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# STDR Open-Loop Control

This assignment simulates a robot moving across a maze. No sensors are used to guide the robot. Lateral and rotational movements are hard-coded into the open loop commander file in the ROS package. Here we use a GUI that shows an eagle-eye view of the maze, where the robot is able to move forward across the x-y plane, or turn left or right along the z-axis. The goal of the robot is to travel from the lower-left corner to the upper-left corner of the maze without crashing into any obstacles. The open loop commander file was edited by copying code blocks that caused either lateral or rotational movement of the robot, and changing the loop duration or yaw direction.

**Difficulties:**

The simulation app seemed to incorporate randomness in the trajectory of the robot. Occasionally, running the final simulation would cause the robot to crash into a wall, while in other iterations it would clear the maze with no collisions. This created problems as the code got longer, as it became difficult to judge how long each move's duration should be. This also made it harder to judge the impact of changing duration and/or yaw values. I found it useful to position the robot as far away as possible from walls or objects in order to prevent collisions when the robot turned. The robot meets the goal by reaching the upper-left corner with no collisions.

GitHub Repo: https://github.com/tnazikian/txn81_EECS376_HW1.git