

**CSC 228 Data Structures and Algorithms**  
**Fall 2017**  
**Instructor: Dr. Natarajan Meghanathan**

**Bonus Project (Due by: August 30, 1 PM)**

The factorial of an integer  $n$  is computed as  $1*2*3*...*n$ . The factorial of an integer could be computed using an iterative or recursive approach.

The recurrence relation to compute the factorial( $n$ ) is as follows:

factorial( $n$ ) =  $n * \text{factorial}(n-1)$ , for  $n > 0$

factorial( $n$ ) = 1, for  $n = 0$

In this Bonus Project, you will implement the iterative and recursive approaches to compute the factorial of an integer. Run your iterative and recursive programs for integer values ranging from 2 to 15 (or until your program crashes due to running out of memory!)

**Submission Report:**

- (1) C++ or Java code for the iterative and recursive implementations to compute the factorial of an integer
- (2) Screenshots illustrating the execution of your code for both the implementations for the entire range of integer values used.

**Submission Video:**

A video recording your explanation of the code for the iterative and recursive implementations.

If you are not able to record in Canvas, you could use any of the desktop recording software and upload your recorded video.

You could try using one of the **desktop recording software** (or anything of your choice):

CamStudio: <http://sourceforge.net/projects/camstudio/files/legacy/>

Debut: <http://www.nchsoftware.com/capture/index.html>