

LAB REPORT  
ON  
CSE 3110

SUBMITTED TO:

SADIA ZAMAN MISHU

ASSISTANT PROFESSOR

DEPT OF COMPUTER SCIENCE AND ENGINEERING

SUBMITTED BY:

NAFISA SABNAM SHAMA

ROLL:1603093

DEPT OF COMPUTER SCIENCE AND ENGINEERING

**Task 1: Write a program that takes a hex number of 4 digit or less as input and outputs its binary on the next line and count the number of 1's in its reversed binary number.**

**Code:**

```
.MODEL SMALL
.STACK 100H
.DATA

M1 DB 0AH,0DH,"TYPE A HEXA NUMBERM:$"
M2 DB 0AH,0DH,"IN BINARY IT IS : $"
M3 DB 0AH,0DH,"ILLEGAL HEXA DIGIT, TRY AGAIN $"
M4 DB 'REVERSED BINARY $'
M5 DB 0AH,0DH,"THE NUMBER 1 IS : $"

S DW ?
DC DW 16
COUNT DB 0
.CODE
MAIN PROC
    MOV AX,@DATA
    MOV DS,AX
    MOV AH,9
    LEA DX,M1
    INT 21H
    START:

    XOR BX,BX
```

MOV CL,4

MOV AH,1

INT 21H

WHILE\_:

CMP AL,0DH

JE END\_WHILE

CMP AL,'0'

JL ERR

CMP AL,'9'

JG LETTER

AND AL,0FH

JMP SHIFT

LETTER:

CMP AL,'F'

JG ERR

CMP AL,'A'

JL ERR

SUB AL,37H

SHIFT:

SHL BX,CL

OR BL,AL

INT 21H

JMP WHILE\_

END\_WHILE:

MOV S,BX

INT 21H

MOV AH,9

LEA DX,M2

INT 21H

MOV CX,16

MOV AH,2

SHOW:

SHL BX,1

JC ONE

MOV DL,'0'

INT 21H

JMP LOOP1

ONE:

MOV DL,'1'

INT 21H

LOOP1:

LOOP SHOW

MOV AH,2

MOV DL,0AH

INT 21H

MOV AH,2

MOV DL,0DH

INT 21H

JMP LOOOP

ERR:

MOV AH,9

LEA DX,M3

INT 21H

JMP START

LOOOP:

SHR S,1

JC P\_ONE

MOV DL,'0'

INT 21H

DEC DC

CMP DC,0

JE FINAL:

JMP LOOOP

P\_ONE:

INC COUNT

MOV DL,'1'

INT 21H

DEC DC

CMP DC,0

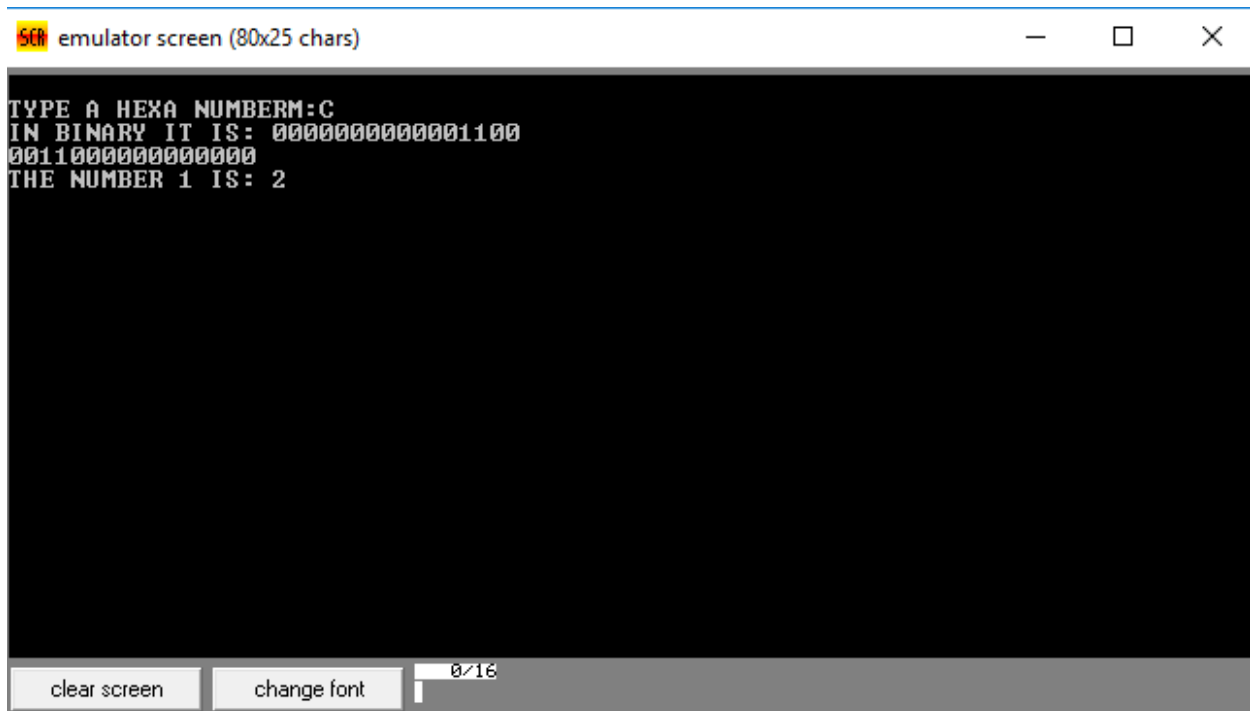
JE FINAL

JMP LOOOP

```
FINAL:
MOV AH,9
LEA DX,M5
INT 21H

MOV AH,2
ADD COUNT,48
MOV DL,COUNT
INT 21H
MOV AH,4CH
INT 21H
MAIN ENDP
END MAIN
```

## Output:



The screenshot shows a window titled "emulator screen (80x25 chars)". The window contains the following text:

```
TYPE A HEXA NUMBER:C
IN BINARY IT IS: 0000000000001100
0011000000000000
THE NUMBER 1 IS: 2
```

At the bottom of the window, there are two buttons: "clear screen" and "change font". To the right of these buttons is a small text box containing "0/16".