

original source code

```

01 ;Name = Yash kumar Mishra
02 ;Reg no = 2341013142
03 ;Section = 23412F1
04 ;LAB 3
05 ;OBJECTIVE 2 ASCENDING
06
07
08 .data
09 count db 06
10 value db 0c3h, 0d6h, 06ch, 05bh, 01ah, 0abH
11
12 .code
13 main proc
14 mov ax,data
15 mov ds,ax
16 lea di, count
17 mov ch, [di]
18 dec ch
19 up2: mov cl,ch
20 lea si,value
21
22 up1: mov al,[si]
23 cmp al, [si+1]
24 jc down
25 mov dl, [si+1]
26 xchg [si],dl
27 mov [si+1],dl
28
29 down: inc si
30 dec cl
31 jnz up1
32 dec ch
33 jnz up2
34
35 end main
          
```

emulator: lab3_obj1 smallest.exe

file math debug view external virtual devices virtual drive help

Load reload step back single step run step delay ms: 0

registers

	H	L
AX	07	1A
BX	00	00
CX	00	00
DX	00	5B
CS	0711	
IP	003D	
SS	0710	
SP	0000	
BP	0000	
SI	0002	
DI	0000	
DS	0710	
ES	0700	

0711:003D 0711:003C

0714D: F4 244	NOP
0714E: 00 000	NOP
0714F: 00 000	NOP
07150: 00 000	NOP
07151: 00 000	NOP
07152: 00 000	NOP
07153: 00 000	NOP
07154: 00 000	NOP
07155: 00 000	NOP
07156: 00 000	NOP
07157: 00 000	NOP
07158: 00 000	NOP
07159: 00 000	NOP
0715A: 00 000	NOP
0715B: 00 000	NOP
0715C: 00 000	NOP
0715D: 00 000	HLT
0715E: 00 000	ADD [BX + SI], AL
0715F: 00 000	ADD [BX + SI], AL
07160: 00 000	ADD [BX + SI], AL
07161: 00 000	ADD [BX + SI], AL
07162: 00 000	ADD [BX + SI], AL
07163: 00 000	ADD [BX + SI], AL
07164: 00 000	...

screen source reset aux vars debug stack flags

Random Access Memory

0710:0000 update table list

0710:0000	06 1A 5B 6C AB C3 D6 00-00	00 00 00 00 00 00 00 00
0710:0010	B8 10 07 8E D8 BF 00 00-8A	2D FE CD 8A CD BE 01
0710:0020	00 8A 04 3A 44 01 72 08-8A	54 01 86 14 88 54 01
0710:0030	46 FE C9 75 EC FE CD 75-E3	90 90 90 90 90 90 90 90
0710:0040	90 90 90 90 90 90 90 90-90	90 90 90 90 90 90 90 90
0710:0050	00 00 00 00 00 00 00 00-00	00 00 00 00 00 00 00 00
0710:0060	00 00 00 00 00 00 00 00-00	00 00 00 00 00 00 00 00
0710:0070	00 00 00 00 00 00 00 00-00	00 00 00 00 00 00 00 00

original source code

```

01 ;Name = Yash kumar Mishra
02 ;Reg no = 2341013142
03 ;Section = 23412F1
04 ;LAB 3
05 ;OBJECTIVE 2 DESCENDING
06
07
08 .data
09 count db 06
10 value db 0c3h, 0d6h, 06ch, 05bh, 01ah, 0abH
11
12 .code
13 main proc
14 mov ax,data
15 mov ds,ax
16 lea di, count
17 mov ch, [di]
18 dec ch
19 up2: mov cl,ch
20 lea si,value
21
22 up1: mov al,[si]
23 cmp al, [si+1]
24 jnc down
25 mov dl, [si+1]
26 xchg [si],dl
27 mov [si+1],dl
28
29 down: inc si
30 dec cl
31 jnz up1
32 dec ch
33 jnz up2
34
35 end main
          
```

emulator: lab3_obj1 smallest.exe

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Load reload step back single step run step delay ms: 0

registers

	H	L
AX	07	06
BX	00	00
CX	00	00
DX	00	6C
CS	0711	
IP	003D	
SS	0710	
SP	0000	
BP	0000	
SI	0002	
DI	0000	
DS	0710	
ES	0700	

0711:003D 0711:003C

0714D: F4 244	NOP
0714E: 00 000	NOP
0714F: 00 000	NOP
07150: 00 000	NOP
07151: 00 000	NOP
07152: 00 000	NOP
07153: 00 000	NOP
07154: 00 000	NOP
07155: 00 000	NOP
07156: 00 000	NOP
07157: 00 000	NOP
07158: 00 000	NOP
07159: 00 000	NOP
0715A: 00 000	NOP
0715B: 00 000	NOP
0715C: 00 000	NOP
0715D: 00 000	HLT
0715E: 00 000	ADD [BX + SI], AL
0715F: 00 000	ADD [BX + SI], AL
07160: 00 000	ADD [BX + SI], AL
07161: 00 000	ADD [BX + SI], AL
07162: 00 000	ADD [BX + SI], AL
07163: 00 000	ADD [BX + SI], AL
07164: 00 000	...

screen source reset aux vars debug stack flags

Random Access Memory

0710:0000 update table list

0710:0000	06 D6 C3 AB 6C 5B 1A 00-00	00 00 00 00 00 00 00 00
0710:0010	B8 10 07 8E D8 BF 00 00-8A	2D FE CD 8A CD BE 01
0710:0020	00 8A 04 3A 44 01 73 08-8A	54 01 86 14 88 54 01
0710:0030	46 FE C9 75 EC FE CD 75-E3	90 90 90 90 90 90 90 90
0710:0040	90 90 90 90 90 90 90 90-90	90 90 90 90 90 90 90 90
0710:0050	00 00 00 00 00 00 00 00-00	00 00 00 00 00 00 00 00
0710:0060	00 00 00 00 00 00 00 00-00	00 00 00 00 00 00 00 00
0710:0070	00 00 00 00 00 00 00 00-00	00 00 00 00 00 00 00 00

