

LAB-2 Program

Date: 19/10/20

BUBBLE SORT

• MODEL SMALL

DISPLAY MACRO MSG

LEA DX, MSG

MOV AH, 09H

INT 21H

ENDM

• DATA

LIST DB 02H, 01H, 24H, 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 ; CH STORES NUMBER OF ELEMENTS IN LIST

DISPLAY MSG1 ; DISPLAY THE MENU...

DISPLAY MSG2

DISPLAY MSG3

DISPLAY MSG4

MOV AH, 01H

INT 21H

SUB AL, 30H

CMP AL, 01H ; INPUT=1 ? SORT IN ASCENDING ORDER

JE ASCSORT

CMP AL, 02H ; INPUT=2 ? SORT IN DESCENDING ORDER

JE DESSORT

CMP AL, 02H ; INPUT = 3? EXIT

JE FINAL

DISPLAY MSGS

JMP FINAL

ASC SORT: MOV BL, 00H

AGAIN: MOV SI, OFFSET LIST

MOV CL, 00H ; J VALUE

MOV BH, CH

SUB BH, BL ; N-1

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

AGAIN2: MOV SI, OFFSET LIST

MOV CL, 00H

MOV BH, CH

SUB BH, BL

NPASS2: CMP CL, BH

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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

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