CSE2006 Microprocessors and Interfacing Lab

Exp 1: Arithmetic Instructions

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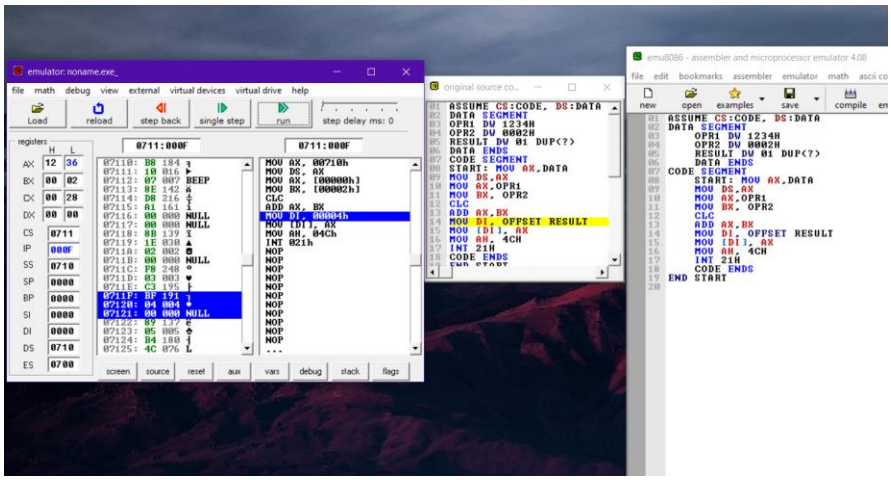
ADD:

```
ASSUME CS:CODE, DS:DATA
DATA SEGMENT
   OPR1 DW 1234H
   OPR2 DW 0002H
   RESULT DW 01 DUP(?)
   DATA ENDS
CODE SEGMENT
   START: MOV AX,DATA
   MOV DS,AX
   MOV AX,OPR1
   MOV BX, OPR2
   CLC
   ADD AX, BX
   MOV DI, OFFSET RESULT
   MOV [DI], AX
   MOV AH, 4CH
   INT 21H
   CODE ENDS
END START
```



Assembly Language Program for:

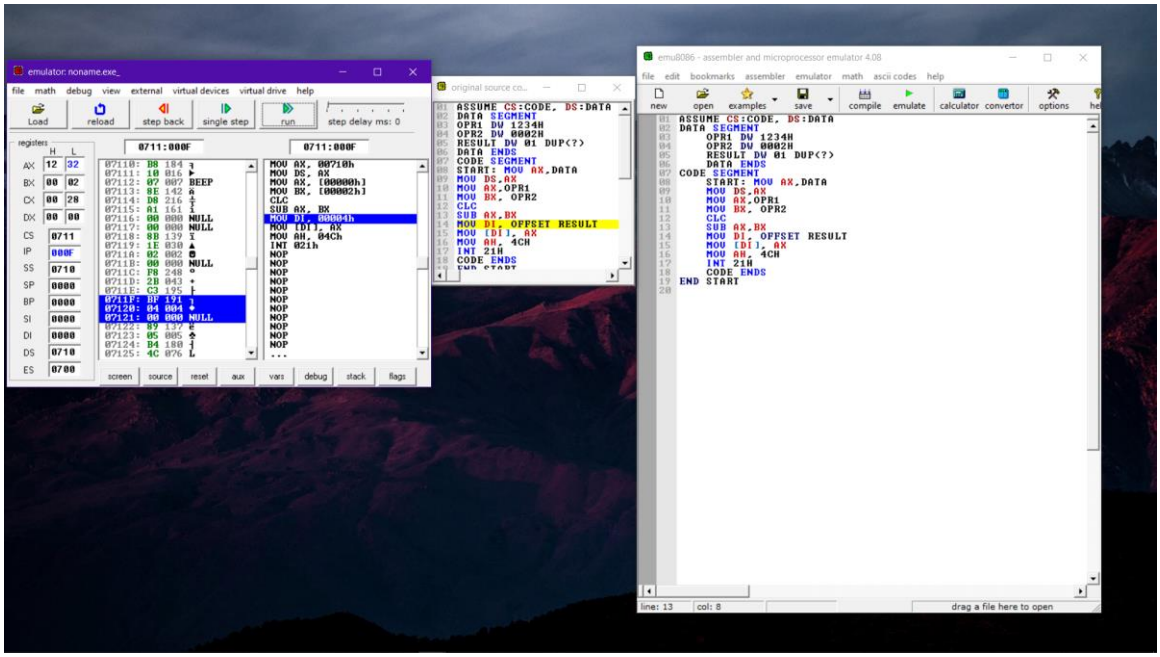
Addition:

```
ASSUME  CS: CODE, DS: DATA
DATA    SEGMENT
OPR1    DW  1234H
OPR2    DW  0002H
RESULT  DW  01 DUP(?)
DATA    ENDS

CODE    SEGMENT
START:  MOV AX, DATA
        MOV DS, AX
        MOV AX, OPR1
        MOV BX, OPR2
        CLC
        ADD AX, BX
        MOV [DI], AX
        MOV AH, 4CH
        INT 21H
CODE    ENDS
END START
```

