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Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Microprocessors and Interfacing

(CSE – 3002)

LAB EXPERIMENT- 4

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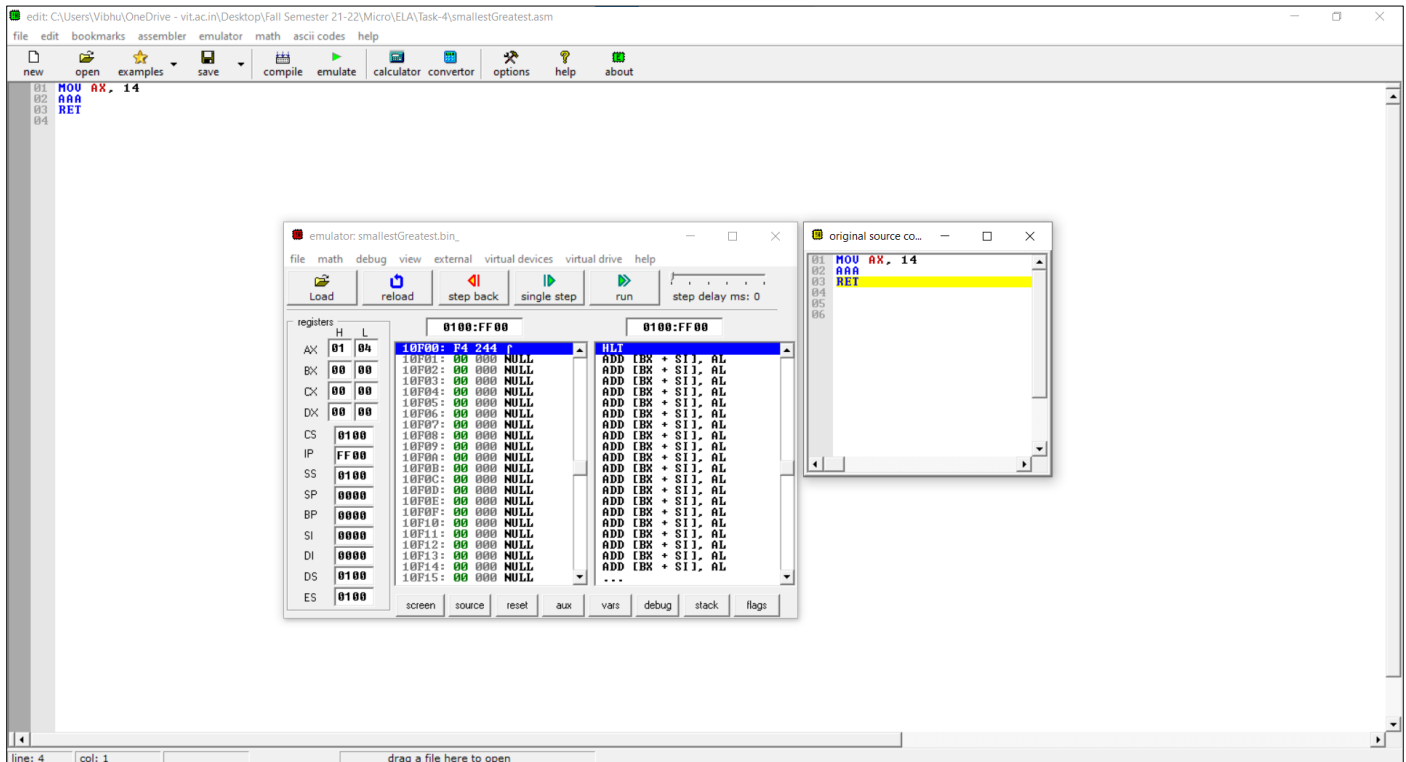
Q1) Write and execute 8086 ALP that involves ASCII Adjustment Instruction.

Ans 1)

CODE:

```
MOV AX, 14
AAA
RET
```

Output:



Q2) Write and execute 8086 ALP to perform Binary to BCD conversion.

Ans 2)

CODE:

