13-10-20

Lab 4

① Binary search of a element in the array list.

```
.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... $"
msg2 db 0dH, 0aH, " Element not found $"

.code
start : mov ax, @ data
        mov ds, ax
        mov ch, number -1
        mov cl, 00H
again : mov si, offset list
        XOR ax, ax
        cmp cl, ch
```

```asm
              JE    next
              JNC   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
              JC    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 :       mov   aH, 4ch
              int   21H
End start
```