Assignment 2

Design & Analysis of Algorithms Lab

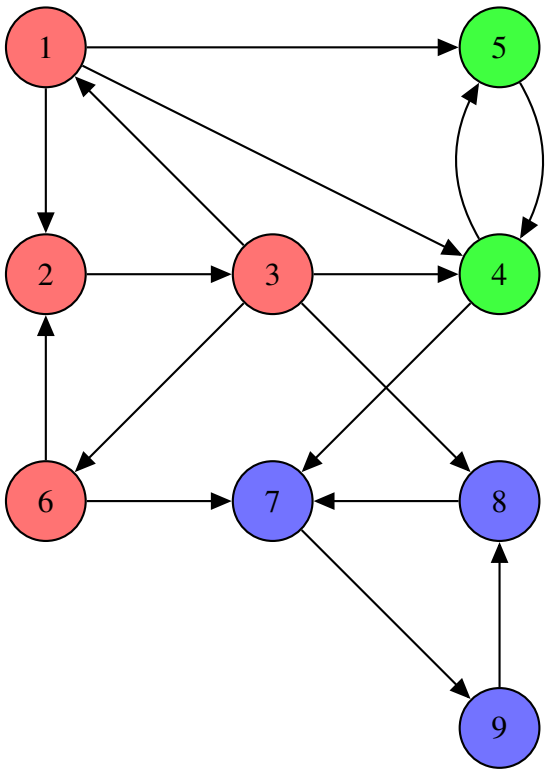
January 11, 2022

1. A directed graph is strongly connected if there is a path between all pairs of vertices. A strongly connected component (SCC) of a directed graph is a maximal strongly connected subgraph. For example, there are three SCCs in the following graph. Given a directed graph, write a program that prints the components and their associated vertices. Also, write a program that prints the components of the component graph in a topologically sorted order. Note that disconnected graphs are not being provided as inputs.

   Input:

   Vertices: 9
   Directed Edges
   1 2
   4 7
   2 3
   3 4
   3 8
   3 1
   1 4
   5 4
   1 5
   4 5
   6 2
   3 6
   7 9
   8 7
   6 7
   9 8
   -1 (indicates end of input)
   Output:

   Component 1: 1 2 3 6
   Component 2: 4 5
   Component 3: 7 8 9



Topological Sort: ((1, 2, 3, 6), (4, 5), (7, 8, 9))

Submission Instruction:

File Name: A2_RollNo.c/cpp
Email to: *pds2016autumn@gmail.com* with **subject line**: A2_RollNo