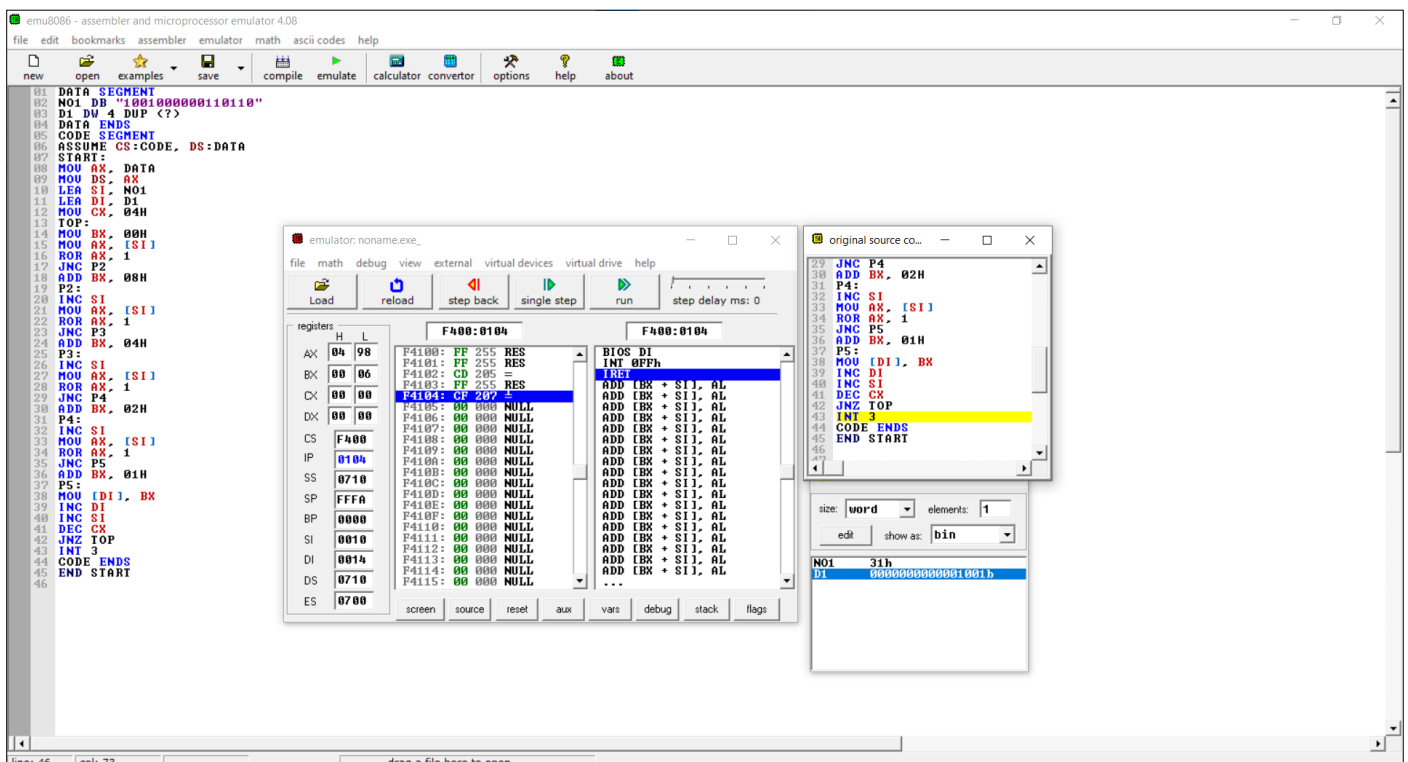
```
DATA SEGMENT
    NO1 DB "1001000000110110"
    D1 DW 4 DUP (?)
DATA ENDS
CODE SEGMENT
ASSUME CS:CODE, DS:DATA
START:
    MOV AX, DATA
    MOV DS, AX
    LEA SI, NO1
    LEA DI, D1
    MOV CX, 04H
TOP:
    MOV BX, 00H
    MOV AX, [SI]
```

```

ROR AX, 1
JNC P2
ADD BX, 08H
P2:
INC SI
MOV AX, [SI]
ROR AX, 1
JNC P3
ADD BX, 04H
P3:
INC SI
MOV AX, [SI]
ROR AX, 1
JNC P4
ADD BX, 02H
P4:
INC SI
MOV AX, [SI]
ROR AX, 1
JNC P5
ADD BX, 01H
P5:
MOV [DI], BX
INC DI
INC SI
DEC CX
JNZ TOP
INT 3
CODE ENDS
END START

```

Output:



Q3) Write and execute 8086 ALP to perform BCD to Binary conversion.

Ans 3)

CODE:

```
DATA_SEG SEGMENT
    BCD DB 25H
    BIN DB ?
DATA_SEG ENDS
```

```
CODE_SEG SEGMENT
    ASSUME CS:CODE_SEG,DS:DATA_SEG
START:
    MOV AX,DATA_SEG
    MOV DS,AX

    MOV AH,BCD
    MOV BH,AH
    AND BH,0FH
    AND AH,0F0H
    ROR AH,04
    MOV CL,10
    MOV AL,AH
    AND AX,00FFH
    MUL CL
    ADD AL,BH
    MOV BIN,AL
    MOV AH,04CH
    INT 21H
CODE_SEG ENDS

END START
```

Output:

