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```
.Model Small
; MACRO TO DISPLAY THE MESSAGE....
DISPLAY MACRO MSG
            LEA DX, MSG
            MOV AH, 09H
            INT 21H
ENDM

.DATA                                       /n
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 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     ;      cl<ch  or cl>ch    or cl=ch      0-5
          JE NEXT           ;      cf=1   cf=0           zf=1          cf=1
          JNC FAILED
NEXT:  MOV AL, CL      ; mid=low+high
          ADD AL, CH
          SHR AL, 01H          ; DIVIDE BY 2        0100  0010
          MOV BL,  AL
```

Ln 1, Col 1 | 100% | Windows (CRLF) | UTF-8

Search

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```
          MOV CL, 00H            ;  LOW VALUE...
AGAIN : MOV SI, OFFSET LIST
          XOR AX, AX
          CMP CL, CH    ;      cl<ch  or cl>ch    or cl=ch      0-5
          JE NEXT          ;     cf=1   cf=0          zf=1          cf=1
          JNC FAILED
NEXT:  MOV AL, CL      ; mid=low+high
          ADD AL, CH
          SHR AL, 01H          ; DIVIDE BY 2        0100  0010
          MOV BL,  AL
          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
        JC INCLOW
        MOV CH, BL          ; IF KEY>A[I]        SHIFT HIGH
        DEC CH
        JMP AGAIN
INCLOW: MOV CL, BL      ; IF KEY<A[I]        SHIFT LOW
            INC CL
            JMP AGAIN
SUCCESS: DISPLAY MSG1
              JMP FINAL
FAILED: DISPLAY MSG2          ; JOB OVER. TERMINATE....
FINAL: MOV AH, 4CH
          INT 21H
END START
```

Ln 1, Col 1 | 100% | Windows (CRLF) | UTF-8

Search

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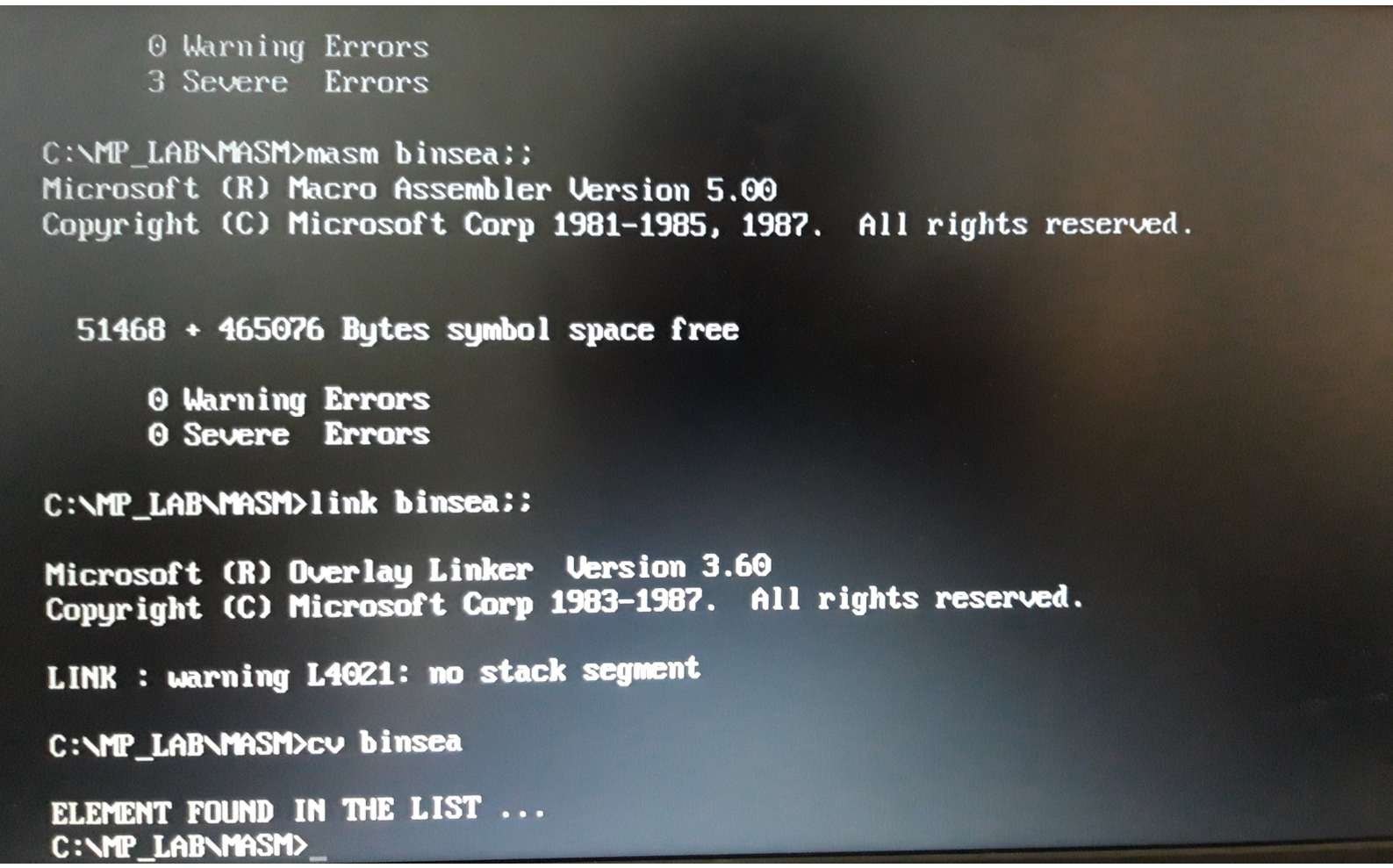
BINARY SEARCH.

```
.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 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 AL, CH
       SHR AL, 01H        ; DIVIDE BY2
       MOV BL, AL
       XOR AH, AH         ; CLEAR AH
       MOV BP, AX
       MOV AL, DS:[BP][SI]
       CMP AL, KEY ;  COMPAR KEY AND A[I]
       JE SUCCESS  ; IF Equal, display success message
```

```
        JC  INCLOW
        MOV ch, bl      ; If KEY >A[I] SHIFT HIGH
        DEC CH
        JMP AGAIN
INCLOW: MOV cl, bl      ; if key < A[I] SHift LOW
        inc cl
        Jmp Again
SUCCESS: DISPLAY MSG1
        JMP FINAL
FAILED : DISPLAY MSG2 ; JOB OVER TERMINATE...
FINAL : MOV AH, 4CH
        INT 21H
END START.
```


0 Warning Errors
3 Severe Errors
C:\MP_LAB\MASM>masm binsea;;
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.
51468 + 465076 Bytes symbol space free
0 Warning Errors
0 Severe Errors
C:\MP_LAB\MASM>link binsea;;
Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.
LINK : warning L4021: no stack segment
C:\MP_LAB\MASM>cv binsea
ELEMENT FOUND IN THE LIST ...
C:\MP_LAB\MASM>_