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#region VEXcode Generated Robot Configuration
import math
import random
from vexcode_vrc import *
from vexcode_vrc.events import get_Task_func

# Brain should be defined by default
brain=Brain()

drivetrain = Drivetrain("drivetrain", 0)
arm_motor = Motor("ArmMotor", 3)
rotation = Rotation("Rotation", 7)
intake_motor = Motor("IntakeMotor", 8)
optical = Optical("Optical", 11)
gps = GPS("GPS", 20)

#endregion VEXcode Generated Robot Configuration
# -----
#
# Project:      VEXcode Project
# Author:      VEX
# Created:
# Description:  VEXcode VR Python Project
#
# -----

# Add project code in "main"
def main():
    drivetrain.set_drive_velocity(100, PERCENT)
    intake_motor.set_velocity(100, PERCENT)
    arm_motor.set_velocity(100, PERCENT)
    arm_motor.spin_to_position(180*7, DEGREES, wait=False)
#note that the *7 accounts for the gear ratio, and makes the code easier to read
    drivetrain.drive_for(FORWARD, 100, MM)
    drivetrain.turn_for(LEFT, 45, DEGREES)
    wait(2, SECONDS)
    intake_motor.spin(REVERSE);
    drivetrain.drive_for(FORWARD, 400, MM)
    wait(.75, SECONDS)
    intake_motor.spin(FORWARD);
    drivetrain.turn_for(LEFT, 35, DEGREES)
    drivetrain.turn_for(RIGHT, 35, DEGREES)
    intake_motor.spin(REVERSE);
    wait(.75, SECONDS)
    drivetrain.drive_for(REVERSE, 80, MM)
    drivetrain.turn_for(LEFT, 90, DEGREES)
#repeats the whole sequence fo grabbing a triball and scoring it 8 times
    for x in range(8):

        intake_motor.spin(FORWARD);

        while not optical.is_near_object():

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        drivetrain.drive(FORWARD)
        wait(5, MSEC)
    drivetrain.stop()
    arm_motor.spin_to_position(0, DEGREES, wait=False)
    drivetrain.drive_for(REVERSE, 1500, MM)
    drivetrain.turn_for(RIGHT, 45, DEGREES)
    drivetrain.drive_for(REVERSE, 350, MM)
    intake_motor.spin(REVERSE);
#the sensor means that it will always go up to the point of where the triball is, even if it
#goes slow
    while not optical.is_near_object():
        brain.screen.print(optical.is_near_object())
        wait(5, MSEC)
    wait(.75, SECONDS)
    intake_motor.spin(FORWARD);
    arm_motor.spin_to_position(180*7, DEGREES, wait=False)
    drivetrain.drive_for(FORWARD, 350, MM)
    drivetrain.turn_for(LEFT, 45, DEGREES)
    while not optical.is_near_object():
        drivetrain.drive(FORWARD)
        wait(5, MSEC)
    drivetrain.stop()

    while not optical.is_near_object():
        drivetrain.drive(FORWARD)
        wait(5, MSEC)
    drivetrain.stop()
    #now, it goes without moving the arm, and slowly uses the intake to push in all of the
#gathered triballs
    drivetrain.drive_for(REVERSE, 1500, MM)
    drivetrain.turn_for(RIGHT, 45, DEGREES)
    drivetrain.drive_for(REVERSE, 500, MM)
    drivetrain.turn_for(RIGHT, 180, DEGREES)
    intake_motor.spin(REVERSE);
    drivetrain.set_drive_velocity(25, PERCENT)
    drivetrain.drive(FORWARD)

# VR threads TEST – Do not delete
vr_thread(main)

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