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#server.py:

import socket
import threading
from rpc_runtime import send_msg, recv_msg, validate_types

#RPC FUNCTION

def calculate_grade_average(profile):
    grades = profile["grades"]
    return sum(grades) / len(grades)

#CLIENT HANDLER

def handle_client(conn, addr):
    print(f"[+] Connected: {addr}")

    try:
        while True:
            request = recv_msg(conn)
            if not request:
                break

            method = request.get("method")
            params = request.get("params")

            try:
                if method == "calculate_grade_average":

                    profile = params[0]

                    #TYPE CHECKING
                    validate_types(profile)

                    result = calculate_grade_average(profile)

                    send_msg(conn, {"result": result})

            else:
                send_msg(conn, {"error": "Unknown method"})

            except TypeError as e:
                send_msg(conn, {"error": str(e)})

    finally:
        conn.close()
        print(f"[-] Disconnected: {addr}")

#START SERVER
def start_server():
    host = "127.0.0.1"
    port = 5000

    server_sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    server_sock.bind((host, port))

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server_sock.listen()

print(f"RPC Server running on {host}:{port}")

while True:
    conn, addr = server_sock.accept()
    threading.Thread(
        target=handle_client,
        args=(conn, addr),
        daemon=True
    ).start()

if name == "main": start_server()
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