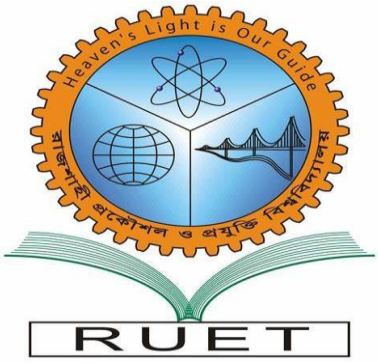

Rajshahi University of Engineering and Technology

Department of Computer Science and Engineering

Course Code : CSE -3110
Course Title : Microprocessor and Assembly Language.
Report No : 03
Submission Date : 26-07-2022

Submitted To : -

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Submitted By : -

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Sec : A

Problem Name : Take a binary input , Reverse it ,complement the result , Count the total number of ones in the input.

Objectives :

1. To learn how to take binary input from user.
2. To implement reverse operation.
3. To implement complement operation.

Code:

```
INCLUDE "EMU8086.INC"
.MODEL SMALL
.STACK 100H
.DATA
COUNT DB 0
ONE DB 0
COMPL DB ?
.CODE
MAIN PROC

     MOV AX,@DATA
     MOV DS,AX


     XOR BX,BX
     MOV AH,1
     PRINT "BINARY INPUT :  "

     INPUT:

        INT 21H
        CMP AL,0DH
        JE END_LOOP
        SUB AL,30H
        SHL BX,1
        OR BL,AL
        INC COUNT
        JMP INPUT

     END_LOOP:

     MOV COMPL,BL
```

```
   MOV COMPL,BL

   PRINTN

   PRINT "REVERSED  : "

   XOR CH,CH
   MOV CL,COUNT

   MOV AH,2
   REVERSE:

       RCR BX,1
       JC OUTPUT_1

       MOV DL,'0'
       INT 21H

       JMP END_IT

       OUTPUT_1:
       INC ONE
       MOV DL,'1'
       INT 21H
       JMP END_IT

   END_IT:
    LOOP REVERSE
```

```
    ADD ONE,30H
    MOV DL,ONE
    MOV AH,2
    INT 21H

    XOR COMPL,11111111B
    XOR CX,CX
    MOV CL,8
    PRINTN
    PRINT "COMPLEMENT IS :"
    COMPLEMENT:

        SHL COMPL,1
        JC OUTPUT_01

        MOV DL,'0'
        INT 21H

        JMP END_THIS

        OUTPUT_01:
            MOV DL,'1'
            INT 21H
        JMP END_THIS

    END_THIS:
     LOOP COMPLEMENT

    RETURN :
       MOV AH,4CH
       INT 21H
   MAIN ENDP
END MAIN
```

Output :

SCR emulator screen (169x55 chars)

```
BINARY INPUT :  11001110
REVERSED  : 01110011
TOTAL ONE IS : 5
COMPLEMENT IS :00110001
```