File   Edit   Search   View   Options   Help

C:\MASM\SORT.ASM

```asm
.model small
display macro msg
    lea dx,msg
    mov ah,09h
    int 21h
endm
.data
list db 02h,01h,34h,0f4h,09h,05h
number equ $-list
msg1 db 0dh,0ah,"1>>sort in ascending order$"
msg2 db 0dh,0ah,"2>>sort in descending order$"
msg3 db 0dh,0ah,"3>>exit$"
msg4 db 0dh,0ah,"enter your choice ::$"
msg5 db 0dh,0ah,"invalid choice entered...$"
.code
start :mov ax,@data
mov ds,ax
lea si,list
mov ch,number-1    ;cl stores the number of elements in the list
display msg1       ;display the menu...
display msg2
display msg3
```

```asm
display msg3
display msg4
mov ah,01h
int 21h
sub al,30h
cmp al,001h        ;input=1? sort in ascending order
je ascsort
cmp al,02h         ;input=2? sort in descending order
je dessort
cmp al,03h         ;input=3? exit
je final
display msg5
jmp final
ascsort:mov bl,00h
again:mov si,offset list
      mov cl,00h
      mov bh,ch
      sub bh,bl
npass: cmp cl,bh
  jnc next
  mov al,[si]
  mov bp,01h
```

```asm
        mov bh,ch
        sub bh,bl
npass: cmp cl,bh
  jnc next
  mov al,[si]
  mov bp,01h
  cmp al,ds:[bp][si]
  jc _nope
  xchg al,[si+1]
  xchg [si],al
  _nope:inc cl
        inc si
        jmp npass
  next: inc bl
        cmp bl,ch
        jc again
        jmp final

  dessort:mov bl,00h
  again1:mov si,offset list
      mov cl,00h     ;j value
      mov bh,ch
```

File   Edit   Search   View   Options   Help

C:\MASM\SORT.ASM

```asm
        mov cl,00h      ;j value
        mov bh,ch
        sub bh,bl       ;n-1-i
npass1:cmp cl,bh
        jnc next
        mov al,[si]
        mov bp,01h
        cmp al,ds:[bp][si]
        jnc _nope1
        xchg al,[si+1]
        xchg[si],al
_nope1:inc cl
        inc si
        jmp npass1
next1:inc bl
        cmp bl,ch
        jc again1
final:mov ah,4ch
int 21h
end
```

F1=Help   Line:58   Col:1

```
DOSBox 0.74-3, Cpu speed: max 100% cycles, Frameskip 0, Program:        CV

C:\>cd masm

C:\MASM>masm sort;;
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987.  All rights reserved.


  51516 + 465028 Bytes symbol space free

     0 Warning Errors
     0 Severe  Errors

C:\MASM>link sort;;

Microsoft (R) Overlay Linker  Version 3.60
Copyright (C) Microsoft Corp 1983-1987.  All rights reserved.

LINK : warning L4021: no stack segment

C:\MASM>cv sort

1>>sort in ascending order
2>>sort in descending order
3>>exit
enter your choice ::
```

File Edit View Search Run Watch Options Calls

Help

```
                          ─────[ IP: IP (ACTIVE) ]─────
0520 002B D44C        MOV    AH,4C
0520 002D CD21        INT    21
0520 002F 0005        ADD    Byte Ptr [DI],AL
0520 0031 050707      ADD    AX,0707
0520 0034 03030A      ADD    AX,Word Ptr [0A07]
0520 0037 1B7762      SBB    AX,862
0520 003B C706E6012000 MOV    Word Ptr [01E6],0020
0520 0041 06          PUSH   ES
0520 0042 8BB6E401    MOV    AX,Word Ptr [01E4]
0520 0046 26BB162000  MOV    DX,Word Ptr ES:[0020]
0520 004B DD78A2      CALL   02C9
0520 004E 8A92        MOV    AH,92
0520 0050 B9FF7F      MOV    CX,7FFF
0520 0053 B02000      MOV    AX,002D
0520 0056 DD78A2      CALL   0492
0520 0059 07          POP    ES
```

```
─────[ COMMAND ]─────
0520 0010  06 04 8E 06 E4 01 26 8B 16 2C 00 E8 78 A2 8A 92
0520 0010  48 07 27 00 49 B0 2D 00 E8 78 A2 07 8B 3E 28
```

(F8:Trace) (F10:Step) (F5:Go) (F6:Window) (F3:Display)