EE 3223 (Fall 2015)

Assignment #1

Due: Sep 3 by 11:59:59 pm

Submission Procedure:

Create a folder called <LastNameFirstName>. Name the file for problem 1 as 01.cpp, and that of the problem 2 as 02.cpp. Place them in the folder <LastNameFirstName>. Compress (zip) the folder to get a file called <LastNameFirstName>.zip. Upload this file in **blackboard** by the due date.

Problem 1 (5 points)

Write a C++ program for the following. **Do not try to generalize this program into an equation. The goal is to practice iterations.**

There is an old story that the emperor wanted to thank the inventor of the game of chess and asked the inventor to name his reward. The inventor asked for one grain of rice for the first square, 2 for the second, 4 for the third, and so on, doubling for each of the 64 squares. That may sound modest, but there wasn't that much rice in the empire!

Write a function to calculate the number of squares that are required to give the inventor a stated number of grains of rice that is provided as the function's input. For example, the function should calculate the number of squares that are required to earn at least 1000 grains of rice, at least 1,000,000 grains, at least 1,000,000,000 grains, etc. You'll need a loop, of course, and probably an int to keep track of which square you are at, an int to keep the number of grains on the current square, and an int to keep track of grains of all previous squares. We suggest that you print the value of all your variables for each iteration of the loop so that you can see what's going on. Demonstrate that the function works using sample inputs from a main function.

Problem 2 (5 points)

Write a function to read one valid double. Write another function that will compute the product of n numbers (where n is an input to the function), and return the product. Write a main function that uses the above 2 functions to read a few doubles and compute their product. Here is a the expected output:

```
Input 5 doubles:
1
2
3
4
5

Product: 120
```