

FLL: PIGEONS

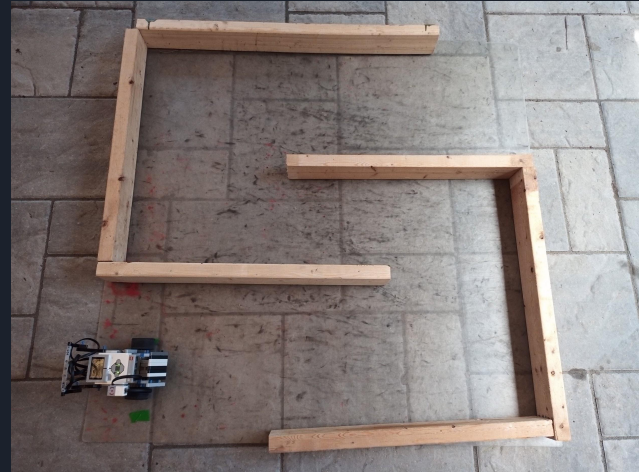
team#50697



Members: Sam MacLean Owen McCarthy

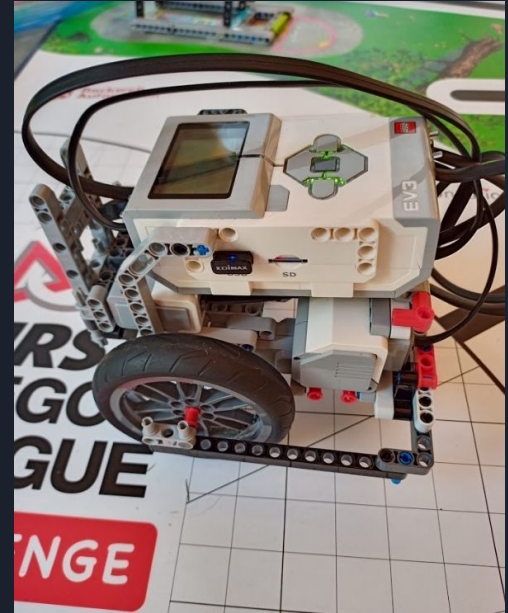
Humble Beginnings

When we first began coding the robot, we went simple and used `robot.straight` and `robot.turn` to navigate the robot around the obstacle course shown in the corner. This was also our first model and looked like a racecar, however our robot model would not stay as we advanced on in the competition.



Missions, Rules, Replay, and the Robot

Soon after, we got the game mat and built the mission attachments. We also got the rulebook and read it, however we kept it as it was handy in case we weren't sure if we could do something or not. This was also when we found out the theme this year's competition, GAMECHANGERS. We made a new model for the robot, which was more practical because it could fit on attachments but we changed as it was hard to switch between attachments.



Working On Missions

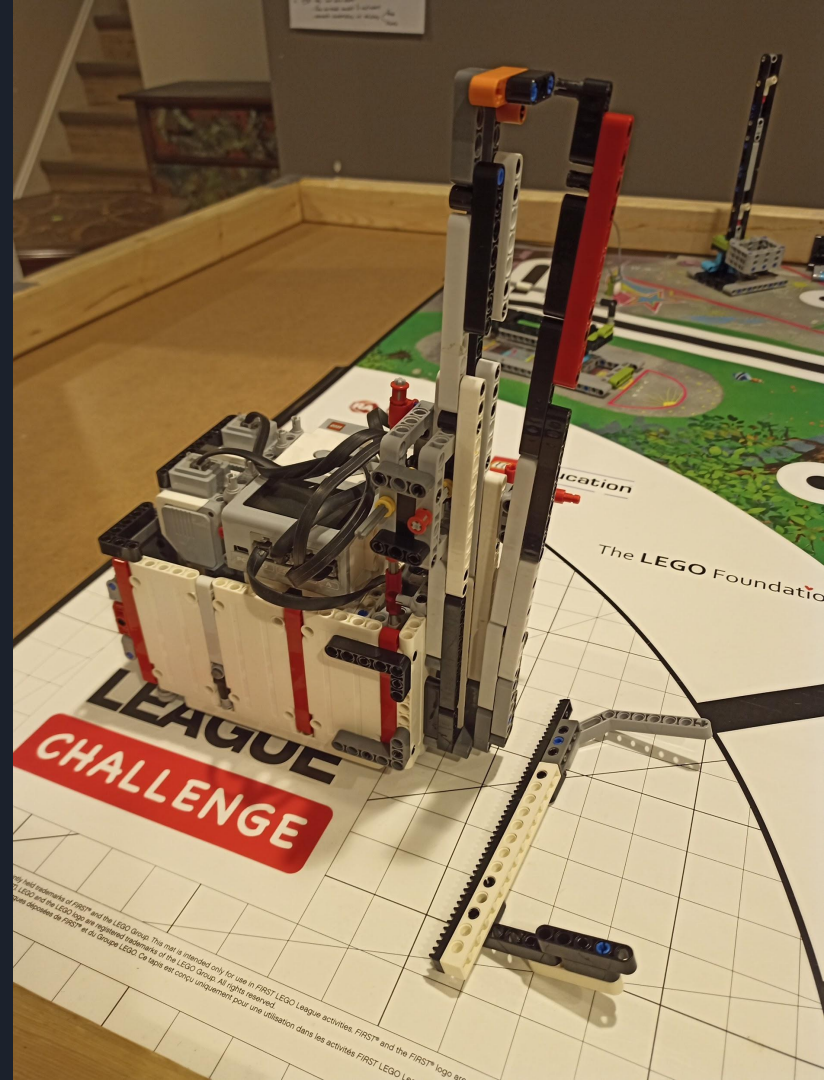
The first missions we worked on were the Step Counter and a combination of going under the pull up bar, pushing the innovation project and the health units into the REPLAY logo, and busting some robot dance moves.



current robot

What is special about this robot?

This robot is special because it's a box robot, we chose because it was easier to switch out the attachments. And it has a built in gyro sensor.





First Programs

We have gone through two generations of programming. The first generations were `robot.straight` and `robot.turn`. There were several issues with these two codes. One of them was that the robot wouldn't go straight at high speed or the robot turn angles were off. So we decided to go with `gyro_straight` and `gyro_turn`.



Gyro sensor

How-do you drive straight with a gyro?

You drive straight with a gyro by knowing what the angle error is and doing the opposite. Ex: So if the robot is at a 15 degree angle the programme subtracts 15 degrees so than its back at 0, the programme repeats this process many times.

How do you spin turn with a gyro?

So you spin the wheel one way and the other the opposite for as long as you're at the angle you wanna be at.