Project 2

ITCS 6114/8114 Fall 2016

Due November 28

Write a program to process a directed graph as follows:

1. Read in the number of vertices V and the number of edges E of a directed graph G followed by its E directed edges, each in the form u, v where 1 <= u, v <= V representing a directed edge <u, v>.
2. Set up and print the adjacency matrix representation of G.
3. Determine whether G has a directed cycle.
4. If G has a cycle, print a cycle, otherwise print a topological order of the vertices.
5. Assume each edge has weight 1, find all pairs shortest paths.

You should document your program, analyze the complexity of your algorithms, and show the outputs from sample data sets that Mr. Harish Yalamanchili (TA) will post on Moodle2.