QUIZE

Using emu 8086 Program, write a program in assembly language that perform the following tasks, showing the contents:

1- Initialize Ax and Dx registers with the immediate value 1234h and 5678h respectively.
2- Subtract the word content of Ax Reg. from the word contents Dx Reg. with the difference stored in the Dx Reg.

```
MOV AX,1234H

MOV DX,5678H

SUB DX,AX

RET
```

MUL,DIV,INC,DEC Instructions

MUL	Unsigned 8-bit or 16-bit multiplication.
IMUL	Signed 8-bit or 16-bit multiplication.
DIV	Unsigned 8-bit or 16-bit division.
IDIV	Signed 8-bit or 16-bit division.
INC	Increment Register or memory by 1.
DEC	Decrement register or memory by 1.

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Examples of MUL instruction:

1.When multiply unsigned (byte * byte):

Ex1.Write the suitable instructions to multiply unsigned 30h by 20h.

```
MOV BL, 30h        ; BL= 30h
MOV AL , 20h ; AL = 20h
MUL BL             ; AX = AL * BL = 20h* 30h = 0600h
```

2.When multiply unsigned (word * word):

Ex2.Write the suitable instructions to multiply unsigned 1122h by 3344h.

```
MOV BX, 1122h          ; BX= 1122h
MOV AX , 3344h         ; AX = 3344h
MUL BX                 ; DX AX = AX * BX = 1122h* 3344h = 036E 5308h
```

3.When multiply unsigned (byte * word) or unsigned (word * byte):

Ex3.Write the suitable instructions to multiply unsigned 80h by 1F1Ch.

```
MOV BL, 80h            ; BL= 80h
MOV BH, 0              ; BH = 0
MOV AX , 1F1Ch         ; AX = 1F1Ch
MUL BX                 ; DX AX = AX * BX =1F1Ch* 0080h = 000F 8E00h
```

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DIV EXAMPLE

1. The following fragment performs 8-bit unsigned division **(83h/2)**, producing a quotient of **41h** and a remainder of **1**:

```
    mov ax,83h        ; dividend
    mov bl,2          ; divisor
    div bl            ; quotient AL = 41h, remainder
AH = 01h
```

2. The following instructions perform 16-bit unsigned division **(8003h/100h)**, producing a quotient of **80h** and a remainder of **3**.
   Note that DX contains the high part of the dividend, **so it must be cleared** before the DIV instruction executes:

```
  mov dx,0        ; clear high part of the dividend
  mov ax,8003h    ; set low part of the dividend
  mov cx,100h     ; set divisor
  div cx      ; quotient AX = 0080h,remainder DX =
0003h
```

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