

# LAB-1 Program

## BINARY SEARCH

Date: 12/10/20

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MODEL SMALL

DISPLAY MACRO MSG,

LEA DX, MSG,

MOV AH, 09H

INT 21H

ENDM

.DATA

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

NUMBER EQU (\$-LIST)

KEY DB 02H

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...

MOV CL, 00H ; LOW VALUE...

AGAIN: MOV SI, OFFSET LIST

XOR AX, AX

CMP CL, CH

JE NEXT

JNC FAILED

NEXT: MOV AL, CL

ADD AH, CH

SHR AL, 01H ; DIVIDE BY 2

MOV BL, AL

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XOR AH, AH          ; CLEAR AH
MOV BP, AX
MOV AL, DS:[BP][SI]
CMP AL, KEY          ; COMPARE KEY AND A[SI]
JE SUCCESS           ; IF EQUAL, DISPLAY SUCCESS
JE INCLOW            ; IF KEY < A[SI]
MOV CH, BL           ; IF KEY > A[SI] SHIFT HIGH
DEC CH
JMP AGAIN
INCLOW: MOV CL, BL
INC CL
JMP AGAIN
SUCCESS: DISPLAY MSG1
JMP FINAL
FAILED: DISPLAY MSG2
FINAL: MOV AH, 4CH
INT 21H
END START
```