Python Shell

```
import motor
import motor_pair
from hub import port, sound, light_matrix, light, button, motion_sensor,
port
import time
import runloop
import color
import color_sensor
import force_sensor
import distance_sensor
import color_matrix
import device

# Constants
force_threshold = 50
speed = 720
degrees = 360

# Simplified Movement Function
def move_motors(a_speed, b_speed, value):
    motor.run(port.A, a_speed)
    motor.run(port.B, b_speed)
    time.sleep((value * degrees) / speed)
    motor.stop(port.A)
    motor.stop(port.B)

# Move Forward
def move_forward(value):
    move_motors(speed, speed, value)

# Move Backward
def move_backward(value):
    move_motors(-speed, -speed, value)

# Turn Left
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def turn_left(value):
    move_motors(-speed, speed, value)

# Turn Right
def turn_right(value):
    move_motors(speed, -speed, value)


# Sensor Handlers
#_______ Button Sensor_______________________________
def Button():
    force = force_sensor.force(port.C)
    if force > force_threshold:
         # Add your code here:
        move_forward(1)

    else:
         # Add your code here:
        motor.stop(port.A)
        motor.stop(port.B)



#_______Color Sensor_______________________________

def check_color():
    detected_color = color_sensor.color(port.D)
    if detected_color == color.RED: # You can change the color or add
more colors.

         # Add your code here:
        move_forward(1)

    else:
        # Add your code here:
        motor.stop(port.A)
        motor.stop(port.B)


#_______ Distance Sensor_______________________________
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def Distance(threshold_cm=10):
    distance_cm = distance_sensor.distance(port.E)
    if distance_cm < threshold_cm:
        motor.stop(port.A)
        motor.stop(port.B)


#________________ Dummy functions to use all imports ___________________
def use_sound():
    sound.beep()

def use_light_matrix():
    light_matrix.show_image('HAPPY')

def use_light():
    light.on('blue')

def use_button():
    if button.pressed():
        print("Button pressed!")

def use_motion_sensor():
    angle = motion_sensor.tilt_angle()
    print(f"Tilt angle: {angle}")

def use_color_matrix():
    color_matrix.show([[color.RED]*5]*5)

def use_device():
    info = device.info()
    print("Device info:", info)

# ______________________________________________________

# _______________________Main Function___________________________________
async def main():
    motor_pair.pair(1, port.A, port.B)


# Add your code here:
    #Example:
    move_forward(1)
    await runloop.sleep_ms(1000) # ‘await’ tells the robot to wait before
doing the next function

    move_backward(1)
    await runloop.sleep_ms(1000)

    turn_left(1)
    await runloop.sleep_ms(1000)

    turn_right(1)
    await runloop.sleep_ms(1000)

# Call dummy usage functions here to make them 'used'
    use_sound()
    use_light_matrix()
    use_light()
    use_button()
    use_motion_sensor()
    use_color_matrix()
    use_device()

# Run loop for sensor checks.
# The "while true" method allows for a function to stay 'alive' during
the running of the program.
    while True:
        Button()
        check_color()
        Distance()
        await runloop.sleep_ms(100)
#________________________________________ End of Main function
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# Run the async main function using runloop
runloop.run(main)
```