

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:

Data		
Stack		
KeyPad		
Memory		
I/O Ports		
Start	2050	OK
Address (Hex)	Address	Data
0802	2050	7
0803	2051	20
0804	2052	40
0805	2053	60
0806	2054	80
0807	2055	100
0808	2056	10
0809	2057	90
080A	2058	10
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0
0810	2064	0
Line No	Assembler Message	
0	Program assembled successfully	

OUTPUT:

The screenshot displays the 8085 processor simulator interface. The top menu bar includes File, Reset, Assembler, Debug, and Help. The main window is divided into several sections:

- Registers:** A table showing the status of 8085 registers. The Accumulator (A) contains 0A. The Status (S) flag is 0. The Zero (Z) flag is 1. The Carry (C) flag is 1.
- Decimal - Hex Conversion:** A section for converting between decimal and hexadecimal values. Both fields are currently set to 0.
- I/O Ports:** A section for I/O operations. The port value is 00.
- Memory:** A section for memory operations. The memory address is 00.
- Assembly Code:** A list of assembly instructions with line numbers. The code is as follows:

```
1 ;<Program title>
2
3
4 jmp start
5
6 ;data
7
8 ;code
9 start: nop
10
11 LXI H,2050
12
13 MOV C,M
14
15 DCR C
16
17 INX H
18
19 MOV A,M
20
21 LOOP1: INX H
22
23 CMP M
24
25 JC LOOP2
26
27 MOV A,M
28
29 LOOP: DCR C
30
31 JNZ LOOP1
32
33 STA 2058
34
35 HLT
```
- Memory Dump:** A table showing the memory dump starting at address 2050. The data is as follows:

Address (Hex)	Address	Data
0802	2050	7
0803	2051	20
0804	2052	40
0805	2053	60
0806	2054	80
0807	2055	100
0808	2056	10
0809	2057	90
080A	2058	10
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0
0810	2064	0
- Assembler Message:** A message box showing the result of the assembly process: "Program assembled successfully".

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