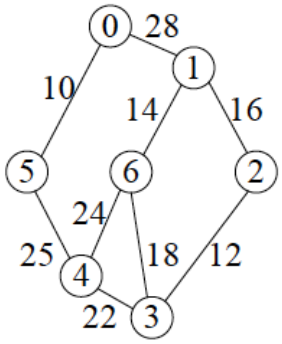
Chapter 6 Homework

Due date: Jan. 11, 2018

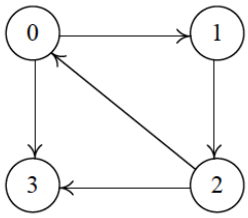
Program Exercises

1. Write a C function that finds a minimum cost spanning tree using Sollin's algorithm.
   Requirements:
   a. The input of the function is a graph represented by an adjacency cost matrix (you may adopt the following as an example of input).



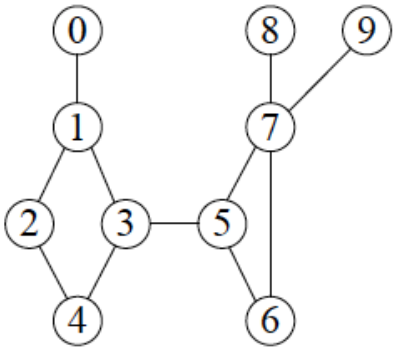
   b. The output of the function is the minimum cost spanning tree represented by an adjacency cost matrix.

2. Write a C function to obtain the transitive closure matrix A^+ and the reflexive transitive closure matrix A^* of the following graph.



   Requirements:
   a. Output is the matrices of A^+ and A^*

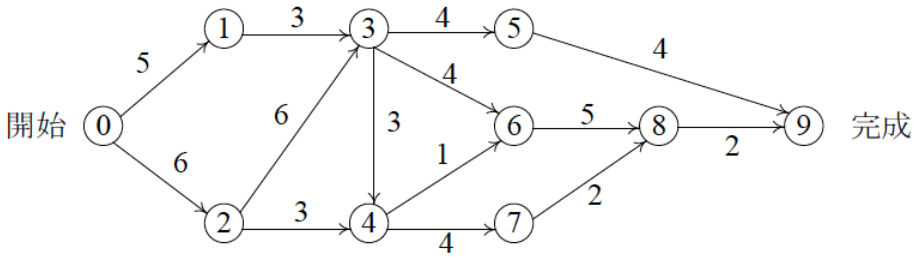
3. Write a C function to perform depth first search of a graph.
   Requirements:
   a. The input is a graph represented by the adjacency matrix (you may adopt the following graph as an example of input).



b. The output is a spanning tree of the input graph represented by the adjacency matrix.

4. Write a C function *to* find all articulation points of a graph.
   Requirements:
   a. The input is a graph represented by the adjacency matrix (you may adopt the graph in **Program Exercise 3(a)** as an example of input).
   b. Print out all the articulation points of the input graph.

5. Write a C function to calculate and output the $e(i)$ and $l(i)$, for all activities i, in an AOE network.
   Requirements:
   a. The input is an AOE network represented by the adjacency cost matrix (you may adopt the following graph as an example of input)



   b. Output a table to summarize $e(i)$, $l(i)$, criticality. If the AOE network is not feasible, print out a string to indicate that this AOE network is not feasible.