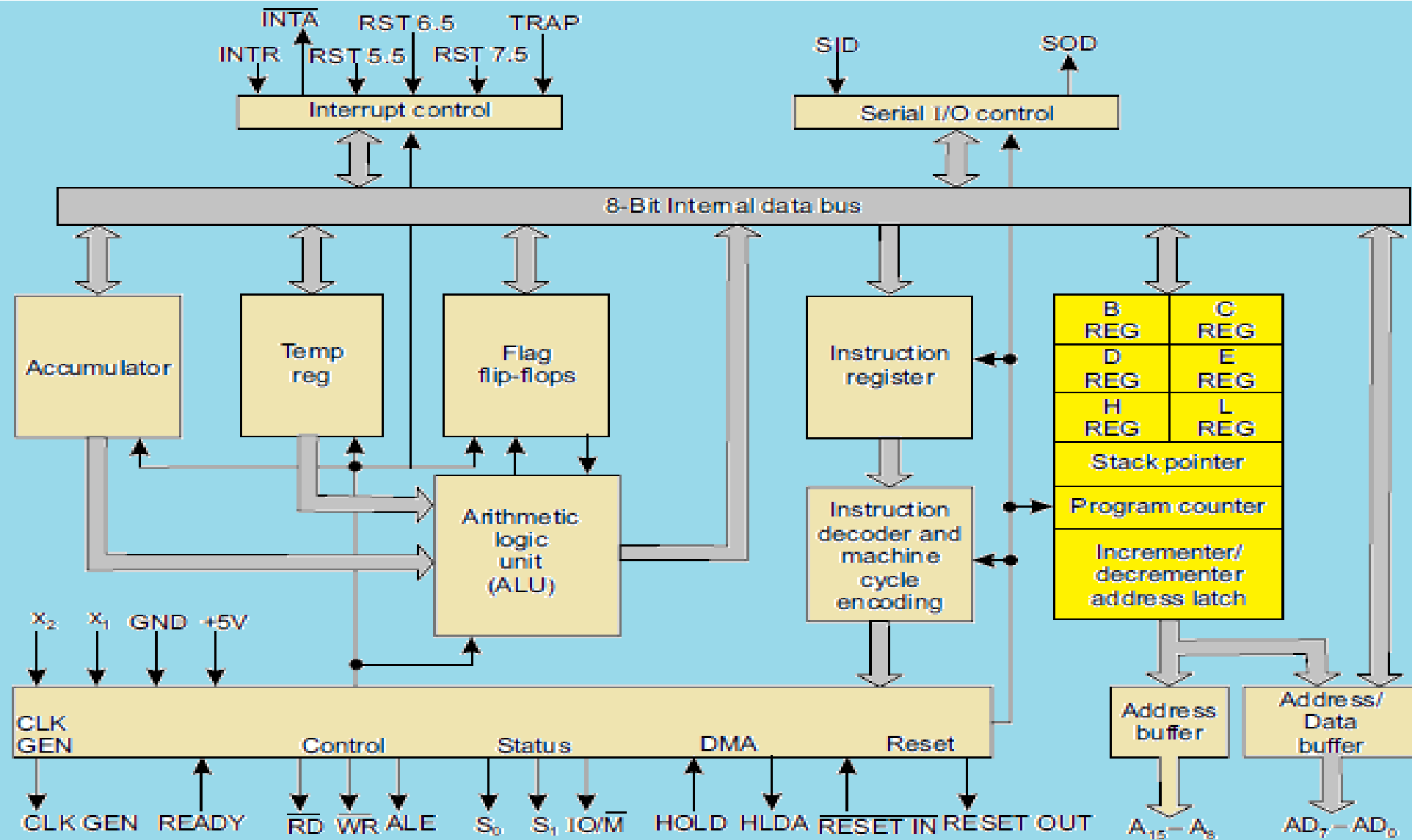
8-bit addition

opcode

4000 3A	LDA	4050	4050:02	} input
4001 50			4051:03	
4002 40	Move	B,A		
4003 40			4052:05	output
4004 47	LDA	4051		
4005 40			A=02(4050)	
4006 80	ADD	B	B=02	
4007 3A			A=03(4051)	
4008 51	STA	4052	A+B=03+02	
4009 52			A=05(4052)	
400A 40	HLT			

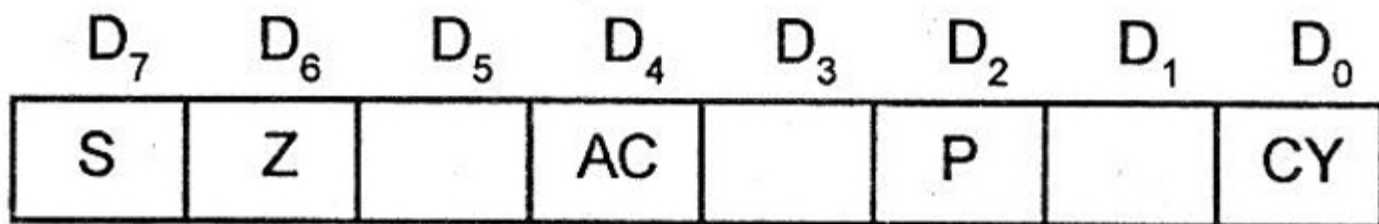
ARCHITECTURE OF 8085

- I. Register Array
- II. Program Counter(PC)
- III. Stack Pointer
- IV. Increment/Decrement
- V. Accumulator
- VI. Temporary Register
- VII. Status Register



Architecture of 8085

FLAG REGISTER OF 8085



Flag is an 8-bit register containing 5 1-bit flags:

Sign - set if the most significant bit of the result is set.

Zero - set if the result is zero.

Auxiliary carry - set if there was a carry out from bit 3 to bit 4 of the result.

Parity - set if the parity (the number of set bits in the result) is even.

Carry - set if there was a carry during addition, or borrow during subtraction/comparison.