

ASCENDING ORDER

EXP NO: 12

AIM: To compute ascending order of an array using 8085 processor.

ALGORITHM:

- 1) Initialize HL pair as memory pointer.
- 2) Get the count at memory and load it into C register
- 3) Copy it in D register (for bubble sort (N-1)) times required.
- 4) Get the first value in A register.
- 5) Compare it with the value at next location.
- 6) If they are out of order, exchange the contents of A register and memory.
- 7) Decrement D register content by 1
- 8) Repeat step 5 and 7 till the value in D register become zero.
- 9) Decrement the C register content by 1.
- 10) Repeat steps 3 to 9 till the value in C register becomes zero.

PROGRAM:

```
LOOP: LXI H,3500
MVI D,00
MVI C,05
LOOP1: MOV A,M
INX H
CMP M
JC LOOP2
MOV B,M
MOV M,A
DCX H
MOV M,B
INX H
MVI D,01
LOOP2: DCR C
JNZ LOOP1
MOV A,D
RRC
JC LOOP
HLT
```

INPUT & OUTPUT

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers Flag

Register	Value	Flag	Value
A	00	S	0
BC	00 00	Z	1
DE	00 00	AC	0
HL	0D B1	P	1
PSW	00 00	C	0
PC	42 1E		
SP	FF FF		
Int-Reg	00		

Decimal - Hex Conversion

Decimal	Hex
0	0

I/O Ports

Port	Value
0	- + 00

Memory

Address	Value
0	- + 00

Load me at:

```

1  LOOP: LXI H, 3500
2  MVI D, 00
3  MVI C, 05
4  LOOP1: MOV A, M
5  INK H
6  CND M
7  JC LOOP2
8  MOV B, M
9  MOV M, A
10 DCR H
11 MOV M, B
12 INK H
13 MVI D, 01
14 LOOP2: DCR C
15 JNZ LOOP1
16 MOV A, D
17 RRC
18 JC LOOP
19 HLR

```

Start 3500

Address (Hex)	Address	Data
0DAC	3500	0
0DAD	3501	2
0DAE	3502	5
0DAF	3503	19
0DB0	3504	54
0DB1	3505	58
0DB2	3506	0
0DB3	3507	0
0DB4	3508	0
0DB5	3509	0
0DB6	3510	0
0DB7	3511	0
0DB8	3512	0
0DB9	3513	0

Line No Assembler Message

0 Program assembled successfully

Simulator: Idle

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