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You said:

make me a python for the ev3 that goes strigt then turns when ever it sees a wall

ChatGPT said:

ChatGPT

To make an EV3 robot that moves straight and turns when it detects a wall using the infrared sensor in Pybricks MicroPython, you can use the following code. This script makes the robot move forward, and when the infrared sensor detects an object within a certain distance (which you can adjust), the robot will turn and continue.

python

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```
from pybricks.ev3devices import Motor, InfraredSensor
from pybricks.parameters import Port, Direction, Stop
from pybricks.tools import wait
from pybricks.robotics import DriveBase

# Initialize the motors on the left and right wheels
left_motor = Motor(Port.B)
right_motor = Motor(Port.C)

# Initialize the infrared sensor on the designated port
ir_sensor = InfraredSensor(Port.S4)

# Initialize the robot's drive base with wheel diameter and axle track
robot = DriveBase(left_motor, right_motor, wheel_diameter=56,
axle_track=114)

# Define the distance threshold for detecting an obstacle (in mm)
obstacle_distance = 150 # You can adjust this distance

# Robot movement loop
while True:
    # Get the current distance from the infrared sensor
    distance = ir_sensor.distance()
```

```

    if distance < obstacle_distance:
        # Stop and turn if the distance to an object is below the
threshold
        robot.stop()
        robot.turn(90) # Turn 90 degrees, you can adjust the angle
    else:
        # Move straight if no obstacle is detected
        robot.drive(200, 0) # Speed: 200 mm/s, Turn rate: 0 deg/s

# Wait a bit to avoid overwhelming the sensor
wait(100)

```

How it works:

- **Infrared Sensor:** The infrared sensor is continuously checking for obstacles.
- **Threshold:** When an obstacle is detected within **150mm**, the robot stops and turns 90 degrees.
- **Movement:** If no obstacle is detected, the robot keeps moving straight at 200 mm/s.

You can adjust the distance threshold, the turning angle, or the speed depending on your needs!

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You said:

it keeps denying permission due to code can you change the code

ChatGPT said:

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It sounds like you are encountering permission issues, likely due to certain commands needing specific permissions for hardware access or possibly because of a configuration issue with your EV3 setup.

One way to address permission issues is to ensure that the script is being run in a way that allows hardware access. If you are running on a specific platform (like EV3 itself or a computer connecting to it), make sure you have the right permissions for accessing sensors and motors. However, I'll also modify the code to simplify it and ensure that only necessary commands are executed.

Here's a slightly adjusted code that may prevent permission issues:

python

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```

from pybricks.ev3devices import Motor, InfraredSensor
from pybricks.parameters import Port
from pybricks.tools import wait
from pybricks.robotics import DriveBase

# Initialize motors and infrared sensor
left_motor = Motor(Port.B)
right_motor = Motor(Port.C)
ir_sensor = InfraredSensor(Port.S4)

# Initialize the robot's drive base
robot = DriveBase(left_motor, right_motor, wheel_diameter=56,
axle_track=114)

# Set a safe distance from the wall (in mm)
obstacle_distance = 150

# Continuous movement and wall detection loop
while True:
    # Get distance from the infrared sensor
    distance = ir_sensor.distance()

    if distance < obstacle_distance:
        # Stop and turn when obstacle is detected
        robot.stop()
        robot.turn(90) # Turn by 90 degrees
    else:
        # Keep driving forward when no obstacle is detected
        robot.drive(200, 0) # Move forward with 200 mm/s speed

    # Small delay to avoid overwhelming the system
    wait(100)

```

Key Points to Ensure:

1. Permissions:

- If running on a Linux system or from a remote machine, ensure you have executed the script with appropriate permissions (e.g., use `sudo` if necessary).

2. Sensor Ports:

- Double-check that the sensors and motors are connected to the correct ports on the EV3 brick.

3. Pybricks Setup:

- Ensure that Pybricks firmware is correctly installed on your EV3 brick.

4. IR Sensor Configuration:

- Confirm that the infrared sensor is properly connected and functioning.

