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Warm Up Project

In this lab, I implemented the wall following and person following behaviors.

The wall and person followers use proportional control to move towards objects. The person follower looks for an object in front of it. If there is an object in front, it finds the center of that object and moves 1 meter away from it. In order to implement the wall follower, I put the proportional control in the angular velocity term, and the linear velocity is just constant. In wall following the neato ignores any small objects around it unless there's a large group of small objects that appear to be one wall.

I switched between the two behaviors by seeing if there's an object smaller than a wall. If there is then the neato switches to following that. If there isn't then it switches to wall following mode. This assumes that there are only walls and humans in the environment otherwise it might follow an object that doesn't move.

I made two classes a person follower and wall follower. They are subclasses of the follower class.

When testing the code, I did not always realize what exactly was going wrong with the neato system. At the beginning, sometimes the neato would stop moving. It took a while to figure out it thought it had debris under its wheels and I had to click through the dialogues to get it back to an ok state. Also I did not know about the problem with switching from using the simulator to the actual robot.

Right now the neato only follows around concave corners, so I would like to make it follow convex corners as well. Also as the design stands the neato has to be in a world with only walls and people. This is a very realistic environment, so I could try only following small objects that move and ignore all other small objects.

I learned to always test my code first using the simulator, because it is easier to test, and I don't have to be in the AC.