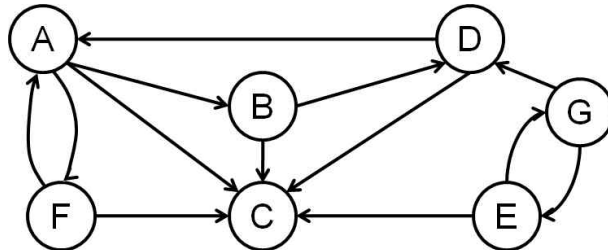


Algorithm Analysis Homework 4

Due by 5/3(Thu.) through hisnet

Write a program that find strongly connected component for the following graph.



Input file for above graph is named as 'hw4.data' and available at hisnet. Input file represents data in adjacency matrix form as follows. (There are white spaces – such as tab or space – between data.)

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| A | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| B | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| F | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| G | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

First, read input file and construct *Adj* array and adjacency list in alphabetical order. Then apply SCC algorithm discussed in class.

The program should print out followings.

- 1) Array of adjacency list of above graph
- 2) Discovery time and finish time of each vertex after step1
- 3) Array of adjacency list of transpose graph after step2
- 4) Discovery time and finish time of each vertex after step3
- 5) SCC result

for example,

SCC1: vertex A, F

SCC2: vertex E, G

.....

Try to make your output as neat as possible, so that other person can see what you have done clearly.