Dylan Lozon

ECE 101-02 MATLAB and C Programming

Mr. Watchorn

May 16, 2023

Mr. Watchorn,

Executive Summary

I wrote this simple state machine that will attempt to drive a robot such that it is always a fixed distance from a target. I think it would make a neat little demonstration to get people excited about robotics. I’m picturing a demo table where kids can hold a target in front of the robot, and it will drive up to them and stop.

Discussion

Right now, everything is simulated. The left arrow will simulate the sensor’s reading getting smaller. (i.e., the robot approaching the target.) The right arrow does the opposite. (i.e., the robot getting further from the target)

I made sure to only print when something changes, that way the terminal doesn’t flood immediately with information, which is a problem we’ve had before.

Outcomes

Everything works as expected. A sample output has been provided in Figure 1. The inputs used to achieve Figure 1 were: RIGHT, LEFT, LEFT, LEFT, LEFT, LEFT, LEFT, RIGHT, ESCAPE.

Conclusions

People like when they can see something in action, hence, this project. If you’ll provide me the resources, I’d really like to deploy this at an FRC event or something similar. It may well make a good recruitment opportunity.

Hope to hear back from you soon,

Dylan

FIGURE 1:  
A screenshot of a computer

Description automatically generated

FIGURE 2:

A picture containing diagram

Description automatically generated

ANY is a collection of every state in the machine. Therefore, END can be reached from any other state.