Binary Search

```
.Model SMALL
; MACRO TO DISPLAY MESSAGE
DISPLAY MACRO MSG
        LEA DX, MSG
        MOV AH, 09H
        INT 21H
ENDM
.DATA
LIST DB 01H, 05H, 07H, 0AH, 12H, 14H
NUMBER EQU ($-LIST)
KEY DB 0AH
MSG1 DB 0DH, 0AH, "ELEMENT FOUND IN LIST... $"
MSG2 DB 0DH, 0AH, "SEARCH FAILED! ELEMENT NOT FOUND $"

.CODE
START: MOV AX, @DATA
       MOV DS, AX

       MOV CH, NUMBER ; HIGH VALUE..
       MOV CL, 00H    ; LOW VALUE
AGAIN: MOV SI, OFFSET LIST
       XOR AX, AX
       CMP CL, CH
       JB NEXT
       JNC FAILED
NEXT:  MOV AL, CL
       ADD AL, CH
       SHR AL, 01H     ; Divide by 2.
       MOV BL, AL
       XOR AH, AH      ; Clear AH
       MOV BP, AX
```

```
MOV AL, DS [BP][SI]
CMP AL, KEY  ; ~~If Equal, Display Sc~~ Comp Key & A[I]
JE  SUCCESS  ; if Eq, Display Success
JL  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
FINAL:    MOV AH, 4CH  ; JOB OVER, TERMINATE
          INT 21H

END START
```