If permissions continue to be an issue, feel free to share more details about the environment in which you are running the code, and we can further troubleshoot!

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You said:

Starting program failed: Failed to execute child process
"/home/robot/robot_educator_basic/main.py" (Permission denied)

ChatGPT said:

ChatGPT

The error message indicates that the script lacks the necessary execution permissions on the file system. This is not related to the code itself but to how the file permissions are set on your EV3 device.

Here's how you can resolve the "Permission denied" error:

Step 1: Set the Correct File Permissions

1. **Connect to your EV3 brick via SSH** (if you are accessing it remotely) or use the EV3's local terminal.

Navigate to the directory where your script is located, in this case

`/home/robot/robot_educator_basic/`.

You can use this command:

bash

Copy code

`cd /home/robot/robot_educator_basic/`

2.

Set the correct permissions on the Python script so it can be executed. Use the `chmod` command to make the script executable:

bash

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`chmod +x main.py`

3. This command ensures that the `main.py` file has execution permissions.
4. **Run the program** again from the EV3 brick or via SSH.

Step 2: Check for User Permissions

If you're still encountering issues, make sure the `robot` user has the necessary permissions to execute scripts. You may also try running the program with elevated privileges:

bash

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```
sudo python3 /home/robot/robot_educator_basic/main.py
```

Step 3: Ensure Pybricks is Properly Installed

Make sure that Pybricks firmware is correctly installed on the EV3. If there are any issues with the firmware or installation, you can reinstall it by following the Pybricks documentation for your EV3 setup.

If you continue to have issues, you might need to check whether the file system is mounted with the correct permissions or if the directory itself needs execution privileges:

bash

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```
chmod +x /home/robot/robot_educator_basic/
```

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You said:

can make ev3 bot do something funny

ChatGPT said:

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You can make your EV3 robot do something fun and amusing with a bit of creativity! Here's an idea: how about making the robot act like it's "dancing" to some imaginary music? We can write a Python program where the robot moves in random directions, spins around, and makes some beeping sounds, creating a playful "dance" routine.

Here's a simple "dancing robot" program in Pybricks MicroPython:

python

Copy code

```

from pybricks.ev3devices import Motor
from pybricks.parameters import Port, SoundFile
from pybricks.tools import wait
from pybricks.robotics import DriveBase
import random

# Initialize motors
left_motor = Motor(Port.B)
right_motor = Motor(Port.C)

# Initialize the robot's drive base
robot = DriveBase(left_motor, right_motor, wheel_diameter=56,
axle_track=114)

# Define a "dance" function that makes the robot move randomly
def dance():
    for _ in range(10): # The robot will perform 10 random dance
moves
        # Generate random values for speed and turn angle
        speed = random.randint(100, 500) # Random speed between 100
and 500 mm/s
        turn_angle = random.randint(-180, 180) # Random turn between
-180 and 180 degrees

        # Make the robot move forward and turn
        robot.drive(speed, turn_angle)

        # Play a funny sound
        if random.random() > 0.5:
            robot.speaker.play_file(SoundFile.LAUGHING)

        # Wait for a short random time between moves
        wait(random.randint(500, 1500))

        # Stop between moves to make it more like dancing
        robot.stop()

        # Small wait before the next move

```

```
        wait(500)

# Run the dance routine
dance()

# Final bow: make the robot spin in place and beep
robot.turn(360) # Spin in a full circle
robot.speaker.beep() # Final beep
```

What this does:

- The robot will make **random movements**: it will drive at random speeds, and turn at random angles.
- It will **play funny sounds** (like laughter) during its movements to make it more entertaining.
- After the random movements, it will do a final **spin** and beep.

Customizations:

- **Dance duration**: You can change the number of moves by adjusting the loop (`for _ in range(10)`).
- **Sounds**: You can modify or add more sounds using the `SoundFile` library. Some funny ones include `SoundFile.LAUGHING`, `SoundFile.CHEERING`, and `SoundFile.SMACK`.

Let me know if you'd like to adjust or add more fun elements to the routine!

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