

## LinelandNavigation Write-Up

Isaac Abboudi

December 23

In this program, the object is to get from 0, on a number line, to an integer goal  $g$ . In my implementation I used an array to simulate the number line. All indices are initialized to 0 and when a mined segment is added, those indices denoting the segment are set to 1. In `SolveIt()`, I use a while loop to simulate the traversal through the number line. If a move forward cannot be made because it will end up landing on a mine, we branch to make a move back. The goal is to minimize the amount of steps taken backward, so at the first move back, I record the 'cushion.' That is, the amount of steps back I could have taken, and then only move backward the minimum required to circumvent this mined segment. Then with each subsequent move backward, we 'tack on' that distance to the cushion, since I could've taken a larger step back to begin with. If I've run out of cushion, I initialize a new one and account for the extra jump.