Week 11 NOTEBOOK

STRUCTURAL CHANGES

We finally made the switch from two wheels to four that we had discussed for so long. With this version of our robot, we needed the four wheels to be able to turn with all four of the blocks underneath, to combat friction and possibly and side heaviness.

We changed the straight funnel structure on the underside of the robot to a curved funnel instead. The curve is better for guiding the blocks to the sorting mechanism and is a much better fit with how off to the side the sorting mechanism is now.

We also printed and installed two small motor mounts for the new wheels, the sorting mechanism, and the sorting door. We then slightly modified the body in measurements to account for all these changes and put the newest prototype together.

CODE

Looking forward, we will have to write the code for the mechanism working to find a block and sort it. Our hopes are that the blocks of any color will seamlessly pass through the curved funnel portion and be sorted without the robot having to stop or turn. A wrong color block will be pushed out to the side while a correct color block will be let in through the opening of the door.

We also need to make sure that we have a way to keep track of the time in our code, to assure that the robot goes back to the home quadrant by a certain time that we determine.

OTHER

We must also discuss and decide whether an offensive pushing approach is worth adding to our strategy at this point in the competition. We had previously tried a separate exterior funnel design for seeking blocks and consequently pushing wrong color blocks out of the home quadrant but dismantled the idea to focus on the main sorting mechanism. It is depended on how well and quickly our robot can sort and contain our colored blocks, and whether it seems worth adding this extra layer of coding and body.

We need to rewire in the color sensors in the front and the color sensor for the sorting mechanism, that had been taken apart to focus on setting up the sorting mechanism. We already have a pretty good code for finding blocks of different colors that works well with the pixy cam, but we have been on the fence for a while about whether we will end up using the camera at all.