

VEX CODE VR

Student Name: VEXcode VR Skills Challenge 2024 Full Volume

Assignment:

Notes: Team members: Liam Au-Yeung, Jayden Wang, and Tristan Li
Team Number: 8390D Location: Toronto

Playground: VIQC Virtual Skills - Full Volume

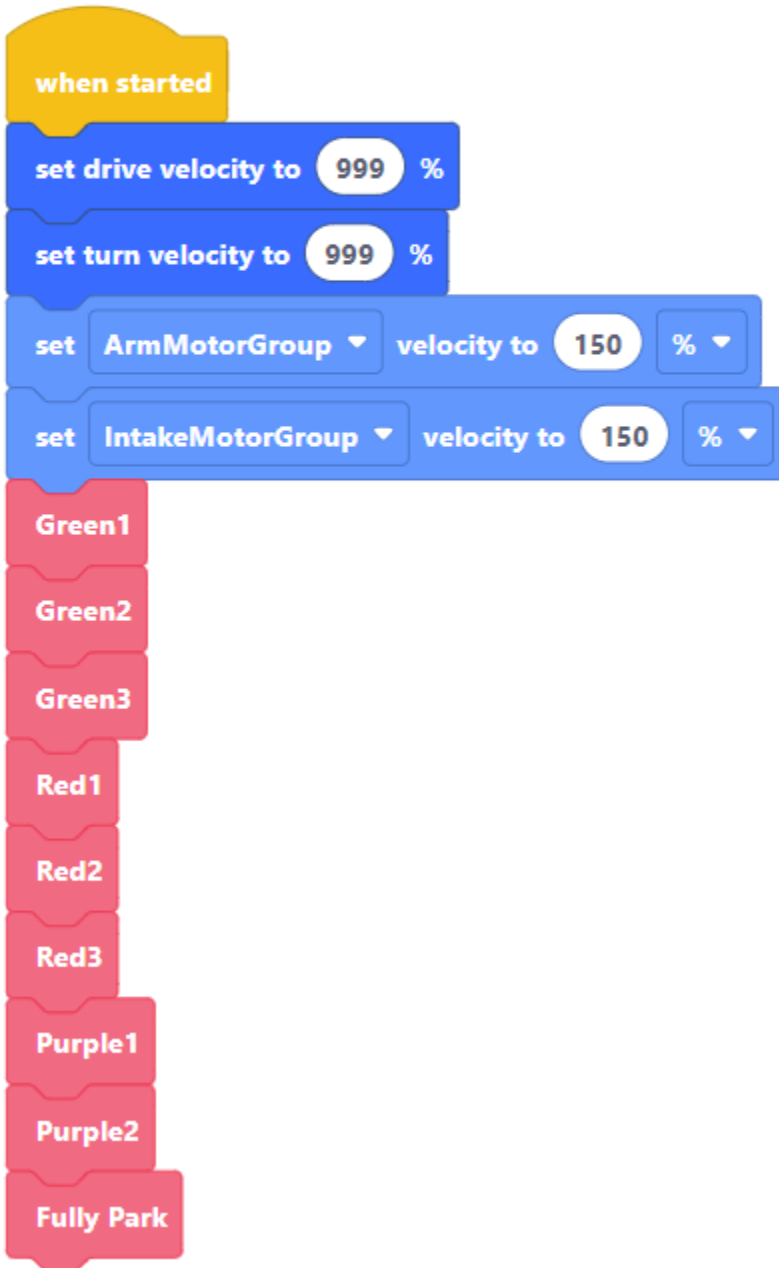
Project Name: Autonomous

Project Type: Blocks

Date: Mon Jan 29 2024



Title: VEXcode VR Skills Challenge 2024 Full Volume
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```

define Green1
  spin IntakeMotorGroup intake
  turn left for 100 degrees
  spin ArmMotorGroup up for 290 degrees
  spin IntakeMotorGroup outtake
  wait 1 seconds
  stop IntakeMotorGroup

```

This code is to pick up the first green in the line of 4 greens and dump it in goal 2, the closest goal to starting point A.

This wait and all the waits below are for the outtake to actually outtake the cube rather than just immediately stopping

```

define Green2
  turn right for 100 degrees
  spin IntakeMotorGroup intake
  spin ArmMotorGroup down for 290 degrees
  drive forward for 12 inches
  drive reverse for 12 inches
  turn left for 100 degrees
  spin ArmMotorGroup up for 290 degrees
  spin IntakeMotorGroup outtake
  wait 1 seconds
  stop IntakeMotorGroup

```

This code is to pick up the second green in the line of 4 greens and dump it in goal 2.

