NAME: T.VAGHDEVI PRAVEEN
USN: 1BM19CS175
C-D SECTION
SIGNATURE: Vaghdevi:- LAB-1

URBAN
EDGE ___/___/___

```
. 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 having the
                          value 6.


KEY  DB  10H
MSG1   DB   0DH, 0AH,"ELEMENT   FOUND IN THE
                    LIST ....$"

MSG 2    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  CL, 00H     ;  LOW VALUE ....
```

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


NEXT : MOV AL, CL ; AL = OOH
       ADD AL, CH ; AL = OO+O5 = O5
SHR AL, OIH ; DIVIDE BY 2 --> AL will have the
                                index of mid element


   MOV BL, AL ; BL --> index of mid element
   XOR AH, AH ; CLEAR AH
   MOV BP, AX


   MOV AL, DS: [BP] [SI]
   CMP AL, KEY ; COMPARE KEY AND A[I]
   IF SUCCESS ; IF EQUAL, DISPLAY SUCCESS MESSAGE
   JC INCLOW
   MOV CH, BL ; IF KEY > A[I] SHIFT HIGH
   DEC CH     ; CH will have index of middle-1
                 element (Search from low to
                            middle -1)
JMP AGAIN


INCLOW : MOV CL, BL ; IF KEY < A[I] SHIFT LOW
         INC CL     ; CL will have index of
                      middle +1 element
                      (Search from mid+1 to high
                       value)
     JMP AGAIN
```

```
SUCCESS : DISPLAY   MSG1
          JMP    FINAL

FAILED : DISPLAY  MSG 2 ; JOB OVER. TERMINATE
                                        . . . .

FINAL : MOV AH, 4CH
          INT 21H

END START.
```