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#Marshalling layer - rpc_runtime.py:

import socket import json

def send_msg(sock, data): message = json.dumps(data).encode("utf-8") #Converts Python objects into JSON (serialization) sock.sendall(message)

def recv_msg(sock): data = sock.recv(4096).decode("utf-8") if not data: return None return json.loads(data) #Converts JSON back into Python objects (deserialization)

#TYPE VALIDATION

def validate_types(profile):

    if not isinstance(profile, dict):
        raise TypeError("StudentProfile must be a dictionary")

    if not isinstance(profile.get("name"), str):
        raise TypeError("name must be a string")

    if not isinstance(profile.get("id"), int):
        raise TypeError("id must be an integer")

    grades = profile.get("grades")

    if not isinstance(grades, list):
        raise TypeError("grades must be a list")

    for g in grades:
        if not isinstance(g, int):
            raise TypeError("grades must contain only integers")

```