```asm
. 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)
KEY DB 012H
MSG1 DB 0DH, 0AH, " ELEMent found in the list.
MSG2 DB 0.DH, 0AH, "Search failed ! element
                   not found in 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  AL, CH
        SHR  AL, 01H            ; % by 2
        mov BL, AL
```

```
        XOR    AH, AH
        mov    BP, AX
        mov    AL, DS : [BP][SI]
        CMP    AL key
        JE SUCCESS
        JC     INCLOW .
        mov CH , BL                    ; IF Key>A[i]
        DEC    CH                         flag high
        JMP    AGAIN
INCLOW: mov   CL, BL
        INC    CL
        JMP   AGAIN
SUCCESS: DISPLAY   MSG1
         JMP FINAL
FAILED:  DISPLAY   MSG 2
FINAL:   mov AH, 4CH
         INT 21H
         END
```

```
C:\MASM>EDIT PRG1.ASM

C:\MASM>MASM PRG1;;
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987.  All rights reserved.


   51518 + 465026 Bytes symbol space free

      0 Warning Errors
      0 Severe   Errors

C:\MASM>LINK PRG1;;

Microsoft (R) Overlay Linker  Version 3.60
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LINK : warning L4021; no stack segment

C:\MASM>PRG1

element found in the list...
C:\MASM>
```

```
                              ┌─local─┐                                        ↑    ·┌reg┐↑
                        ┌─source1 CS:IP (ACTIVE)─┐                              ↑     AX = 0000
52A:0000 B82E05          MOV        AX,052E                                           BX = 0000
052A:0003 8ED8           MOV        DS,AX                                             CX = 0000
052A:0005 B505           MOV        CH,05                                             DX = 0000
052A:0007 B100           MOV        CL,00                                            SP = 0000
052A:0009 BE0E00         MOV        SI,000E                                          BP = 0000
052A:000C 33C0           XOR        AX,AX                                             SI = 0000
052A:000E 3ACD           CMP        CL,CH                                             DI = 0000
052A:0010 7402           JZ         0014                                             DS = 051A
052A:0012 732E           JNB        0042                                             ES = 051A
052A:0014 8AC1           MOV        AL,CL                                             SS = 0529
052A:0016 02C5           ADD        AL,CH                                             CS = 052A
052A:0018 D0E8           SHR        AL,1                                             IP = 0000
052A:001A 8AD8           MOV        BL,AL                                             FL = 0200
052A:001C 32E4           XOR        AH,AH
052A:001E 8BE8           MOV        BP,AX                                            NV UP EI PL
052A:0020 3E8A02         MOV        AL,Byte Ptr DS:[BP+SI]                           NZ NA PO NC
                              ┌─command─┐                                      ↑↑
CV1053 Warning:   TOOLS.INI not found                                          ↑
CV0101 Warning:   No symbolic information for C:\MASM\PRG1.EXE
>

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

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