Aim To study the microprocessor 8085

(a) General purpose register:→

It is an 8-bit register i.e B, C, D, E, H, L. The Cambination of 8-bit register is known as register pair, which can hold 16 bit data. The HL pair is used to act as memory pointer is accessible to program.

(b) Accumulator:→

It is an 8-bit register which hold one of the data to be procesed by ALU and stored the result of the operation.

(c) Program Counter(PC):→

It is a 16 bit pointer which maintain the address of a byte entered to line stack.

(d) Stack pointer (Sp):→

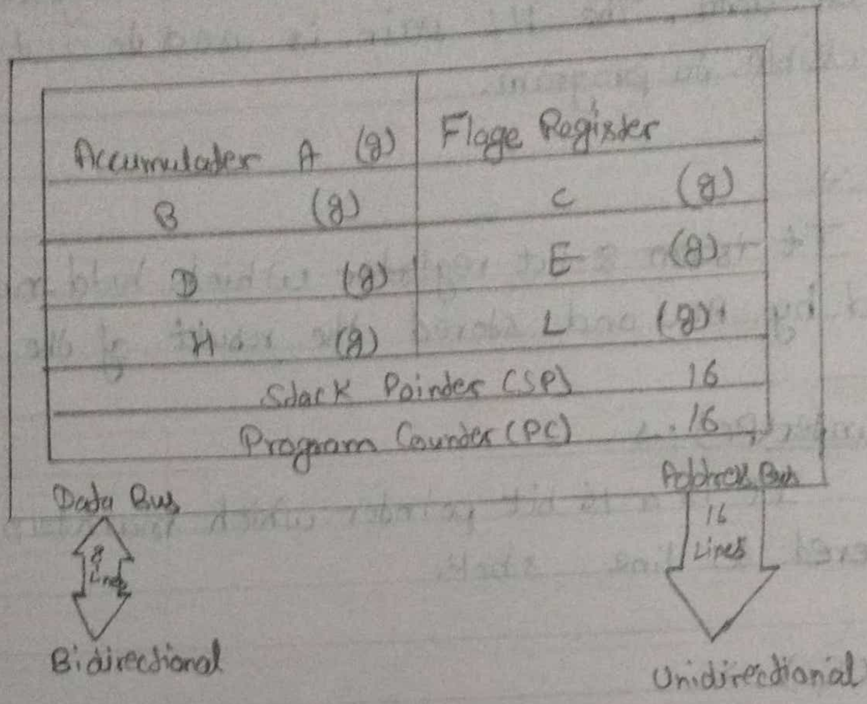
It is a 16-bit special purpose register which is used to hold line memory address for line next instruction to be executed.

(e) Arithmetic and logical unit:→

It carries out arithmetic and logical operation by 8 bit address it uses the accumulator content as input the ALU result is stored back into accumulator.

(f) Temporary register:→

It is an 8-bit register associated with ALU hold data, entering onoperation, used by the microprocessor and not accessible to programs



Accumulator A (8)	Flage Register	
B (8)	C	(8)
D (8)	E	(8)
H (8)	L	(8)
Stack Pointer (SP)		16
Program Counter (PC)		16

microprocess 8085 registers

(g) Flags :->

Flag register is a group of fire, individual flip-flop line content of line flag register will change after execution of arithmetic and logic operation. The line states flags are

i) Carry flag (C) ii) Parity flag (P) iii) zero flag (Z)
iv) Auxilary carry flag (AC) v) sign flag (S).

(h) Timing and control unit :->

Synchronous all microprocess, operation with the clock and generator and control signal from it necessary to communicate between controller and peripherals.

(i) Instruction register and decoder :->

Instruction is fetched from line memory and stored in line instruction register decoder the stored information.

(j) Register Array :->

These are used to store 8-bit data during execution of some instruction.

In Enter Program into Trainer kit

1. Press 'RESET' Key
2. Sub (Key processor represent address field).
3. Enter the address (16 bit) and digit in hex press 'NEXT' Key.
4. Enter the data.
5. Again press 'NEXT'.
6. Again after taking the program, are use HLT instruction its Hex code.
7. Press 'NEXT'.

Result :- Thus 8085 microprocesser was studied successfully.

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output:-

Address (Hex)	Address	Data
2000	8192	53

Date 11/5/2021

Expt. No. 02 Page No. 03

Aim:- Store 8-bit data in memory.

Algorithm:→

1) Store data in the Accumulator
2) Copy accumulator content at a particular location.
3) terminate the program.

Program:→

```
MVI A, 35H
STA 2000H
hlt.
```

Result:- 8-bit data stored in memory successfully.

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output:-

Address (Hex)	Adress	Data
2000	8 192	5
2001	8193	4

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Aim:- Write a program to swap two block of data stored in memory

Algorithm:-

1) load data in accumulator.
2) Copy / Move accumulator data into general purpos register(B).
3) load accumulator with next data.
4) store accumalator data to the first data location / address.
5) ~~stored~~ Move data from B register to accumalator.
6) Store accumalator data to the second data location/addres
7) terminate the program.

Program:→

```
LDA 2000H
MOV B, A
LDA 2001H
STA 2000H
MOV A, B
STA 2001H
hlt.
```

Result:- successfully swap two block of data stored in memory.

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output:-

Address (Hex)	Address	data
0002	2	4
0003	3	5

Result in Accumalater(A)= 9.

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Expt. No. 04

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Aim:- Adding 8-bit data.

Algorithm:-

1) Load the first data in accumalator
2) Move data into register B from accumalator.
3) Load the next data and move into register c from c.
4) Now add the data in B to (A) accumalator
5) Terminate program.

Programme

```
LDA 0002H
MOV B, A
LDA 0003H
MOV C, A
ADD B
hlt.
```

Result:- Addision of 8-bit data done succesfully

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output:-

Address (Hex)	Address	data
0002	2	34
0003	3	12
0004	4	22
0005	5	11
0006	6	56
0007	7	23

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Aim:- Addition of 16-bit data.

Algorithm:-

1) Load first 16-bit number in HL
2) Save First 16-bit number in DE
3) Load second 16-bit number in HL
4) load lower bytes of first number in accumlater.
5) Add lower bytes of second number and save in register L
6) Add the higher bytes of first and second number as in step 4 and 5.
7) save the result in register H.
8) store result at a memory location.
9) terminate the program.

Program:-

```
LHLD 0002H
XCHG
LHLD 0004H
MOV A,E
ADD L
MOV L,A
MOV A,D
ADC H
MOV H,A
SHLD 0006H
hlt
```

Result:- Addition of 16-bit data done successfully.

Teacher's Signature