

Data Structures and Algorithms 1

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Pathfinding

I chose to create two pathfinding algorithms that will find the shortest path between two points on a 2D grid with obstacles randomly scattered throughout it

The algorithms I have implemented are the Lee algorithm and the A Star algorithm.

Data structures used

2D Array

- Stores the 2D grid of values/nodes

Set

- $O(\log(N))$

Vector

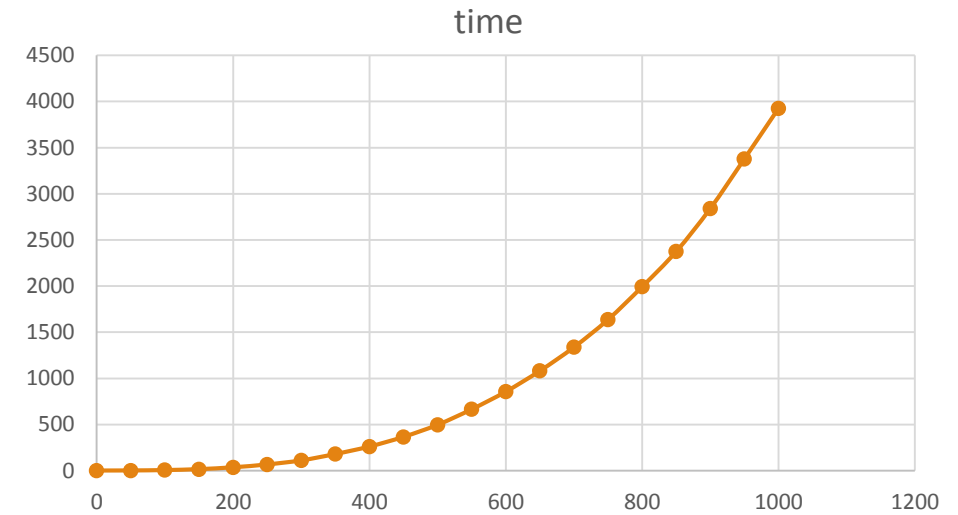
- $O(N)$
- Only used to store four items, good use of cache

Graph:

Y axis = time taken

X axis = size of grid
width and height

Lee Algorithm
 $O(\log(N))$



A Star Algorithm
 $O(N)$

