

Week 1:- Program (lab) - 1

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• MODEL SMALL

; MACRO TO DISPLAY THE MESSAGE;...

DISPLAY MACRO MSG

LEA DX, MSG

MOV AH, 09H

INT 21H

ENDM

• DATA

LIST DB 01H, 05H, 07H, 10H, 12H, 14H

NUMBER EQU (\$ - LIST); number here is having
KEY DB 10H the value 6

MSG1 DB 0DH, 0AH, "ELEMENT FOUND IN THE
LIST ... \$"

MSG2 DB 0DH, 0AH, "SEARCH FAILED!!
ELEMENT NOT FOUND IN THE LIST \$"

• CODE

START : MOV AX, @ DATA

MOV DS, AX

MOV CH, NUMBER-1 ; HIGH VALUE ...

HERE VALUE IS 6-1=5

MOV CH, 00H

; LOW VALUE...

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AGAIN : MOV SI, OFFSET LIST ; LEA SI, LIST
XOR AX, AX ; MOV AX, 00H
CMP CL, CH ; SUBTRACTION OF CL-CH
JE NEXT
JNC FAILED

NEXT : MOV AL, CL ; AL=00H
ADD AL, CH ; AL = 00 + 05 = 05
SHR AL, 01H ; DIVIDE BY 2 →
MOV BL, AL ; BL → index of middle element
XOR AH, AH ; CLEAR AH
MOV BP, AX
MOV AL, DS:[BP][SI]
CMP AL, KEY ; COMPARE KEY AND A[I]
JE SUCCESS ; If equal, DISPLAY
SUCCESS MESSAGE
JE INCLOW
MOV CH, BL ; If KEY > A[I] SHIFT
HIGH
DEC CH ; CH will have index of
middle-1 element
JMP AGAIN

INCLOW : MOV CL, BL ; If KEY < A[I] SHIFT LOW
INC CL ; CL will have index of
middle+1 element
JMP AGAIN

SUCCESS : DISPLAY MSG1
JMP FINAL

FAILED : DISPLAY MSG2 ; JOB OVER. TERMINATE....

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FINAL: MOV AH, 4CH
INT 21H

END START

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X ——— X ——— X ——— X ——— X ——— X ———