Autonomous Mobile Robots Homework

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Evaluation

1 Motion controller

Test cases	Debaraj Barua	Md Zahiduzzaman
Can the robot move strictly along the straight line that connects the source and the target poses?	Yes	Yes
Can the robot combine linear and angular motions?	Works when the required linear and angular change is close	Yes
Can the robot move at the maximum allowed velocity until it gets close to the target? It should slow down with some fixed acceleration until it eventually stops at the target position.	Yes but because of the issue above it moves to a different direction and comes back to goal.	Yes with some issues in deceleration.
Does the linear and angular motions end simultaneously as the robot arrives to the end destination?	Yes	Yes

Based on the evaluation we decided to push Zahid's solution into the team repository. We will fix the issue with velocity profile later if required.

2 Wallfollower

Test cases	Debaraj Barua	Md Zahiduzzaman
Can the robot find a wall?	Yes	Yes
Can it follow a straight wall?	Yes	Yes but the robots base is not parallel to the wall.
Can it handle concave corners	Yes	Yes
Can it handle convex corners or doors	Yes	Yes but crashes sometimes.
Does it support dynamic reconfiguration of clearance and mode?	No, does not work properly in left following mode	No, does not work with large clearance value.

Based on the tests we decided to take Debaraj's solution for the team repository and we will work to fix it's issue in following wall on left.

3 Bug 2

Test cases	**Debaraj Barua**	**Md Zahiduzzaman**
Can your BugBrain handle simple situations where there is no obstacle towards the goal?	Yes	Yes
Can it handle simple situations when there is obstacle and the robot need to follow wall until it is back to the line connecting the goal?	Yes but it does not handle wall following mode (left/right)	Yes but it does not handle wall following mode (left/right)
Can it handle complex obstacles where it needs to keep following wall at the point of the line connecting the goal if it had left the wall at that point before?	Yes	Yes
Can it understand that a goal is unreachable?	Yes	Yes

Based on the evaluation, we decided to take Debaraj's solution as we have picked wall follower from debaraj's repository. Bug brain from Debaraj works better when following wall with his copy of wall follower. We will fix the issue with wall following mode, so that the robot does not try to leave the wall on right or left towards the goal when it is following wall on its right or left respectively.