Design and Analysis of Algorithms
Spring 2016 - Sec(C, D & E)
Assignment 4
Submission Date: April 25, 2016

Problem 1:
Implement the algorithm that takes a directed graph as input, compute the strongly connected components as discussed in class and output the components in a text file. Also construct the component graph for the input graph. Download the file SCC.txt and test your code on that input. The file contains the edges of a directed graph. Vertices are labeled as positive integers from 1 to 875714. Every row indicates an edge, the vertex label in first column is the tail and the vertex label in second column is the head (recall the graph is directed, and the edges are directed from the first column vertex to the second column vertex). So for example, the 9^{th} row looks like : "2 47646". This just means that the vertex with label 2 has an outgoing edge to the vertex with label 47646.

In the output file you must first output the size of the strongly connected component and then its vertices in comma separated list.

Note: First test your code on smaller inputs. Also manage your memory carefully because the size of the graph is very large.