For lab 4 you wrote a program that created a maze where each cell was reachable from any other cell and there was a unique path from the start to the destination. Your task for this lab consists of implementing two algorithms to solve the maze you created: breadth-first search and depth-first search. You must apply the two algorithms to find the path from the start point to the end point and print the path found by each algorithm and its length (since the path is unique, both algorithms should give the same results). You must use a queue to implement breadth-first search and a stack to implement depth-first search (the recursive solution is not allowed). You may use the implementations of stacks and queues provided by Java or create your own. Compare the running times of your algorithms for different values of $n$.

As usual, write a report describing your results.