

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:

 Data	 Stack	 Keypad
Start <input type="text" value="3500"/>		
Address (Hex)	Address	Data
0DAC	3500	5
0DAD	3501	6
0DAE	3502	5
0DAF	3503	4
0DB0	3504	3
0DB1	3505	8
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OUTPUT:

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

Register	Value
A	00
BC	00 00
DE	00 78
HL	0D B1
PSW	00 00
PC	42 22
SP	FF FF
Int-Reg	00

Flag

Flag	Value
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  jmp start
3
4  ;data
5
6  ;code
7
8  start: nop
9
10 LOOP: LXI H, 3500
11 MVI D, 00
12 MVI C, 05
13 LOOP1: MOV A, M
14 INX H
15 CMP M
16 JC LOOP2
17 MOV B, M
18 MOV M, A
19 DCX H
20 MOV M, B
21 INX H
22 MVI D, 01
23 LOOP2: DCR C
24 JNZ LOOP1
25 MOV A, D
26 RRC
27 JC LOOP
28 hlt
29

```

Start 3500 OK

Address (Hex)	Address	Data
0DAC	3500	5
0DAD	3501	6
0DAE	3502	5
0DAF	3503	4
0DB0	3504	3
0DB1	3505	8
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

27°C Mostly cloudy

Search

ENG IN

09:26 AM 17-10-2023

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