CSC 261: Computer Organization and Assembly Language

Summer 2019

Assignment 5

Note: Create one Visual Studio solution per each question. Make sure to rename the folders, say Quesiton 1, Question 2, etc. Put all of them in a folder with the name Assignment-5, zip it and upload it to Canvas. Do not forget to put comments. You must use *windows32 framework* for all the question. I will not grade any assignment that doesn't compile and that is not submitted as a VS solution.

Question 1 (50 points): Write a **non-recursive** algorithm to find the greatest common divisor of two positive numbers.

Hint: This is called Euclidean algorithm and typically discussed in CSC 230.

- Your program should read the two positive integers using dialog boxes. If they are not positive, a message box should be displayed with an appropriate message.
- Your program needs to have a procedure that takes two positive integers as parameters.
- You need to follow *cdecl* protocol for parameter passing.
- Display the valid result returned from your procedure using a message box.

Question 2(50%)

Fibonacci numbers are formally defined as follows.

$$fib(n) = \begin{cases} n \text{ if n} = 0 \text{ or } 1 \\ fib(n-1) + fib(n-2) \text{ otherwise} \end{cases}$$

Write a **recursive** algorithm to find the n^{th} Fibonacci number.

- You should read n using a dialog box. if $n < 0$, an appropriate message box should display that error.
- Valid results should be displayed in a message box.
- You need to follow *cdecl* protocol for parameter passing.