VEX CODE VR

Student Name: Hicks Team E (97793E) from Irvine, California

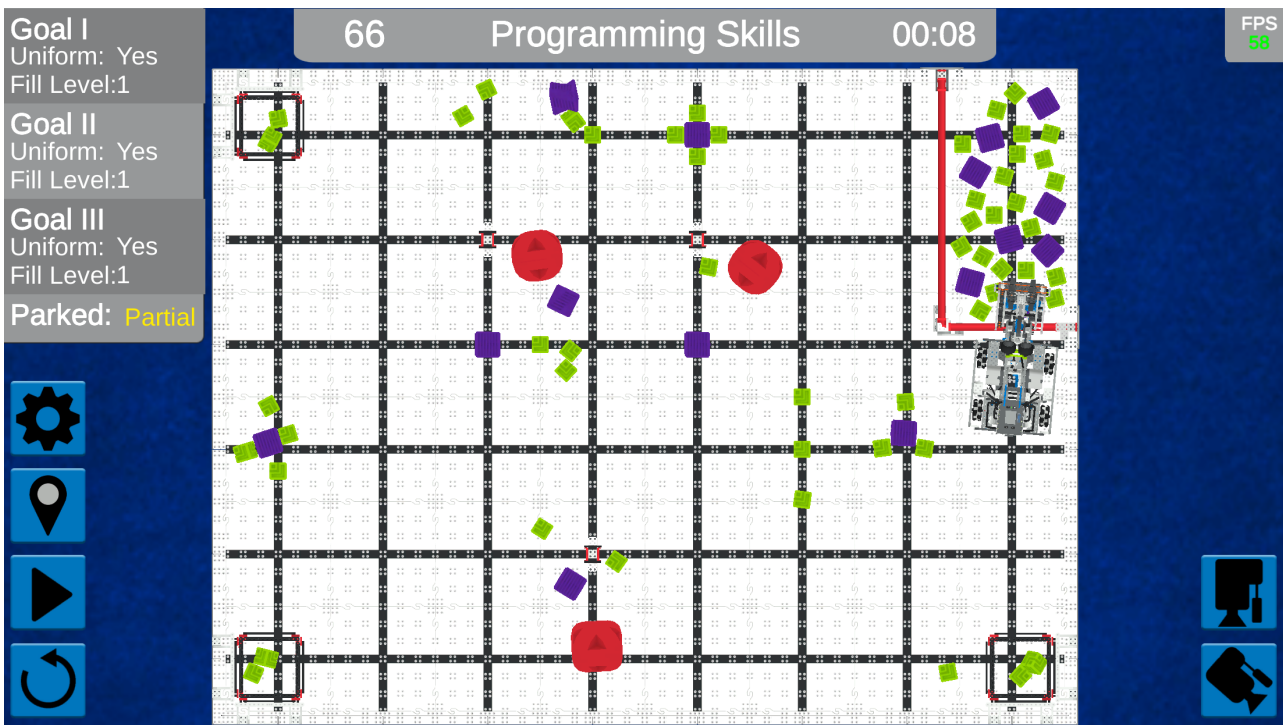Assignment: Virtual Skills Online Challenge

Notes: Team Members: Eli, Grace, Isabel, Maya & Rayden

Playground: VIQC Virtual Skills - Full Volume

Project Name: Online

Project Type: Blocks

Date: Sun Jan 21 2024

Game Strategy: Focus on scoring the green blocks to maximize our point potential. Our goal is to score 2 green blocks in each goal, knock down all three red blocks and partial park in the supply zone with the 1 minute we have.

First, we changed the drive, turn and lift velocity to 100%. This will make our bot move faster, turn faster and make the arm raise faster, saving us time so we can score more points.

Then we coded the bot to intake the first green block, turn left 130 degrees, spin the lift and drive forward. We then spun the object manipulator the opposite way to get the block to come out into the goal. We repeated this with the next block, picking up the closest green block and scoring it into the same goal, giving us a total of 12 points so far.