SUB:

```
ASSUME CS:CODE, DS:DATA
DATA SEGMENT
    OPR1 DW 1234H
    OPR2 DW 0002H
    RESULT DW 01 DUP(?)
    DATA ENDS
CODE SEGMENT
    START: MOV AX,DATA
    MOV DS,AX
    MOV AX,OPR1
    MOV BX, OPR2
    CLC
    SUB AX, BX
    MOV DI, OFFSET RESULT
    MOV [DI], AX
    MOV AH, 4CH
    INT 21H
    CODE ENDS
END START
```



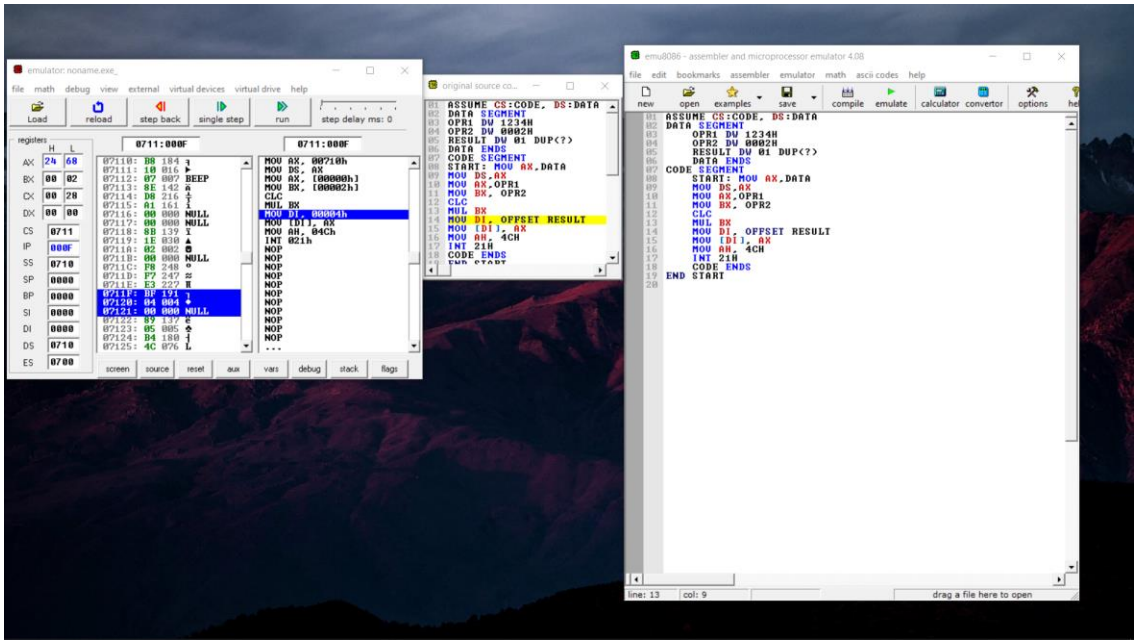
SUBTRACTION :

```
ASSUME CS:CODE, DS:DATA

DATA SEGMENT
    OPR1 DW 1234H
    OPR2 DW 0002H
    RESULT DW 0%DUP(?)
DATA ENDS
CODE SEGMENT
START: MOV AX, DATA
       MOV DS, AX
       MOV AX, OPR1
       MOV BX, OPR2
       CLC
       SUB AX, BX
       MOV DI, OFFSET RESULT
       MOV [DI], AX
       MOV AH, 4CH
       INT 21H
CODE ENDS
END START
```