```

define Green3
  turn right for 100 degrees
  spin IntakeMotorGroup intake
  spin ArmMotorGroup down for 290 degrees
  drive forward for 18 inches
  drive reverse for 18 inches
  turn left for 100 degrees
  spin ArmMotorGroup up for 290 degrees
  spin IntakeMotorGroup outtake
  wait 1 seconds
  stop IntakeMotorGroup

```

This code is to pick up the third green in the line of 4 greens and dump it in goal 2. I need 3 greens for fill level 2, so I can get an extra 20 points if I get fill level 2 in all goals, also using only greens for uniform bonus because if you have 2 or more of the same color cube in the same goal you will get uniform bonus adding 10 points. Fill level is how high the cubes reach based off the markings in the goal, and the fill level you get is the lowest fill level throughout all the goals. Fill level 0, meaning no cubes in at least one goal gives no points. Fill level 1, meaning at least 1 cube in each goal is +10 points. Fill level 2, which is what I am going for is +20 points by all cubes being higher than the white line marked on the goal. Fill level 3, meaning every goal is filled up past the top black piece, is +30 points.

```

define Red1
  turn right for 170 degrees
  spin ArmMotorGroup down for 190 degrees
  spin IntakeMotorGroup intake
  drive forward for 17 inches
  turn left for 100 degrees
  drive forward for 42 inches
  spin ArmMotorGroup up for 200 degrees
  drive forward for 5 inches
  spin IntakeMotorGroup outtake
  wait 1 seconds

```

This code is to pick up the first red, the closest to the robot and dump it in goal 3.

```

define Red2
  spin ArmMotorGroup down for 200 degrees
  spin IntakeMotorGroup intake
  turn right for 120 degrees
  drive forward for 11 inches
  spin ArmMotorGroup up for 200 degrees
  drive reverse for 11 inches
  turn left for 120 degrees
  spin IntakeMotorGroup outtake
  wait 1 seconds

```

Only 1 red is needed for fill level two as they are very large but I need two reds for uniform bonus.

```

define Red3
  stop IntakeMotorGroup
  turn right for 165 degrees
  spin ArmMotorGroup down for 300 degrees
  spin IntakeMotorGroup intake
  drive forward for 14 inches
  turn left for 45 degrees
  drive forward for 32 inches
  turn left for 90 degrees

```

This code is to knock down the last red off it's peg as every red you knock off/pick up you will gain 5 extra points.

```
define Purple1
  drive reverse for 37 inches
  turn right for 90 degrees
  spin IntakeMotorGroup intake
  drive forward for 24 inches
  turn right for 15 degrees
  spin ArmMotorGroup up for 300 degrees
  spin IntakeMotorGroup outtake
  drive forward for 2 inches
  wait 1 seconds
  drive reverse for 2 inches
  stop IntakeMotorGroup
```

On the way to the last goal, I pick up a purple as they are larger than greens so that I can get fill level 2 as fast as possible.

```
define Purple2
  turn left for 105 degrees
  spin ArmMotorGroup down for 300 degrees
  spin IntakeMotorGroup intake
  drive forward for 12 inches
  drive reverse for 2 inches
  turn left for 25 degrees
  spin IntakeMotorGroup outtake
  turn right for 25 degrees
  drive forward for 2 inches
  spin IntakeMotorGroup intake
  drive reverse for 12 inches
  spin ArmMotorGroup up for 300 degrees
  turn right for 105 degrees
  drive forward for 1 inches
  spin IntakeMotorGroup outtake
  wait 1 seconds
  stop IntakeMotorGroup
```

This is the last cube I pick up. I need this for fill level 2 and uniform bonus, so this cube is the most important cube.

```
define Fully Park
  turn left for 105 degrees
  drive forward for 12 inches
  turn left for 90 degrees
  drive reverse for 10 inches
  turn left for 90 degrees
  drive reverse for 13 inches
  spin ArmMotorGroup up for 1200 degrees
  spin ArmMotorGroup down for 500 degrees
  spin ArmMotorGroup up for 500 degrees
  spin ArmMotorGroup down for 10000 degrees
```

With the remaining time, I fully park. Partially parking means that part of the robot is inside the red bars on the field, also known as the supply zone. Partial parking gives +5 points. However, if the whole robot goes into the supply zone, with no parts sticking out at all, then it is called fully parking, giving +10 points which is what this code does.