

1. Design and Develop an assembly language program to search a key element "x" in a list of 'n' 16-bit numbers. Adopt binary search algorithm in your program for searching.

~~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 05h
```

```
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 cx, number-1  
       mov di, 00h
```


AGAIN : ~~le~~ lea si, list
xor ax, ax
cmp cl, ch
je next
jne failed

next : mov al, cl
add al, ch
shr al, 01H
mov bl, al
xor ah, ah
mov bp, ax
mov al, ds:[BP][si]
cmp al, key
je success
je inclow
mov ch, bl
dec ch
jmp again

inclow : mov cl, bl
inc cl
jmp again

success : display msg1
jmp final

failed : display msg2

final : max ah, uch
int 21h

end start