

## LAB-8 (A 45)

1. ALP TO ACCEPT 10 TWO-DIGIT HEXADECIMAL NUMBERS FROM USER AND STORE IT IN AN ARRAY OF DATA SEGMENT. SEARCH AN ELEMENT IN THIS ARRAY AND PRTSTR SUITABLE MESSAGE
2. ALP TO ACCEPT TWO-DIGIT DECIMAL NUMBERS FROM USER AND PRTSTR THE DECIMAL SUM ON THE SCREEN.

1. ;ACCEPT AN ARRAY OF HEX NO.S AND SEARCH AN ELEMENT IN THAT

PRTSTR MACRO MSG ;TO PRINT MESSAGE ON SCREEN

LEA DX,MSG

MOV AH,09H

INT 21H

ENDM

DATA SEGMENT

MSG1 DB 'ENTER 10 NUMBERS\$'

MSG2 DB 10,13,'\$'

MSG3 DB 'ENTER A 2-DIGIT NUMBER AND PRESS ENTER\$'

MSG4 DB 'ENTER THE ELEMENT TO BE FOUND\$'

MSG5 DB 'FOUND\$'

MSG6 DB 'NOT FOUND\$'

ELE DB ? ;ELEMENT TO BE SEARCHED

ARRAY DB 10 DUP(0);

DATA ENDS

CODE SEGMENT

ASSUME CS:CODE,DS:DATA

START: MOV AX,DATA

MOV DS,AX

PRTSTR MSG1 ;PRINT MESSAGE TO INPUT NUMBERS

PRTSTR MSG2 ;CHANGE LINE AND CARRIAGE RETURN

MOV CX,0AH

LEA SI,ARRAY ;LOAD EFFECTIVE ADDRESS OF ARRAY TO SI

UP:PRTSTR MSG3 ;PRINT MESSAGE TO INPUT ONE ELEMENT

PRTSTR MSG2 ;CHANGE LINE AND CARRIAGE RETURN

MOV AH,01H ;INPUT NUMBER AS CHARACTERS

INT 21H

CMP AL,40H ;CHECK IF AL>40H

JB DOWN

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    SUB AL,07H
DOWN:SUB AL,30H
    PUSH CX      ;PUSH CONTENTS OF CX TO STACK
    MOV CL,04H   ;MOVE 4 TO CL
    ROL AL,CL    ;REVERSE AL CONTENTS
    POP CX       ;RESTORE CX CONTENTS
    MOV BL,AL    ;MOVE NUMBER TO BL
    ;REPETITION OF ABOVE STEPS FOR INPUT OF SECOND NUMBER
    MOV AH,01H
    INT 21H
    CMP AL,40H
    JB DOWN1
    SUB AL,07H
DOWN1:SUB AL,30H
    ADD AL,BL
    MOV [SI],AL
    INC SI
    INT 21H

```

LOOP UP ;REPEAT FOR 10 NUMBERS

PRTSTR MSG4 ;ENTER ELEMENT TO BE FOUND AND CONVERT ASCI TO  
HEX

```

    PRTSTR MSG2
    MOV AH,01H
    INT 21H
    CMP AL,40H
    JB DOWN3
    SUB AL,07H
DOWN3:SUB AL,30H

    MOV CL,04H
    ROL AL,CL
    MOV BL,AL
    MOV AH,01H
    INT 21H
    CMP AL,40H
    JB DOWN2
    SUB AL,07H
DOWN2:SUB AL,30H
    ADD AL,BL
    MOV ELE,AL

```

```

        INT 21H
        PRTSTR MSG2
        MOV CX,0AH
        LEA SI,ARRAY ; LOAD EFFECTIVE ADDRESS OF ARRAY TO SI
        LABEL1:MOV AH,[SI] ;MOVE ARRAY ELEMENT TO AL
                CMP ELE,AH      ;COMPARE AL WITH ELEMENT TO BE SEARCHED
                JE LABEL2
                INC SI
                LOOP LABEL1
                CMP CX,00H
                JE LABEL4
        LABEL2:PRTSTR MSG5 ;PRINT FOUND IF SEARCH SUCCESSFUL
                JMP LABEL3
        LABEL4:PRTSTR MSG6 ;PRINT NOT FOUND FOR UNSUCCESSFUL SEARCH

        LABEL3: MOV AH,4CH
                INT 21H

        CODE ENDS
        END START

```

2.);INPUT TWO DECIMAL NUMBERS AND DISPALY THEIR SUM

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PRTSTR MACRO MSG    ;TO PRINT MESSAGE ON SCREEN
    LEA DX , MSG
    MOV AH , 09H
    INT 21H

```

ENDM

```

DATA SEGMENT
    MSG1 DB 'INPUT FIRST DIGIT$'
    MSG2 DB 'INPUT SECOND DIGIT$'
    MSG3 DB 10 , 13 , '$'

    NUM1 DB ?
    NUM2 DB ?
    SUM DB ?
    CARRY DB ?
DATA ENDS
CODE SEGMENT
    ASSUME CS:CODE , DS:DATA
    START : MOV AX , DATA
            MOV DS , AX
            MOV DH , 02H

```

```
MOV AX , 0H
MOV CX , 04
```

```
PRTSTR MSG3
PRTSTR MSG1
MOV AH , 01H
INT 21H
AND AL , 00FH
```

```
MOV BH , AL
SHL BH , CL           ;SHIFT LEFT BY 4 POSITION
```

```
PRTSTR MSG3
PRTSTR MSG2           ; MESSAGE TO ENTER SECOND DIGIT
MOV AH , 01H
INT 21H
AND AL , 0FH         ;AND with 0FH GET LS DIGIT
```

```
ADD BH , AL
MOV NUM1 , BH
```

```
PRTSTR MSG3           ;MESSAGE TO ENTER THE FIRST DIGIT
PRTSTR MSG1
MOV AH , 01H
INT 21H
AND AL , 0FH
```

```
MOV BH , AL
SHL BH , CL
```

```
PRTSTR MSG3
PRTSTR MSG2
MOV AH , 01H
INT 21H
AND AL , 0FH
```

```
ADD BH , AL
MOV NUM2 , BH
```

```
PRTSTR MSG3
MOV AX , 0H
MOV BX , 0H
MOV AL , NUM1
MOV BL , NUM2
ADD AL , BL           ; ADDITION OF THE 2 NUMBERS
DAA                   ; DECIMAL ADJUST AFTER ADDITION
```

```
MOV SUM , AL
ADC CARRY , 0H      ; ADD WITH CARRY
```

```
MOV AH , CARRY
MOV AL , SUM
ADD AH , 30H
MOV DL , AH
MOV AH , 02H
INT 21H
```

```
MOV AX , 0H
MOV CL , 04H
MOV AL , BYTE PTR SUM ; SELECT ONE BYTE FROM SUM
ROR AX , CL           ; ROTATE RIGHT BY 4 BITS TO REVERSE
MOV BH , AH           ; MOVE NUMBER TO BH
ADD AL , 30H          ; ADD 30 TO CONVERT TO ASCII FORM
MOV DL , AL
MOV AH , 02H
INT 21H
SHR BH , CL           ;SHIFT RIGHT BY FOUR PLACES
ADD BH , 30H          ;ADD 30H TO CONVERT TO ASCII
MOV DL , BH
MOV AH , 02H
INT 21H
MOV AH , 4CH
INT 21H
```

```
CODE ENDS
END START
```