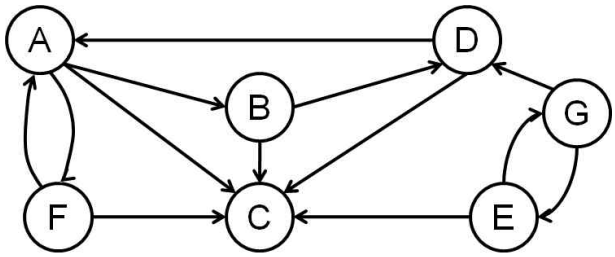
Algorithm Analysis Homework 4

Due by 5/13(Fri.) through LMS

Write a program that compute transpose of a graph.

Input graph will be represented as matrix. For example, the following sample graph will be represented as follows.



	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

Assume number of nodes in your graph is less than or equal to 20. First, your program reads input file named 'hw4_data.txt' (It is directed graph this time) and construct *Adj* array and adjacency list in alphabetical order for a given input graph. Then compute transpose of the graph.

The program should print out followings.

1) Array of adjacency list of above graph
2) Array of adjacency list of transpose graph

Try to make your output as neat as possible, so that other person can see what you have done clearly. And you should use 'C/C++(extension is cpp)' language for homeworks as described in syllabus. You may use any feature in C++ including STL. Test your program with above example and several other graphs.

Note

1) Try to make your output as neat as possible, so that other person can see what you have done clearly.
2) Write program in C++. You may use any feature in C++ including STL.
3) If the program does not compile, you will get no point. Make sure that your program runs in g++.
4) Test your program with above example and several other graphs..
5) At header part of comment, list all the references you used when you do this homework.

   For ex)

   (1) 강의 slide chapter 16.

   (2) Blog: ** URL here **

   (3) book: "Algorithm analysis in C++" by Someone