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Game of Nodes Analysis

1. Which algorithm is optimal for the white walker search?
    a. I used the nearest neighbor algorithm for the white walker search in which the closest node to the current node is taken until it reaches another node which has been visited. If not all nodes are visited when a visited node is encountered, it backtracks to a previous node until an unvisited node is available in the current nodes edge list.
2. What is the time complexity for the white walker search?
    a. Assuming all nodes must be visited in which there are n nodes but backtracking is available, the time complexity is O(n logn(n)).
3. Which algorithm is optimal for the Jon Snow search?
    a. I used Dijkstra's Algorithm for the Jon Snow search. Dijkstra's works by testing each possible path to the destination and choosing the shortest one.
4. What is the time complexity for the Jon Snow search?
    a. Dijkstra's has a runtime of O(E log(n)) where n is the number of nodes and E is the number of edges.