

Running Time

Because I use topological sort, every node and every edge just need travel one time. So, running time is $O(V+E)$. It is linear time.

Algorithms

I use topological sort. Every time, I find a node which in-degree is 0. Then, if start at this node is longer, I start at it. Else, I go through this node. Next, I find other nodes which is after this node, count and update their distance by the distance of present node and reduce their in-degree. Besides, I use an array to record the path, I update it synchronously. Every time I find a 0-in-degree node, I compare its' distance, if it is longer than my longest path, I update my answer.