Next we picked up another green block and coded the bot to move forward to the goal in the top left corner and score. The bot then is coded to turn around, pick up a fourth green block and score it in the same goal, giving us a total of 24 points.

After that we coded the bot to drive forward into a red block to knock it down. We coded the bot to wait .1 seconds so that the robot could be in the right position before our next turn. We noticed that there was a green block close by so we coded the bot to turn left 50 degrees and pick it up. Then we coded the bot to drive forward, turn right 70 degrees and move forward to knock over the second red block. Then the bot turned right 70 degrees again and moved forward 30 inches to knock over the final red block, giving us a total of 39 points.

Since our bot is already holding a green block, we had the bot move to the bottom right goal and score the green block by lifting the arm and setting the object manipulator to outtake. We then turned our bot to pick up one last green block and score it in the same goal, giving us a total of 61 points.

Finally, with 15 seconds left on the clock, we coded our bot to partial park in the supply zone, us a final score of 66 points!

Coding in VR skills has definitely helped us code with our robot in local competitions. We've used Step 6 in the Engineering Design Process to build our code and Step 7 to test our code. Coding in VR skills has also given us the opportunity to learn about different coding options. For example, the drive and turn velocity that we used in VR skills to make the bot faster, we were also able to use for our team's robot in competition.

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when started
set drive velocity to 100 %
set turn velocity to 100 %
set ArmMotorGroup velocity to 100 % 
spin IntakeMotorGroup intake for 1 turns 
drive forward for 10 inches 
turn left for 130 degrees
spin ArmMotorGroup up for 300 degrees 
drive forward for 9 inches  and don't wait
spin IntakeMotorGroup outtake for 1 turns 
turn right for 135 degrees
spin ArmMotorGroup down for 300 degrees 
turn right for 10 degrees
drive forward for 5 inches 
turn right for 10 degrees
spin IntakeMotorGroup intake for 1 turns 
turn right for 195 degrees
spin ArmMotorGroup to position 300 degrees 
drive forward for 4 inches 
spin IntakeMotorGroup outtake for 1 turns 
turn left for 195 degrees
spin ArmMotorGroup down for 300 degrees 
drive forward for 5 inches 
spin IntakeMotorGroup intake for 1 turns 
turn left for 28 degrees
spin ArmMotorGroup up for 300 degrees 
drive forward for 35 inches 
spin IntakeMotorGroup outtake for 1 turns 
turn right for 165 degrees
spin ArmMotorGroup down for 300 degrees 
drive forward for 11 inches 
spin IntakeMotorGroup intake for 1 turns 
turn left for 170 degrees
spin ArmMotorGroup up for 300 degrees 
drive forward for 11 inches 
spin IntakeMotorGroup outtake for 1 turns 
spin ArmMotorGroup down for 300 degrees 
turn right for 95 degrees
drive forward for 10 inches 
turn right for 20 degrees
wait 0.1 seconds
turn left for 50 degrees
drive forward for 2 inches 
spin IntakeMotorGroup intake for 1 turns 
drive forward for 12 inches 
turn right for 70 degrees
drive forward for 20 inches 
turn right for 70 degrees
drive forward for 30 inches 
spin ArmMotorGroup up for 300 degrees 
turn left for 85 degrees
drive forward for 37 inches 
turn right for 25 degrees
drive forward for 5 inches 
spin IntakeMotorGroup outtake for 1 turns 
turn left for 145 degrees
spin ArmMotorGroup down for 300 degrees 
drive forward for 6 inches 
spin IntakeMotorGroup intake for 1 turns 
turn right for 150 degrees
spin ArmMotorGroup up for 300 degrees 
drive forward for 9 inches 
spin IntakeMotorGroup outtake for 1 turns 
turn left for 120 degrees
drive forward for 25 inches 
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