

SMALLEST NUMBER IN AN ARRAY

EXP NO: 11

AIM: To find the smallest number from an array using 8085 processor.

ALGORITHM:

- 1) Load the address of the first element of the array in the HL pair.
- 2) Move the count to B register.
- 3) Increment the pointer.
- 4) Get the first data in A register.
- 5) Decrement the count.
- 6) Increment the pointer.
- 7) Compare the content of memory addressed by the HL pair with that of A register.
- 8) If carry=1, go to step 10 or if carry=0 go to step 9
- 9) Move the content of memory addressed by HL to A register.
- 10) Decrement the count.

PROGRAM:

```
LXI H,2050

MOV C,M

DCR C

INX H

MOV A,M

LOOP1: INX H

CMP M

JC LOOP

MOV A,M

LOOP: DCR C

JNZ LOOP1

STA 2058

HLT
```

INPUT:

Start	2050	OK
Address (Hex)	Address	Data
0802	2050	5
0803	2051	12
0804	2052	34
0805	2053	9
0806	2054	51
0807	2055	19

OUTPUT:

Registers

A 33

BC 00 00

DE 00 00

HL 08 07

PSW 00 00

PC 42 19

SP FF FF

Int-Reg 00

Flag

S 0

Z 1

AC 0

P 1

C 0

Decimal - Hex Conversion

Decimal

0

Hex

0

To Hex

To Dec

I/O Ports

0

-

+

00

Update Port Value

Memory

0

-

+

00

Update Memory

Load me at

1 <Program title>

2

3 jmp start

4

5 rdata

6

7

8

9 rcode

10 start: nop

11 LXI H,2050

12 MOV C,M

13 DCR C

14 INX H

15 MOV A,M

16 LOOP1: INX H

17 CMP M

18 JNC LOOP

19 MOV A,M

20 LOOP: DCR C

21 JNE LOOP1

22 STA 2058

23 hit

Data

Stack

KeyPad

Memory

I/O Ports

Start 2050

OK

Address (Hex)	Address	Data
0802	2050	5
0803	2051	12
0804	2052	34
0805	2053	9
0806	2054	51
0807	2055	19
0808	2056	0
0809	2057	0
080A	2058	51
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0

Line No

Assembler Message

0 Program assembled successfully

Simulator: Idle

29°C

Near record

Search

ENG IN

09:02

17-10-2023

RESULT: Thus the program was executed successfully using 8085 processor simulator.