



$N = 6$

Bubblesort in (Menu)

Date: _____
Page No: _____

```
.model small  
display macro msg  
lea di, msg  
mov ah, 09h  
int 21h  
endm
```

.data

```
n db 6  
a db 05, 07, 04, 03, 06, 02  
msg1 db 0dh, 0ah, "1. - sort in ascenl $"  
msg2 db 0dh, 0ah, "2. - sort in descenl $"  
msg3 db 0dh, 0ah, "3. - exit $"  
msg4 db 0dh, 0ah, "4. Enter choice $"  
msg5 db 0dh, 0ah, "Invalid choice $"
```

.code

```
mov ax, @data  
mov ds, ax  
lea si, a  
mov cl, n  
dec cl  
display msg1  
display msg2  
display msg3  
display msg4  
mov ah, 01h  
int 21h  
sub al, 30h
```

~~no~~
 cmp al, 01h
 je ~~ascsort~~
 cmp al, 02h
 je ~~descsort~~
 cmp al, 03h
 je final
 display msg 5
 jmp final

asc sort & mov ch, cl
 mov si, 00h
 inloopa & mov al, a[si]
 inc si
 cmp al, a[si]
 je noa
 xchg al, a[si]
 mov a[si-1], al

noa & dec ch
 jnz asc sort
 jmp final

desc sort & mov ch, cl
 mov si, 00h
 inloopd & mov al, a[si]
 inc si
 cmp al, a[si]
 jle next
 xchg al, a[si]
 mov a[si-1], al
 next & dec ch



```
jnz intloop  
dec cl  
jnz descort  
jmp final
```

```
final: mov ah, 4ch  
int 21h  
end
```

C:\MASM>link menu;;

Microsoft (R) Overlay Linker Version 3.60
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LINK : warning L4021: no stack segment

C:\MASM>menu

- 1 - sort in ascending order
- 2 - sort in descending order
- 3 - exit

enter your choice1

C:\MASM>

C:\MASM>3

Illegal command: 3.

C:\MASM>

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0,...

File Edit View Search Run Watch Options Calls Help

local

source1 CS:IP (ACTIVE)

052A:0000 B83305 MOV AX,0533

052A:0003 8ED8 MOV DS,AX

052A:0005 8D360700 LEA SI,Word Ptr [0007]

052A:0009 8A0E0600 MOV CL,Byte Ptr [0006]

052A:000D FEC9 DEC CL

052A:000F 8D160D00 LEA DX,Word Ptr [000D]

052A:0013 B409 MOV AH,09

052A:0015 CD21 INT 21

052A:0017 8D162B00 LEA DX,Word Ptr [002B]

052A:001B B409 MOV AH,09

052A:001D CD21 INT 21

052A:001F 8D164A00 LEA DX,Word Ptr [004A]

052A:0023 B409 MOV AH,09

052A:0025 CD21 INT 21

052A:0027 8D165500 LEA DX,Word Ptr [0055]

reg

AX = 0000

BX = 0000

CX = 0000

DX = 0000

SP = 0000

BP = 0000

SI = 0000

DI = 0000

DS = 051A

ES = 051A

SS = 0529

CS = 052A

IP = 0000

FL = 0200

NV UP EI PL

NZ NA PO NC

command

CU1053 Warning: TOOLS.INI not found

CU0101 Warning: No symbolic information for C:\MASM\menu.EXE

>

<F8=Trace> <F10=Step> <F5=Go> <F6=Window> <F3=Display>