1 Exercises

Problem 1. Consider the following edge-weighted digraph:

Now suppose we fix the source vertex to be vertex 0 and run Dijkstra's algorithm on the above graph.

a. What are the states of the distTo and edgeTo arrays?

b. Is there a path from the source (vertex 0) to vertex 6? If so, what is it and what is its length?

2 Solutions to Exercises

Solution 1.

a.	v	distTo[v]	edgeTo[v]	
	0	0.00	null	
	1	1.05	5->1	0.32
	2	0.26	0->2	0.26
	3	0.99	7->3	0.39
	4	0.38	0->4	0.38
	5	0.73	4->5	0.35
	6	1.51	3->6	0.52
	7	0.60	2->7	0.34

b. Yes, the path is 0 -> 2 0.26 2 -> 7 0.34 7 -> 3 0.39 3 -> 6 0.52, and its length is 1.51