

CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEVANG PATEL INSTITUTE OF ADVANCE TECHNOLOGY AND
RESEARCH

COMPUTER SCIENCE AND ENGINEERING

4CSE - 2:

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Definition:

Write an ALP to perform sorting of array (size = 10) in ascending order.
Consider starting location = 5000H . Store output from 6000H onwards.

Code:

mov DL,10

mov SI,5000h

mov DI,5000h

l2: mov AL,[SI]

mov CL,DL

l1: inc SI

mov BL,[SI]

cmp AL,BL

jz next

jc next

xchg AL,BL

mov [SI],BL

next: loop l1

mov [DI],AL

mov AX,[DI]

inc AX

inc DI

mov SI,DI

dec DL

jnz l2

mov CL,10

mov SI,5001h

mov DI,6000h

l: mov AL,[SI]

mov [DI],AL

inc SI

inc DI

dec CL

jnz l

ret

Output:

The screenshot displays an 8086 emulator interface with three main panels:

- original source code:**

```

01 mov DL,10
02 mov SI,5000h
03 mov DI,5000h
04
05 12: mov AL,[SI]
06 mov CL,DL
07
08 11: inc SI
09 mov BL,[SI]
10 cmp AL,BL
11
12 jz next
13 jc next
14
15 xchg AL,BL
16
17 mov [SI],BL
18
19 next: loop 11
20
21 mov [DI],AL
22 mov AX,[DI]
23 inc AX
24 inc DI
25 mov SI,DI
26 dec DL
27
28 jnz 12
29
30 mov CL,10
31 mov SI,5001h
32 mov DI,6000h
33

```
- emulator: noname.bin_:**
 - registers:**

	H	L
AX	00	00
BX	00	00
CX	00	00
DX	00	00
CS	0100	
IP	0000	
SS	0100	
SP	FFFE	
BP	0000	
SI	0000	
DI	0000	
DS	0100	
ES	0100	
 - Memory (0100:0000):**

01000: B2 178	
01001: 0A 010 NEWL	
01002: BE 170	
01003: 00 000 NULL	
01004: 50 080 P	
01005: BF 191	
01006: 00 000 NULL	
01007: 50 080 P	
01008: 8A 138	
01009: 04 004	
0100A: 8A 138	
0100B: CA 202	
0100C: 46 070	
0100D: 8A 138	
0100E: 1C 028	
0100F: 3A 058	
01010: C3 195	
01011: 74 116	
01012: 06 006	
01013: 72 114	
01014: 04 004	
01015: 86 134	
01016: C3 195	
 - Memory (0100:0000):**

```

MOV DL, 0Ah
MOV SI, 05000h
MOV DI, 05000h
MOV AL, [SI]
MOV CL, DL
INC SI
MOV BL, [SI]
CMP AL, BL
JZ 019h
JB 019h
XCHG BL, AL
MOV [SI], BL
LOOP 0Ch
MOV [DI], AL
MOV AX, [DI]
INC DI
MOV SI, DI
DEC DL
JNE 08h
MOV CL, 0Ah
MOV SI, 05001h
...

```
- Random Access Memory:**

Address: 0100:5000 | update | table | list

0100:5000	10 09 08 07 06 05 04 03-02 01 00 00 00 00 00 00 00	▶...◆◆◆◆◆◆◆◆◆◆
0100:5010	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0100:5020	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0100:5030	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0100:5040	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0100:5050	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0100:5060	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0100:5070	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00

