

```

.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
        DISPLAY MSG1           ; CL STORES THE NUMBER OF ELEMENTS IN THE LI
        DISPLAY MSG2           ; DISPLAY THE MENU...
        DISPLAY MSG3

```

E1=He1p

```

DISPLAY MSG3
DISPLAY MSG4
MOV AH, 01H
INT 21H
SUB AL, 30H
CMP AL, 01H
JE ASCSORT      : INPUT=1? SORT IN ASCENDING ORDER
CMP AL, 02H     : INPUT=2? SORT IN DESCENDING ORDER
JE DESSORT
CMP AL, 03H     : INPUT=3? EXIT
JE FINAL
DISPLAY MSG4
JMP FINAL
ASCSORT: MOV BL, 00H
AGAIN:   MOV SI, OFFSET LIST
         MOV CL, 00H
         MOV BH, CH
         SUB BH, BL
         CMP CL, BH
         JNC NEXT
         MOV AL, [SI]
         MOV BP, 01H
         : J VALUE
         : N-1-1

```

F1=Help

```
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
        SUB BH, BL
NPASS1:  CMP CL, BH
        JNC NEXT
        MOV AL, [SI]
        MOV BP, 01H
```

Line:43 Col:1

```

MOV CL, 00H          ; J VALUE
MOV BH, CH
SUB BH, BL
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 START

```

File In

DOSBOX 0.74-5, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX -

```
C:\8086>masm bubsort;;
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.
```

51466 + 465078 Bytes symbol space free

0 Warning Errors
0 Severe Errors

```
C:\8086>link bubsort;;
```

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

LINK : warning L4021: no stack segment

```
C:\8086>bubsort
```

```
1 >> SORT IN ASCENDING ORDER
2 >> SORT IN DESCENDING ORDER
3 >> EXIT
ENTER YOUR CHOICE :: 1
C:\8086>
```