## MAT2440 - Project 2

November 30, 2016

## **Due:** December 7, 2016 by 6:00pm **Instructions:**

The goal of this project is to put into practice a version of some of the algorithms we have discussed in the course. You may work in groups of two. Your task is to write these two separate programs:

- 1. Write a program that computes n! recursively.
- 2. Write a program that computes the sum of  $1^2 + 2^2 + \cdots + n^2$  recursively for any positive integer n.

In both cases n is defined by user input. You can write your programs in whatever language you choose. You can consult outside source material for help, but you must write your own code. **DO NOT COPY AND PASTE SOMEONE ELSE'S CODE.** 

The final product should include two distinct files that satisfy the above requirements. You must also include your pseudocode for each program. These are to be written (or typed) separately from the programs.

You can turn in your work by emailing it to me (nmelissaris@gradcenter.cuny.edu). Your subject will start with MAT2440. I won't search for your emails outside my MAT2440 folder so follow the instructions carefully. Your files will be named in the following example format: If I was submitting a project with my friend Bill Gates, our code for the first exercise (a Python script in this case) would be named: nmelissaris\_bgates\_1.py and the pseudocode would be named nmelissaris\_bgates\_1.txt

Your programs, this time will be graded by an automated script so you need to follow the instructions very very carefully: Your output will be 2 lines. In the first line the *n* will be printed. In the second line, the result will be printed. For example, your first program for input 3 will output:

Each program you submit will be graded out of 10 points. I will review each program's code and I will test each one multiple times with a variety of different <u>valid</u> inputs.

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