

2. a I would use ~~Dijkstra's~~ Dijkstra's algorithm. Dijkstra's algorithm, most often, is used to find the shortest path to a target node from a source node. Dijkstra's algorithm, using the source node, builds a set of nodes with the least distance to the source node. This is reminiscent of greedy algorithm by virtue of finding the shortest path from a set node; Producing, a globally optimized solution. One ~~disadvantage~~ advantage, although, a double edge search, is a faster run time than Bellman-Ford's algorithm but an inability to deal with negatively weighted edges.

To implement Dijkstra's algorithm some ~~changes~~ changes are needed.

The waiting time at a station needs calculations and to produce a minimum cost journey.

The helper matrix is referenced to ensure minimum cost from source node to destination node.

To find the next train that can be caught to ~~the~~ travel to the next station is given by this formula:

The time it takes to get between two adjacent stations u and v added to how frequently the

train stops at a ~~stop~~ on its way to v multiplied by a arbitrary index subtracting by the start time.

I would initialize 2 arrays for the shortest time and boolean array.

I would initialize the greatest value and false for the arrays.

After calculating the number of vertices from given time in adjacency vertices, find the subsequent vertex to ~~the~~ run calculating check its neighboring nodes and calculate the cost of those nodes. If minimum cost is undetermined, then update min. cost, and repeat.

b. It is $O(V^3)$.

c. It implements Dijkstra's algorithm.

d. Since the existing code handles one piece of data per edge, it could ~~do~~ do this to help me implement my algorithm: Take into account the waiting time at station to get a connecting train and the time of the connecting train.

e. Current complexity is $O(V^3)$. It can be optimized to a complexity of $O(E + V \log V)$ by implementation of minimum priority queue.