CSCI 2270 Lecture Notes

4/15/2019

Dijkstra’s Algorithm

* find the shortest path from starting node to all for other nodes in the graph
* works for weighted graphs unlike BFS
* does not work for negative valued weights or longest path

1. mark all nodes unvisited. create a set of all the unvisited nodes
2. Assign infinite (tentative) distance to each node
3. Consider all of current node’s unvisited neighbors and calculate their tentative distances through the current node. Update them if they are smaller
4. After considering all neighbors of current node, mark it visited
5. if destination node has been marked visited or smallest distance among unvisted nodes is infinity, stop
6. Otherwise, select unvisited node with smallest distance, set as current node and go back to step 3