

## LAB-2

### BUBBLE SORT.

• 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, "INVALID CHOICE  
ENTERED ! THANK YOU.\$"

MSG5 DB 0DH, 0AH, "ENTER THE CHOICE.\$"

• Code

start: MOV AX, @DATA

MOV DS, AX

LEA SI, ~~list~~ OFFSET LIST

MOV CX, NUMBER-1

DISPLAY MSG1

DISPLAY MSG2

DISPLAY MSG3

DISPLAY MSG5

```
MOV DH, 01H
INT 91H
SUB AL, 30H
CMP AL, 01H
JMP ASORT
CMP AL, 02H
JMP DSORT
CMP AL, 03H
JC final
DISPLAY MSG4
JMP final
```

```
ASORT : MOV BL, 00H
AGAIN : MOV SI, OFFSET LIST
        MOV CL, 00H
        MOV BH, CH
        SUB BH, BL
```

```
NPASS : CMP CL, BA
        JNC NEXT
        MOV AL, [ESI]
        MOV BP, 01H
        CMP AL, DS:[EBP][ESI]
        JC NOPE
        XCHG [ESI], AL
        XCHG [ESI], AL
        NOPE : INC CL
        INC SI
        JMP NPASS
        NEXT : INC BL
        CMP BL, CH
        JC AGAIN
        JMP FINAL
```



DSORT : MOV BL, 00H

AGAIN1 : MOV SI, OFFSET LIST

MOV CL, 00H

MOV BACH

SUB BH, BL

NPASS1 : CMP CL, BH

JNC NEXT

~~XCHG~~ MOV AL, [ESI]

~~XCHG~~ MOV BP, 01H

CMP AL, DS:[BP][ESI]

JNC NOPE1

XCHG AL, [ESI+1]

XCHG [ESI], AL

NOPE1 : INC CL

INC SI

JMP NPASS1

NEXT1 : ENCBZ

CMP BL, CH

JC AGAIN1

FINAC : MOV AH, 4CH

INT 91H

END START.



DOSBox 0.74-3, Cpu speed: max 100% cycles, Frameskip 0, Prog...

File Edit View Search Run Watch Options Calls Help

local

source1 CS:IP (ACTIVE)

052A:009D B44C MOV AH,4C

052A:009F CD21 INT 21

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:00AB 0D0A31 OR AX,310A

052A:00AB 203E3E20 AND Byte Ptr [203E1,BH]

052A:00AF 53 PUSH BX

052A:00B0 4F DEC DI

052A:00B1 52 PUSH DX

052A:00B2 54 PUSH SP

052A:00B3 20494E AND Byte Ptr [BX+DI+4E1,CL]

052A:00B6 204153 AND Byte Ptr [BX+DI+531,AL]

052A:00B9 43 INC BX

052A:00BA 45 INC BP

reg

AX = 4C01

BX = 0105

CX = 0501

DX = 0053

SP = 0000

BP = 0001

SI = 0003

DI = 0000

DS = 0534

ES = 051A

SS = 0529

CS = 052A

IP = 00A1

FL = 0246

NU UP EI PL

ZR NA PE NC

DS:0105

BF

command

0534:0000 21 00 01 02 05 09 34 F4-0D 0A 31 20 3E 3E 20 53 ?....

0534:0010 4F 52 54 20 49 4E 20 41-53 43 45 4E 44 49 4E 47 ORT I

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