**Problem 1: Write a program to (a) display a “?”, (b) read two decimal digits whose sum is less than 10, (c) display them and their sum on the next line, with an appropriate message.**

Sample execution:

?27

THE SUM OF 2 AND 7 IS 9

.MODEL SMALL

.STACK 100H

.DATA

msg1 DB 'THE SUM OF $'

msg2 DB ' AND $'

msg3 DB ' IS $'

.CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX

;DISPLAYING THE '?' SIGN

MOV AH, 2H

MOV DL, '?'

INT 21H

;TAKING FIRST INPUT

MOV AH,1H

INT 21H

MOV BL, AL

;TAKING SECOND INPUT

MOV AH, 1H

INT 21H

MOV CL, AL

;FOR NEXT LINE

MOV AH, 2H

MOV DL, 0DH

INT 21H

MOV DL, 0AH

INT 21H

;PRINTING THE RESULT MESSEGES

LEA DX, msg1

MOV AH, 9H

INT 21H

MOV AH, 2H

MOV DL, BL

INT 21H

LEA DX,msg2

MOV AH, 9H

INT 21H

MOV AH, 2H

MOV DL, CL

INT 21H

LEA DX,msg3

MOV AH, 9H

INT 21H

;ADDING TWO INPUT'S

ADD BL, CL

SUB BL, 30H

MOV AH, 2H

MOV DL, BL

INT 21H

; EXIT DOS

MOV AH, 4CH

INT 21H

MAIN ENDP

END MAIN

; OUTPUT



**Problem 2: Write a program to (a) promt the user, (b) read first, middle and last initials of person’s name, and (c) display them down the left margin.**

Sample execution:

ENTER THREE INITIALS: JFK

J

F

K

.MODEL SMALL

.STACK 100H

.DATA

msg1 DB 'ENTER THREE INITIALS : $'

new\_line DB 0DH, 0AH, '$'

L DB ?

.CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX ; PRINTING THE MESSEGE

LEA DX, msg1

MOV AH, 9H

INT 21H

; TAKING THE INITIALS

MOV AH, 1H

INT 21H

MOV BL, AL

MOV AH, 1H

INT 21H

MOV CL, AL

MOV AH, 1H

INT 21H

MOV L, AL

; PRINTING THE INITIALS

LEA DX, new\_line

MOV AH, 9H

INT 21H

MOV AH, 2H

MOV DL, BL

INT 21H

LEA DX, new\_line

MOV AH, 9H

INT 21H

MOV AH, 2H

MOV DL, CL

INT 21H

LEA DX, new\_line

MOV AH, 9H

INT 21H

MOV AH, 2H

MOV DL, L

INT 21H

MOV AH, 4CH ; EXIT DOS

INT 21H

MAIN ENDP

END MAIN

; Output



**Problem 3: write a program to read one of the hex digits of A-F, and display it on the next line in decimal**

Sample execution:

ENTER A HEX DIGIT: C

IN DECIMAL IT IS 12

.MODEL SMALL

.STACK 100H

.DATA

MSG1 DB 'ENTER A HEX DIGIT: $'

MSG2 DB 0DH, 0AH, 'IN DECIMAL IT IS: $'

.CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX

; PRINTING MESSEGE

LEA DX, MSG1

MOV AH, 9H

INT 21H

; TAKING THE HEX DIGIT

MOV AH, 1H

INT 21H

MOV BL, AL

; PRINTING 1 DIGIT

LEA DX, MSG2

MOV AH, 9H

INT 21H

MOV AH, 2H

MOV DL, 31H

INT 21H

; CONVERTING TO DECIMAL

SUB BL, 11H

MOV AH, 2H

MOV DL, BL

INT 21H

MOV AH, 4CH

INT 21H

MAIN ENDP

END MAIN

; output



**Problem 4: Write a program to display a 10X10 solid box of aseterisks. Hint declare a string in the data segment that specifies the box, and display it with INT 21h, function 9h**

.MODEL SMALL

.STACK 100H

.DATA

asterisks DB '\*\*\*\*\*\*\*\*\*\*', 0DH, 0AH, '$'

.CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX

LEA DX, asterisks ; printing the stars

MOV AH, 9H

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

MOV AH, 4CH ; exit dos

INT 21H

MAIN ENDP

END MAIN

; OUTPUT



**Problem 5: Write a program to (a) display “?”, read three initials, (c) display them in the middle of an 11X11 box of asterisks, and (d) beep the computer.**

.MODEL SMALL

.STACK 100H

.DATA

STAR DB 0DH, 0AH, '\*\*\*\*\*\*\*\*\*\*\*$'

.CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX

; TAKING THE INPUTS with "?" sign

MOV AH, 2H

MOV DL, '?'

INT 21H

MOV AH, 1H

INT 21H

MOV BL, AL

MOV AH, 1H

INT 21H

MOV BH, AL

MOV AH, 1H

INT 21H

MOV CL, AL

; DISPLAYING

LEA DX, STAR

MOV AH, 9H

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

MOV STAR+6, BL

MOV STAR+7, BH

MOV STAR+8, CL

INT 21H

MOV STAR+6, '\*'

MOV STAR+7, '\*'

MOV STAR+8, '\*'

INT 21H

INT 21H

INT 21H

INT 21H

INT 21H

MOV AH, 2H

MOV DL, 7H

INT 21H

; EXIT DOS

MOV AH, 4CH

INT 21H MAIN ENDP

END MAIN

