

# Lab. Programme 1

## Binary Search:-

1)

.model small

; To display MSG we use

DISPLAY MACRO MSG

LEA DX, MSG

MOV AH, 09H

INT 21H

ENDM

.DATA

LIST DB 01H, 05H, 07H, 10H, 12H, 14H

NUMBER EQU \$-LIST; Number has the value 6

KEY DB 10H

MSG1 DB 0DH, 0AH, "ELEMENT FOUND IN THE  
LIST... \$"

MSG2 DB 0DH, 0AH, "SEARCH UNSUCCESSFUL!  
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 FAIL

NEXT : MOV AL, CL  
         ADD AL, CH ; first term + last term  
         SHR AL, 01H ; DIVIDE by 2  
         MOV BL, AL ; so now BL pointing to  
                         ; middle term  
         XOR AH, AH ; clearing AH

        MOV BP, AX  
         MOV AL, DS:[BP][SI] ; Here BP helps to  
         CMP AL, KEY ; point location  
         JE SUCCESS ; at middle term  
         JC ~~HEAD~~ HIGH  
         MOV CH, BL ; here if KEY  $\leq$  mid term, first term  
         ~~DEC~~ CH ; will be mid term + 1  
         JMP AGAIN

HIGH : MOV CL, BL  
         INC CL ; CL  $\rightarrow$  Index of mid + 1  
         JMP AGAIN

SUCCESS : DISPLAY MSG-1  
           JMP FINAL

FAIL : DISPLAY MSG-2

FINAL : MOV AH, 04CH  
           INT 21H

END START





DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Progra...



ENTERED STRING IS NOT A PALINDROME

C:\MASM>edit BinarySearch.asm

C:\MASM>masm BINARYSE.ASM::

Microsoft (R) Macro Assembler Version 5.00

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51458 + 465086 Bytes symbol space free

0 Warning Errors

0 Severe Errors

C:\MASM>link BINARYSE.OBJ::

Microsoft (R) Overlay Linker Version 3.60

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LINK : warning L4021: no stack segment

C:\MASM>BINARYSE

ELEMENT FOUND IN THE LIST

C:\MASM>