

## Bubble Sort

.MODEL

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

DESSORT: MOV BL, 00H

AGAIN1: MOV SI, OFFSET LIST

MOV CL, 00H

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

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marked?

NEXT1: INC BL

CMP BL, CH

JC AGAIN1

FINAL: MOV AH, 4CH

START: MOV AX, @DATA

MOV DS, AX

LEA SI, LIST

MOV CH, NUMBER-1

DISPLAY MSG1

DISPLAY MSG2

DISPLAY MSG3

~~DO~~ DISPLAY MSG4

MOV AH, 01H

INT 21H

SUB AL, 30H

CMP AL, 01H

JE ASSORT

CMP AL, 02H

JE DESSORT

CMP AL, 03H

JE FINAL

DISPLAY MSG5

JMP FINAL

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 Edit Search View Options help  
C:\MASM\BSM.ASM

.MODEL

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

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C:\MASM\BSM.ASM

```
DESSORT:MOV BL,00H
AGAIN1:MOV SI,OFFSET LIST
        MOV CL,00H
        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
```

F1=Help

Line:82 Col:1



```
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C:\MASM\BSM.ASM

START:  MOV AX,@DATA
        MOV DS,AX
        LEA SI,LIST
        MOV CH,NUMBER-1

        DISPLAY MSG1
        DISPLAY MSG2
        DISPLAY MSG3
        DISPLAY MSG4
        MOV AH,01H
        INT 21H
        SUB AL,30H
        CMP AL,01H
        JE ASSORT
        CMP AL,02H
        JE DESSORT
        CMP AL,03H
        JE FINAL

        DISPLAY MSG5
        JMP FINAL

F1=Help Line:41 Col:1
```

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C:\MASM\BSM.ASM

```
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
```

```
C:\MASM>CU BSM
```

```
1>> SORT IN ASCENDING ORDER  
2>> SORT IN DESCENDING ORDER  
3>> EXIT
```

```
ENTER YOUR CHOICE ::1
```

```
C:\MASM>CU BSM
```

```
1>> SORT IN ASCENDING ORDER  
2>> SORT IN DESCENDING ORDER  
3>> EXIT
```

```
ENTER YOUR CHOICE ::2
```

```
C:\MASM>EDIT BSM.ASM
```

```
C:\MASM>_
```

```

File Edit View Search Run Watch Options Calls
source1 CS:IP (ACTIVE)
052A:00A1 0001 ADD Byte Ptr [BX+DI],AL
052A:00A3 0205 ADD AL,Byte Ptr [DI]
052A:00A5 0934 OR Word Ptr [SI],SI
052A:00A7 F4 HLT
052A:00A8 0D0A31 OR AX,310A
052A:00AB 3E3E20534F AND Byte Ptr DS:[BP+DI+4F],DL
052A:00B0 52 PUSH DX
052A:00B1 54 PUSH SP
052A:00B2 20494E AND Byte Ptr [BX+DI+4E],CL
052A:00B5 204153 AND Byte Ptr [BX+DI+53],AL
052A:00B8 43 INC BX
052A:00B9 45 INC BP
052A:00BA 4E DEC SI
052A:00BB 44 INC SP
052A:00BC 49 DEC CX
052A:00BD 4E DEC SI
command
0534:0000 21 00 01 02 05 09 34 F4-0D 0A 31 3E 3E 20 53 4F ?...
0534:0010 52 54 20 49 4E 20 41 53-43 45 4E 44 49 4E 47 20 RT IN
0534:0020 4F 52 44 45 52 24 0D 0A-32 3E 3E 20 53 4F 52 54 ORDER
>

```