

Homework #1

Plan:

$$2+7+1+2+4+1=17$$

Using Dijkstra's algorithm, find the shortest path from the bottom left square to the top right square.

1	3	9	9	1
5	10	<u>1</u>	8	4
<u>2</u>	7	8	<u>2</u>	6

Each square can have 4 moving spots located in each corner, which allows the path to travel through the entire workspace.

START:

Bottom Left square is starting position and from this square, it will check all of its possible surroundings to choose the lowest value weighted square to travel to next.

The path can be diagonal, right, left, up, down. Obviously there will be specific positions where the path can only take

"a particular direction."

The max number of paths that can be taken from a specific position is 7 as if the path is closer to the middle of the field, then it is surrounded by 8 possible squares (4 diagonal neighbours and 4 direct neighbours). The max is 7 as the path taken to get to the specific square would be offlimits as to find the shortest possible path, you would not back track on the path.

Dijkstra's Implementation:

For each node (square on the field), check what its lowest neighbour is,