MUL:

```
ASSUME CS:CODE, DS:DATA
DATA SEGMENT
    OPR1 DW 1234H
    OPR2 DW 0002H
    RESULT DW 01 DUP(?)
    DATA ENDS
CODE SEGMENT
    START: MOV AX,DATA
    MOV DS,AX
    MOV AX,OPR1
    MOV BX, OPR2
    CLC
    MUL BX
    MOV DI, OFFSET RESULT
    MOV [DI], AX
    MOV AH, 4CH
    INT 21H
    CODE ENDS
END START
```

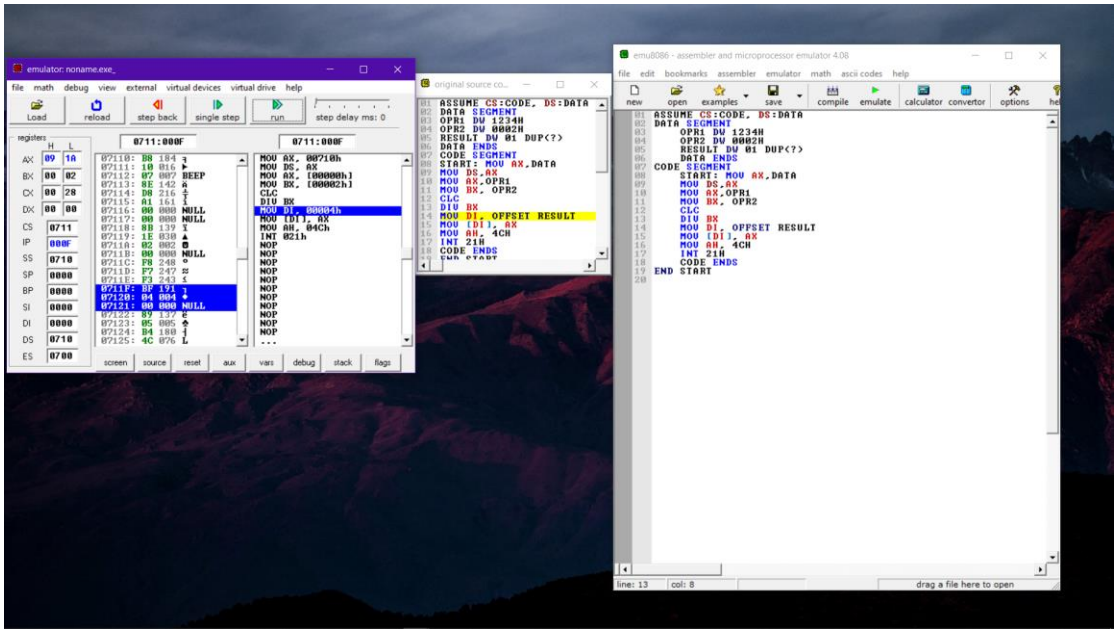


Multiplication

```
ASSUME CS: CODE, DS: DATA
DATA SEGMENT
     OPR1 DW 1234H
     OPR2 DW 0002H
     RESULT DW 01 DUP(0)
DATA ENDS
CODE SEGMENT
START: MOV AX, DATA
       MOV DS, AX
       MOV AX, OPR1
       MOV BX, OPR2
       CLC
       MUL BX
       MOV DI, OFFSET RESULT
       MOV [DI], AX
       MOV AH, 4CH
       INT 21H
CODE ENDS
END START
```

DIV

```
ASSUME CS:CODE, DS:DATA
DATA SEGMENT
    OPR1 DW 1234H
    OPR2 DW 0002H
    RESULT DW 01 DUP(?)
    DATA ENDS
CODE SEGMENT
    START: MOV AX,DATA
    MOV DS,AX
    MOV AX,OPR1
    MOV BX, OPR2
    CLC
    DIV BX
    MOV DI, OFFSET RESULT
    MOV [DI], AX
    MOV AH, 4CH
    INT 21H
    CODE ENDS
END START
```



Division:

```
ASSUME  CS: CODE , D.S: DATA
DATA  SEGMENT
      OPR1  DW  1234H
      OPR2  DW  0002H
      RESULT  DW  01 DUP (?)
DATA  ENDS
CODE  SEGMENT
 START :  MOV AX, DATA
          MOV DS, AX
          MOV AX, OPR1
          MOV BX , OPR2
          CLC
          DIV BX
          MOV DI, OFFSET RESULT
          MOV [DI] , AX
          MOV AH, 4CH
          INT  21 H
CODE  ENDS
END  START
```