

```

1 var fs = require('fs');
2 var storedCollabsByPersonFile = "./collabsByPerson.json";
3 var vertices = JSON.parse(fs.readFileSync(storedCollabsByPersonFile, 'utf8'));
4
5 dijk = function (source, target, graph){
6
7     var dists = {};
8     var prev = {}
9     var path = []
10    if (graph) {
11        vertices = graph;
12    }
13    vertices = JSON.parse(JSON.stringify(vertices));
14
15    //Set initial distances to infinity (and beyond) and set neighbor
16    //on shortest path from the source to undefined for all vertices
17    Object.keys(vertices).forEach((key) => {
18        dists[key] = Infinity;
19        prev[key] = undefined;
20    });
21
22    //set distance from source to source to be 0
23    dists[source] = 0;
24    //start algorithm at the source
25    var currentVertex = source;
26    //while vertices are still graph
27    while (Object.keys(vertices).length > 0){
28        //preset minDistance not visited yet to infinity
29        var minDist = Infinity;
30
31        //find unvisited node with minimum distance from source
32        Object.keys(vertices).forEach((vertex) =>{
33            var vertDist = dists[vertex];
34            if(dists[vertex] < minDist) {
35                minDist = dists[vertex];
36                currentVertex = vertex;
37            }
38        });
39
40        //visit this minimum distance node by checking it's edges and updating
41        //it's neighbors if necessary.
42

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43 //store edges before deleting object
44 var currentEdges = vertices[currentVertex];
45 //delete the current vertex from graph because we have now visited it
46 delete vertices[currentVertex];
47
48 // If no more edges, no path is possible
49 if (!currentEdges) {
50     return [];
51 } else {
52     //find new shortest paths to all neighboring vertices if available
53     Object.keys(currentEdges).forEach((neighbor) => {
54         //1.0/currentEdges[neighbor] is the distance to this neighbor node
55         //the reason we use this reciprocal is to give shorter distance
56         //between 2 nodes with lots of collabs with eachother.
57         //adding the distance up to this point
58         var testDist = (1.0/currentEdges[neighbor])+dists[currentVertex];
59         if(testDist < dists[neighbor]){
60             prev[neighbor] = currentVertex;
61             dists[neighbor] = testDist;
62         }
63     });
64
65     //if our current vertex is the target, go down
66     //the prev tree to find the whole path
67     if(currentVertex === target){
68         //prepend the target to the list
69         path.unshift(currentVertex);
70
71         while(prev[currentVertex] != undefined){
72             //prepend prev to list and set new current to be the previous
73             path.unshift(prev[currentVertex])
74             currentVertex = prev[currentVertex]
75         }
76         return path;
77     }
78 }
79 }
80 }
81
82 module.exports = dijk;

```