```
NAME :- DIVYA PRAVIN PATIL
CLASS :- SE COMPUTER
ROLL NO :- 45
BATCH :- B2
EXPERIMENT NO :- 11
TITLE:- PROGRAM FOR BCD ADDITION
AIM :- WRITE AN 8086 ASSEMBLY LANGUAGE PROGRAM FOR 2-DIGIT BCD
ADDITION.

DISPLAY MACRO MSG
        LEA DX,MSG
        MOV AH,09H
        INT 21H
ENDM

DATA SEGMENT
        BUFFER          DB 04 DUP(0)
        MSG1            DB 10,13,"ENTER FIRST NUMBER :- $"
        MSG2            DB 10,13,"ENTER SECOND NUMBER :-$"
        MSG3            DB 10,13,"ADDITION IS.........:-$"
        MSG4            DB 10,13,"INVALID INPUT.......:-$"
        CHART           DB '0123456789'
        STORE_RESULT    DB ?
        TEMP1           DB ?
        TEMP2           DB ?
DATA ENDS

CODE SEGMENT
        ASSUME CS:CODE,DS:DATA
        MOV AX,DATA
        MOV DS,AX

        DISPLAY MSG1
        MOV BX,00H
        CALL KBD_INPUT

        CALL KBD_INPUT

        DISPLAY MSG2
        CALL KBD_INPUT

        CALL KBD_INPUT

        MOV BX,00
        MOV AL,BUFFER[BX]
        MOV CL,04
        ROR AL,CL
        MOV TEMP1,AL

        MOV DH,BUFFER[BX+1]
        ADD DH,TEMP1
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        MOV AL,BUFFER[BX+2]
        MOV CL,04
        ROR AL,CL
        MOV TEMP2,AL

        MOV AL,BUFFER[BX+3]
        ADD AL,TEMP2

        ADD AL,DH

        DAA

        MOV STORE_RESULT,AL
        MOV CH,00H
        ADC CH,00H

        DISPLAY MSG3

        MOV AL,CH
        CALL DISP_CHAR

        MOV AL,STORE_RESULT
        MOV CL,04H
        AND AL,0F0H
        ROR AL,CL
        CALL DISP_CHAR

        MOV AL,STORE_RESULT
        AND AL,0FH
        CALL DISP_CHAR

        JMP LAST

KBD_INPUT PROC NEAR
        MOV AH,01H
        INT 21H
        CMP AL,'0'
        JB ERROR
        CMP AL,'9'
        JA ERROR
        AND AL,0FH
        MOV BUFFER[BX],AL
        INC BX
        RET
        ERROR:DISPLAY MSG4
        JMP LAST
KBD_INPUT ENDP

        DISP_CHAR PROC NEAR
        MOV BX,00
        MOV BL,AL
        MOV DL,CHART[BX]
```

```asm
        MOV AH,02H
        INT 21H
        RET
     DISP_CHAR ENDP

     LAST:MOV AH,4CH
        INT 21H
CODE ENDS
END
```

OUTPUT:-ENTER FIRST NUMBER :- 05

        ENTER SECOND NUMBER :-06

        ADDITION IS.........:-011