Raspberry Pi and PC/Laptop Connection Guide

# Step 1: Connect to the Same Wi-Fi Network

Ensure that both your PC/laptop and the Raspberry Pi are connected to the same Wi-Fi network. This is crucial for enabling communication between the two devices.

# Step 2: Establishing Raspberry Pi's IP Address

To communicate with the Raspberry Pi over the network, you need to find its IP address.

Initial Connection: If you're setting up the Raspberry Pi for the first time, it might be necessary to connect it to your computer directly using an Ethernet cable. This step can be skipped if your Raspberry Pi is already configured to connect to your Wi-Fi network.

SSH into Raspberry Pi:

Using PuTTY (Windows): Open PuTTY, and in the "Host Name (or IP address)" field, enter raspberrypi.local. Make sure the connection type is set to SSH.

Default Credentials: When prompted, use the username (raspberrypi) and password (raspberry) for Raspberry Pi.

Finding IP Address: Once logged in, type ifconfig and press enter. Look for the inet address under the wlan0 entry. This is your Raspberry Pi's IP address on the Wi-Fi network.

# Step 3: Choose Your Terminal

With the Raspberry Pi's IP address, you have the flexibility to continue using SSH through PuTTY or switch to another terminal on your system. To connect using a different terminal, use the command: ssh <HOSTNAME>@<IP>, replacing <IP> with the Raspberry Pi's IP address.

# Step 4: Run Server Code on PC

Before proceeding, ensure that the server code intended to communicate with the LiDAR sensor is running on your PC. The server should be set up to listen on the Wi-Fi network's IP address.

# Step 5: Execute Client Code on Raspberry Pi

Finally, to initiate the connection from the Raspberry Pi to the LiDAR sensor through your PC, run the client code on the Raspberry Pi.

Navigate to Client Code Directory: Use the command cd ~/Desktop/ to move to the directory containing the client code.

Run the Client Code: Execute the client code by typing python3 Client-XYZ.py. Make sure that the file name matches the actual Python script you intend to run.