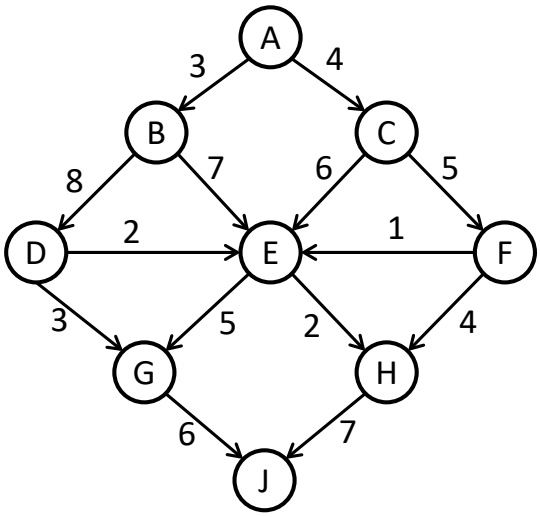
Tutorial 09 Dijkstra

Introduction

In this tutorial, you will gain better understanding about Dijkstra algorithm for pathfinding. Refer to Lecture 07 (slides 10-23).

Task 1. Dijkstra

The following directed non-negative weighted graph shows 9 nodes and the connections among them with the corresponding costs.



Apply Dijkstra algorithm to find the shortest path from node A to node J.

(a) What is the sequence of nodes that gives you the shortest path from node A to node J after applying Dijkstra algorithm?

(b) What is the total cost for the shortest path from node A to node J that you obtained from Dijkstra?

Task 2. Enumeration of all Possible Paths

Enumerate all possible paths from node A to node J. Compute the total cost for each possible path.

(a) How many different paths are there from node A to node J?

(b) Identify the smallest total cost among all possible paths. Is this smallest total cost the same as the value you obtained from Task 1 (b)?

Task 3. Complete the Canvas Quiz

Complete the quiz "Tutorial 09" on the Canvas course page (Assignments > Tutorial 09) before the psted deadline.