## 🗂️ Folder Structure

Let’s assume your directory looks like this:

/socket

│

├── basic\_socket/

│ ├── server.py

│ └── client.py

│

└── image\_socket/

├── Server\_image.py

└── client\_image.py

## 🔹 1. basic\_socket/ — Simple Socket Communication

### 📜 server.py

* A TCP server that:
  + Listens on localhost:9999
  + Accepts connections from clients
  + Receives the client's name
  + Sends back a welcome message
  + Closes the connection

### 📜 client.py

* Connects to the server on localhost:9999
* Sends user input (name)
* Receives welcome message from the server
* Prints the message and exits

### ▶️ How to Run basic\_socket/

In terminal 1:

Run Server code

open the client code in Terminal 2

Run the Client code

## 🔸 2. image\_socket/ — Image Transfer & PostgreSQL Storage

### 📜 Server\_image.py

* Accepts an image from the client
* Converts it to black and white using Pillow (PIL)
* Stores the processed image in a PostgreSQL database table bw\_images
* If the client says "yes", retrieves the image from the DB and sends it back

Note: It expects a PostgreSQL database with this table:

CREATE TABLE bw\_images (

id SERIAL PRIMARY KEY,

image\_data BYTEA

);

### 📜 client\_image.py

* Sends an image (apple.jpeg) from your machine
* Asks if the user wants the image back
* If yes, receives black-and-white image and saves it

### ▶️ How to Run image\_socket/

✅ Prerequisites:

* PostgreSQL DB running with a database named photos
* Required Python packages installed:

pip install pillow psycopg2

* Make sure you have a file at:

/home/thrymr/Downloads/apple.jpeg

In terminal 1:

Run Server\_image code

open the client code in Terminal 2:

Run the Client\_image code