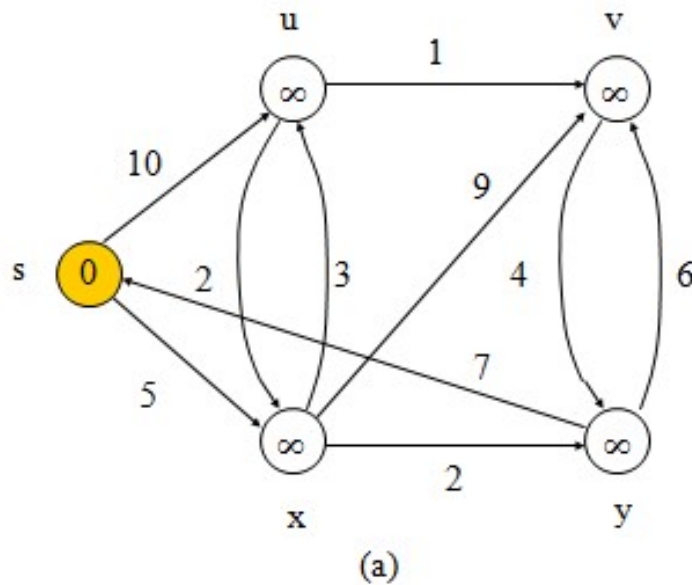


Week 4: In-Lecture Exercise:

Given the following directed graph and the weights of their edges



Use Dijkstra's algorithm to find the shortest path from s to v. Backtracking is required:

Solution:

s	u	v	x	y	S
0/NIL	∞ /NIL	∞ /NIL	∞ /NIL	∞ /NIL	{s}
0/NIL	10/s	∞ /NIL	5/s	∞ /NIL	{s, x}
0/NIL	8/x	14/x	5/s	7/x	{s, x, y}
0/NIL	8/x	13/y	5/s	7/x	{s, x, y, u}
0/NIL	8/x	9/u	5/s	7/x	{s, x, y, u, v}
0/NIL	8/x	9/u	5/s	7/x	

Back tracking:

v -> u -> x -> s