ASCENDING ORDER

EXP NO: 12

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

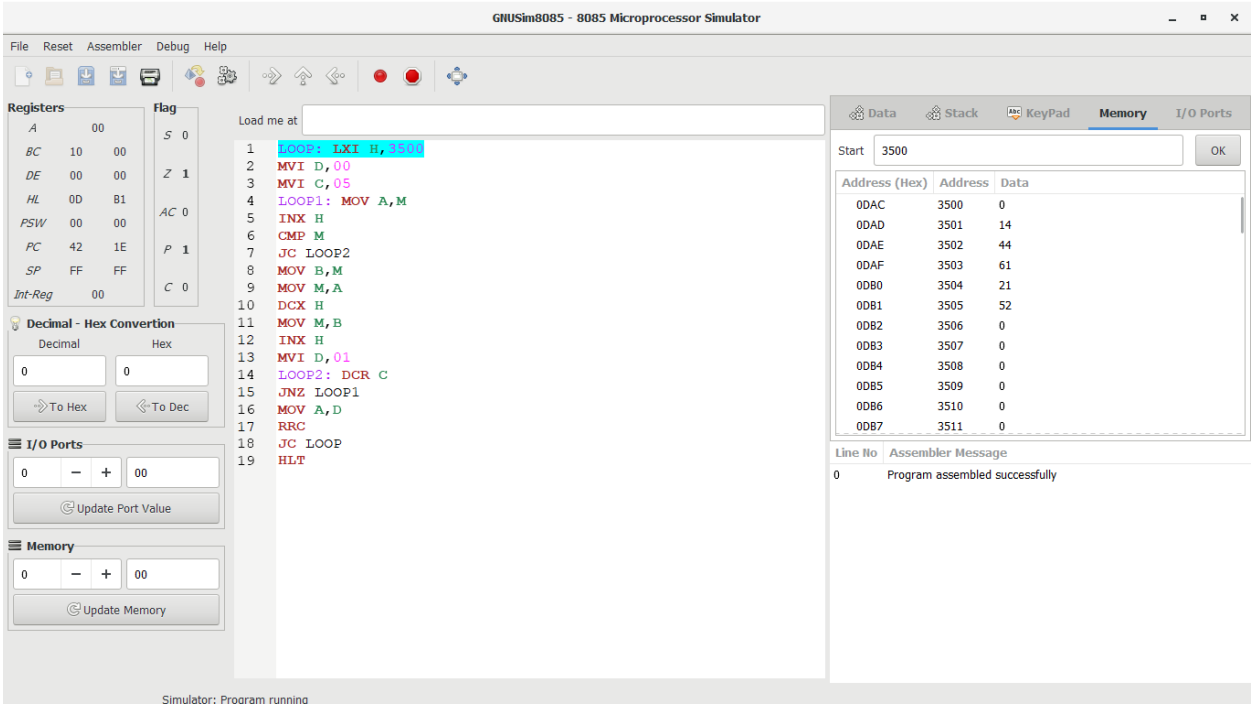
ALGORITHM:

