

Lab Report 8

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Summary: Hours Spent: 15

Sunday: (3 hrs) Fixed the extra rotations at each wall. It will rotate fully in order to let the camera get it's readings, then it will rotate until the new direction is lined up instead of doing extra rotations. Can rotate around the full course with some variance in its locations.

Monday: (4 hrs) Set up an extra function that records the X and Y by just the motion changes with some trigonometry. I know we are supposed to use camera readings but this will help with the construction. It made my robot miss it's mark on the rotations now. Fixed what I just said by moving the function closer to the main function that does most of the logic.... Don't know why that changes anything.

Tuesday: (2 hrs) Made my robot run based solely on X and Y like when it stops in each square. Errors occurred where the X and Y eventually are off.

Wednesday: (4 hrs) Spent the day refining my robot's movements. I have hardcoded parts where now my robot can go through every square in the map. There is a problem where near the last 4 squares my IMU starts becoming off by 10 degrees. This has bugged me but it must be due to too many computations that have been slowly ruining the IMU over time. I believe I may want to rebuild my many "IF ELSE" loops I am using.

Thursday: (2 hrs) Consulted Zack and Noah about the camera, we did a brainstorm but no definite results yet. Learned there may be a way to implement while loops to smooth my robot. Will look into this soon. I think I know how to enable the camera just not transition the specific values yet. I am curious to what would slow down the robot more, doing calculations in my calculation file, but sending over a mess of values, or doing calculations before sending it over.

Next Week:

I have 3 exams next week so I will have to be straight to the point while working on my robot, no getting distracted with small changes. I need to get the camera enabled so I can do the triangulation. I may need to rebuild my logic, so it is cleaner and has a place for the camera operations. Essentially once I finish this, I would have the lab roughly working through ROS2. It all just depends on when I can get this to work and if I can have it do all the required operations without slowing the robot's readings down and breaking it. I have encountered this a number of times. I will be hoping for the best.