Intro to Python – Lesson 38

Check out the following website:

https://www.dji.com/ca/robomaster-s1/programming-guide (Programming guide - keep it close at hand and use the reference whenever you need it.)

Click the Lab button and go into DIY programming and select Python from the top of the screen. Start a new program and try some of the following. It basically sets up in a function as shown – the **def start():** is required at the top of the program as shown.

```
def start():

    # This must be the first line of any module that you write.  It allows the chassis and
    the gimbal to move independently.

    robot_ctrl.set_mode(rm_define.robot_mode_free)


    # Set Rotate Speed: This sets the rotation speed of the gimbal.

    gimbal_ctrl.set_rotate_speed(60)

    # This next line sets the rotation speed for the bot itself rotating around
    # using it's wheels.

    chassis_ctrl.set_rotate_speed(30)


    # set_trans_speed sets the movement speed of the robot in meters per second.

    chassis_ctrl.set_trans_speed(0.5)


    # move_with_distance takes in two parameters, the first is an angle (0 meaning
    # move straight ahead forward), and the second is a distance in meters (in this case,
    # move 0.3 meters forward – the max distance is 5 meters - if you need to move
    # more than 5 meters you need to set up two – or more – commands.)

    chassis_ctrl.move_with_distance(0, 0.3)
```

```
# Rotate with degree takes in a direction of rotation, and a number of degrees for
# the bot to rotate.

chassis_ctrl.rotate_with_degree(rm_define.clockwise, 180)


# Recenter always rotates the gimbal back to its starting position of staring directly
# forward in front of it (yaw-wise), with a level pitch.  Basically, it reset to 0, 0.

gimbal_ctrl.recenter()

 # Yaw_ctrl rotates the gimbal by the number of degrees you pass into the function.
 # In this case, 250.

gimbal_ctrl.yaw_ctrl(250)


# Likewise, pitch_ctrl rotates the gimbal up and down by the number of degrees
# specified, in this case 15.

gimbal_ctrl.pitch_ctrl(15)
```

Try it on your own:

Write a program that will move the robot ahead 1 meter, then do something with the Gimbal. Now move 1 meter to the right, then do something different with the Gimbal. Next move 1 meter back, then do something with the Gimbal. Finally move 1 meter to the left and do something different with the Gimbal. You should now be back at the starting point.

If you do not have the robot, write your piece of code, and send it to the person with the robot. Work together to run and debug your code.

See you at 1.