1. Part (2) can fail if the initial heading is off by a non-trivial amount. An incorrect initial heading can lead to progressively worse position deviation depending on the distance between the start position and the end position. A 1 degree heading error will case an 8cm position deviation over a distance of .5 m
2. The position error allows us to determine the distance between the robot’s current position and the goal position. This is used to determine how far the robot needs to travel.
3. The heading error is the angle between the robot’s initial heading and the heading required to reach the target coordinate. We use the heading error to rotate the robot around a point until it is facing the target position.
4. Bearing error is used to determine the direction that the robot should be facing once it reaches its final position.




10. In the current configuration, the robot would collide with any obstacle between it and its goal position.

13. ByteMe