

Lab Program

1) Binary Search

• model small

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; msg to display the message
display msg
lea dx, msg
mov ah, 09h
int 21h

```

endm

• data

list db 01h, 05h, 07h, 10h, 12h, 14h

number equ (\$-list) ; number here
is having the value 6

Key db 10h

msg1 db 0dh, 0ah, "Element found in the
the list"

msg2 db 0dh, 0ah, "Search failed!! Element not found"

.code

Start : mov ax, @data
mov ds, ax

mov ch, number-1 ; high value $6-1=5$
mov cl, 00h ; low value

again : mov si, offset list ; lea si, list
mov ax, ax ; mov ax, 00h
cmp cl, ch ; subtraction of cl-ch
je next
jne failed

next : mov al, cl ; al = 00h
add al, ch ; al = $00 + 05 = 05$
shr al, 01h ; divide by 2 (al will have
index middle
element)

mov bl, al ; bl → index of middle element
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

if inflow
 mov ch, bl ; if Key > a(i) shift high
 dec ch ; ch will have index of middle-1
 jump again. element (search from low
 to mid-1)

inflow : mov cl, bl ; if Key < a(i) shift low
 inc cl ; cl will have index of
 jump again middle+1 element
 (search from middle
 to high)

success : display msg
 jump final

failed : display msg

find : mov ah, 24h
 int 24h
 end start