Tarento’s coding problem

The mentioned problem in subsequent pages can be attempted in your preferred programming language. The list is mentioned below.

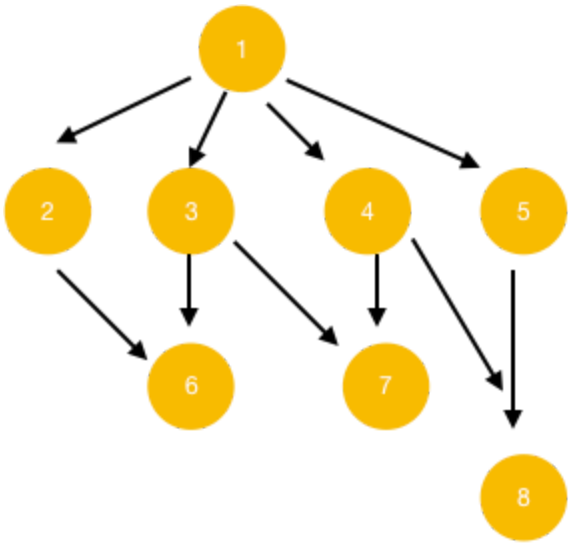
Repository	Commit your code at GIT / BITBUCKET etc as public repository.
Allowed language	C, C++, JAVA, SWIFT, OBJ-C, ANDROID, PYTHON

We encourage your to following coding principle

- Don’t Repeat Yourself (DRY)
- Single responsibility principle
- Modular so create as many functions as you can.
- Flaunt your object oriented programming or functional programming understanding

Question 1

You are given a DAG (Directed Acyclic Graph) which may be disjointed (this represents courses in a university that must be taken in a particular order, but may represent different streams). For each such graph, generate all possible paths that originate from a particular node. For example, in the following graph assume that all edges point downward



You should generate following path from “1”

- 1 -> 2 -> 6
- 1 -> 3 -> 7
- 1 -> 3 -> 6
- 1 -> 4 -> 7
- 1 -> 4 -> 8
- 1 -> 5 -> 8

For extra credit

- Add procedure to create the nodes & its linkage in a configurable way.

Question 2

You are given three strings assuming the length of each string is equal and equal to N.

$P = P_1P_2P_3P_4P_5 \ldots \ldots\ldots \ldots P_{(n-1)}P_n$
$Q = Q_1Q_2Q_3Q_4Q_5 \ldots \ldots\ldots \ldots Q_{(n-1)}Q_n$
$R = R_1R_2R_3R_4R_5 \ldots \ldots\ldots \ldots R_{(n-1)}R_n$

Now mix all three strings to generate a new string S that is as follows

$S = P_1Q_1R_1P_2Q_2R_2 \ldots \ldots\ldots \ldots P_{(n-1)}Q_{(n-1)}R_{(n-1)}P_nQ_nR_n$

You are supposed to use “recursive” function to achieve mixing for all three string.