CSC 210 – In-class 04 –Recursion Part 1 (Chapter 6)

You are to create a Mathematics program (**LASTNAME_Recusive.cpp**), which allow the user to select the calculation based on the provided information.

Menu will be presented as follow and this will run repeatedly until option 'G' or 'g' is chosen.

A. Sum of all integers from 1 to N (1 + 2 + 3 + … + N)
B. Sum square of all integers from 1 to N ($1^2 + 2^2 + 3^2 + 4^2 + … + N^2$)
C. Sum square-root of all integers from 1 to N ($1^{1/2} + 2^{1/2} + 3^{1/2} + 4^{1/2} + … + N^{1/2}$)
D. Exponential (base ^{N})
E. Factorial (N!)
F. Sum power – some of all integers from 1 to N using power K ($1^K + 2^K + 3^K + … + N^K$)
G. Exit

If option A, B, C, or E is selected, then you will ask user to enter value of *N*
If option D is selected, then you will ask user to enter value of *base* and power *N*
If option F is selected, then you will ask user to enter value of *N* and power *K*

Recursive Functions

You will create 6 recursive functions (or methods); one for each of the menu.
Name your function using the following convention

XXX_sumNa
XXX_sumSquareNb
XXX_sumSquareRootNc
XXX_expoBaseNd
XXX_factorialNa
XXX_sumPowerNb

Where XXX is your first initials and abcd are last 4 digit of your student ID