CSCE 5640 Fall 2016
Project #2
Due: December 9, 2016 on Blackboard

For this project you may work in groups of two. Each member of your group **must** sign up on the corresponding project sheet in order to receive a grade. Your group will meet with the instructors or the TA during Finals week to demonstrate their project.

In this project you will develop a deadlock detection algorithm to determine whether a given system state, s, which is represented by a General Resource Graph, G(V,E), contains a set of processes that are deadlocked. The system is continuously keeping track of all the resource requests issued by processes and corresponding resource allocations. The state of the system is maintained by a set of edges, E = $\{(p_i, r_k), (r_l, p_j)\}$, which represents all requests and allocation in system state s. You may assume that the system contains only **reusable resources**.

The **input** to your algorithm may be an adjacency matrix or an edge list representing the set E of system state s. The **output** of your algorithm is the list of processes that are deadlocked in state s. Your algorithm will have to execute on any syntactically correct input.

Deliverables:

1. A program that implements your deadlock detection algorithm.
2. At least three examples of executing the algorithm on three different General Resource Graphs
3. A short report (2 -3 pages) describing the algorithm and a discussion of potential improvements that could lead to a more efficient deadlock detection.

Your group will meet with the instructors or TA during Finals week to demonstrate the working of the deadlock detection system that you developed and to answer any questions regarding its implementation. Your program must execute on the CSE platform and should be implemented in C/C++.

Have FUN!!