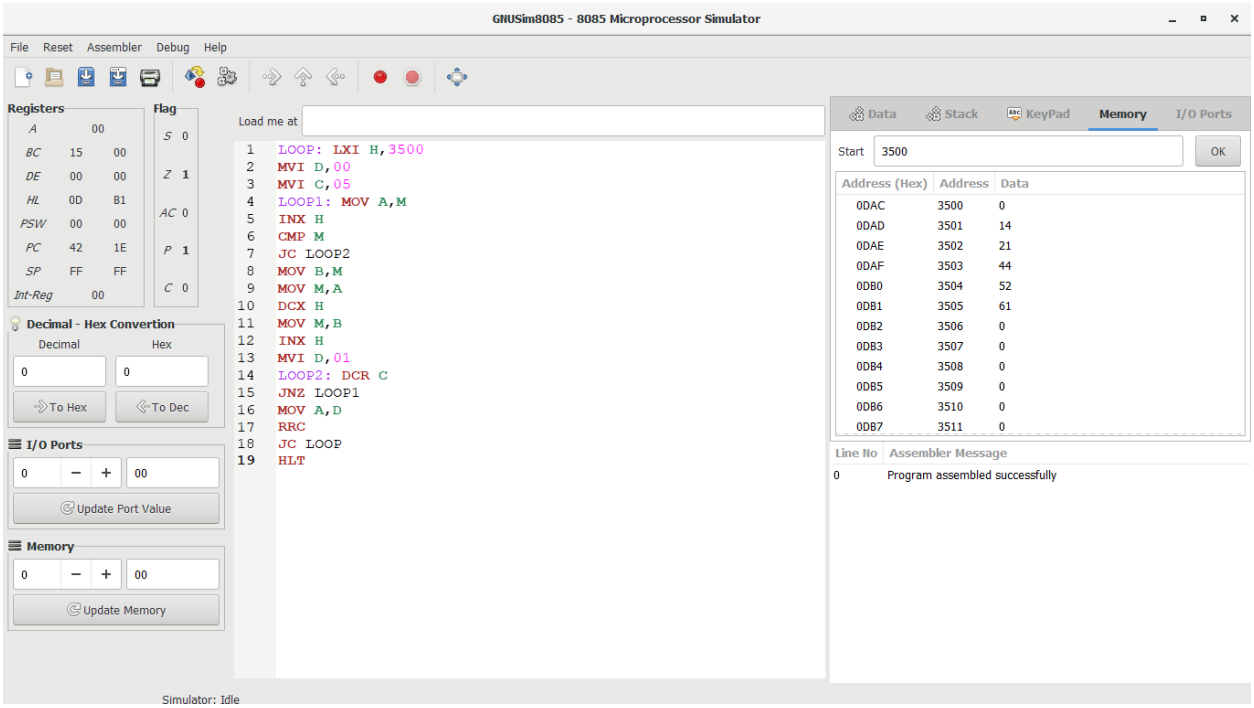
1) Initialize HL pair as memory pointer.
2) Get the count at memory and load it into C register
3) Copy it in D register (for bubble sort (N-1)) times required.
4) Get the first value in A register.
5) Compare it with the value at next location.
6) If they are out of order, exchange the contents of A 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
A 00
BC 10 00
DE 00 00
HL 0D B1
PSW 00 00
PC 42 1E
SP FF FF
Int-Reg 00
Flag
S 0
Z 1
AC 0
P 1
C 0
Decimal - Hex Convertion
Decimal
Hex
To Hex
To Dec
I/O Ports
Update Port Value
Memory
Update Memory
Load me at
1 LOOP: LXI H,3500
2 MVI D,00
3 MVI C,05
4 LOOP1: MOV A,M
5 INX H
6 CMP M
7 JC LOOP2
8 MOV B,M
9 MOV M,A
10 DCX H
11 MOV M,B
12 INX H
13 MVI D,01
14 LOOP2: DCR C
15 JNZ LOOP1
16 MOV A,D
17 RRC
18 JC LOOP
19 HLT
Data Stack KeyPad Memory I/O Ports
Start 3500 OK
Address (Hex) Address Data
0DAC 3500 0
0DAD 3501 14
0DAE 3502 44
0DAF 3503 61
0DB0 3504 21
0DB1 3505 52
0DB2 3506 0
0DB3 3507 0
0DB4 3508 0
0DB5 3509 0
0DB6 3510 0
0DB7 3511 0
Line No Assembler Message
0 Program assembled successfully
Simulator: Program running


GNUSim8085 - 8085 Microprocessor Simulator
File Reset Assembler Debug Help
Registers
A 00
BC 15 00
DE 00 00
HL 0D B1
PSW 00 00
PC 42 1E
SP FF FF
Int-Reg 00
Flag
S 0
Z 1
AC 0
P 1
C 0
Decimal - Hex Convertion
Decimal
Hex
To Hex
To Dec
I/O Ports
Update Port Value
Memory
Update Memory
Load me at
1 LOOP: LXI H,3500
2 MVI D,00
3 MVI C,05
4 LOOP1: MOV A,M
5 INX H
6 CMP M
7 JC LOOP2
8 MOV B,M
9 MOV M,A
10 DCX H
11 MOV M,B
12 INX H
13 MVI D,01
14 LOOP2: DCR C
15 JNZ LOOP1
16 MOV A,D
17 RRC
18 JC LOOP
19 HLT
Data Stack KeyPad Memory I/O Ports
Start 3500 OK
Address (Hex) Address Data
0DAC 3500 0
0DAD 3501 14
0DAE 3502 21
0DAF 3503 44
0DB0 3504 52
0DB1 3505 61
0DB2 3506 0
0DB3 3507 0
0DB4 3508 0
0DB5 3509 0
0DB6 3510 0
0DB7 3511 0
Line No Assembler Message
0 Program assembled successfully
Simulator: Idle

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