

## **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 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 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 & OUTPUT**

Start	2050	
Address (Hex)	Address	Data
0802	2050	4
0803	2051	20
0804	2052	32
0805	2053	51
0806	2054	42
0807	2055	0
0808	2056	0
0809	2057	0
080A	2058	20
080B	2059	0
080C	2060	0
080D	2061	0

File

Reset

Assembler

Debug

Help

Registers

A

14

BC

00

00

DE

00

18

HL

08

06

PSW

00

00

PC

42

15

SP

FF

FF

Int-Reg

00

Flag

S

0

Z

1

AC

0

P

1

C

1

Decimal - Hex Conversion

Decimal

Hex

0

0

→To Hex

←To Dec

I/O Ports

0

-

+

00

Update Port Value

Memory

0

-

+

00

Update Memory

Load me at

1

LXI

H,

2050

2

MOV

C,

M

3

DCR

C

4

INX

H

5

MOV

A,

M

6

LOOP1:

INX

H

7

CMP

M

8

JC

LOOP

9

MOV

A,

M

10

LOOP:

DCR

C

11

JNZ

LOOP1

12

STA

2058

13

HLT

Data

Stack

Keypad

Memory

I/O Ports

Start

2050

OK

Address (Hex)

Address

Data

0802

2050

4

0803

2051

20

0804

2052

32

0805

2053

51

0806

2054

42

0807

2055

0

0808

2056

0

0809

2057

0

080A

2058

20

080B

2059

0

080C

2060

0

080D

2061

0

Line No

Assembler Message

0

Program assembled successfully

Simulator: Idle

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