

Dijkstra:

An example that will step through Dijkstra's Algorithm to find the shortest route from the origin O to the destination T.

<http://optlab-server.sce.carleton.ca/POAnimations2007/DijkstrasAlgo.html>

a short video example the dijkstra's algorithm.:

<https://www.youtube.com/watch?v=0nVYi3o161A>

<http://www.marcinkossakowski.com/finding-shortest-path-using-dijkstras-algorithm/>

Dijkstra's algorithm can be described as a generalized form of breadth-first search, in which the order of traversed nodes is not determined by number of edges from the root, but as a distance from the root (sum of weights of all edges along the path from root to the given node). As a consequence Dijkstra's algorithm processes only those nodes for which the shortest path was already discovered.

The algorithm stores all nodes in a priority queue ordered by distance of the node from the root – in the first iteration of the algorithm, only root has distance set to 0, distance of all other nodes is equal to infinity. Then in each step Dijkstra's algorithm picks from the queue a node with the highest priority (least distance from the root) and processes it and reevaluates distances of all unprocessed descendants of the node.