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EECS 476

GitHub: <https://github.com/TAdragon1/mobile_robotics_assignments/tree/master/ps3_twa16/ps3>

To find out what needed improving on wall\_follower, I reviewed the code and ran the program with different velocity values for both the YAW\_RATE and SPEED from 0.1 to 0.9. Most of the operational failures stemmed from the robot becoming stuck in a loop after navigating to a place where it couldn’t escape from. For the loop of moving in a circular arc until the ping in front is within follow distance, the robot was getting stuck if it would collide with the wall not directly in front. My solution was to include a check to see if any ping was inside the follow distance, and break out of the loop if one was. That way once the robot was within follow distance of a wall on any side, it would stop checking directly in front of it and move on to the next step, which is rotating until the wall is closest to the left side of the robot.

While testing my code, I found some strange errors. The one that stands out the most is that once in a while (while running the same unedited program), the robot would stop moving before moving around a corner (different corners each time). When echoing the robot0/cmd\_vel topic, I could see that the right values were being published, so the robot should have been moving. But in the window where I had launched server\_with\_map\_and\_gui\_plus\_robot.launch

errors popped up with issues communicating to the robot. I am unsure how to fix those issues, but they are not infrequent.