CSC 3210 – Assignment #4
Spring 2021
Due 4/13/21, 11:59 PM

1. **(9 points)** Write an assembly program to implement the following.

```
Sum = 0
while X >= 0
        if  (X != 3) AND (X <= (A+3) OR X < (B-3) )
            X = X – 2
            Sum += 1
        else
            X = X – 1
end while
```

   - Use short-circuit evaluation
   - Assume that A, B, and X are 16-bit signed integers variables
   - Assume that A=9, B=8, and X=15
     - **Submit the following:**
       - Rename the asm file using your last name as Lastname1.asm and submit it.
       - Screenshot of the code
       - Then run the code until you reach INVOKE ExitProcess, 0
       - Then take a screenshot of the watch window showing Sum variable content.

2. **(6 points)** Write an assembly program to test if the MSB in the register **al** is set:
   - If it is set, then divide the content of **al** by 8 using the appropriate shift instruction and exit.
   - Else, if it is not set, then multiply the content of **al** by 4 using the appropriate shift instruction and exit.
   - When checking **al MSB,** do not change **al** content.
   - Assume that **al** is equal to the *signed integer* 88h.
   - You need to come up with the appropriate ***mask*** to check the MSB.
   - Run your program using the debugger to verify your answers.
     - **Submit the following:**
       - Rename the asm file using your last name as Lastname2.asm and submit it.
       - Screenshot of the code
       - Then run the code until you reach INVOKE ExitProcess, 0
       - Then take a screenshot of the register window.

Note:

- **Comment header** for .ASM files:

  Student Name

  Class: CSC3210

  Assignment#: 4

  Description: This program …….
- Follow the program standards as presented in your book. Pay more attention to code comments and consistent indentation.
- Create a new project for every question. Do not use one project with multiple .asm files.