A Simple Peer To Peer Network Implementation

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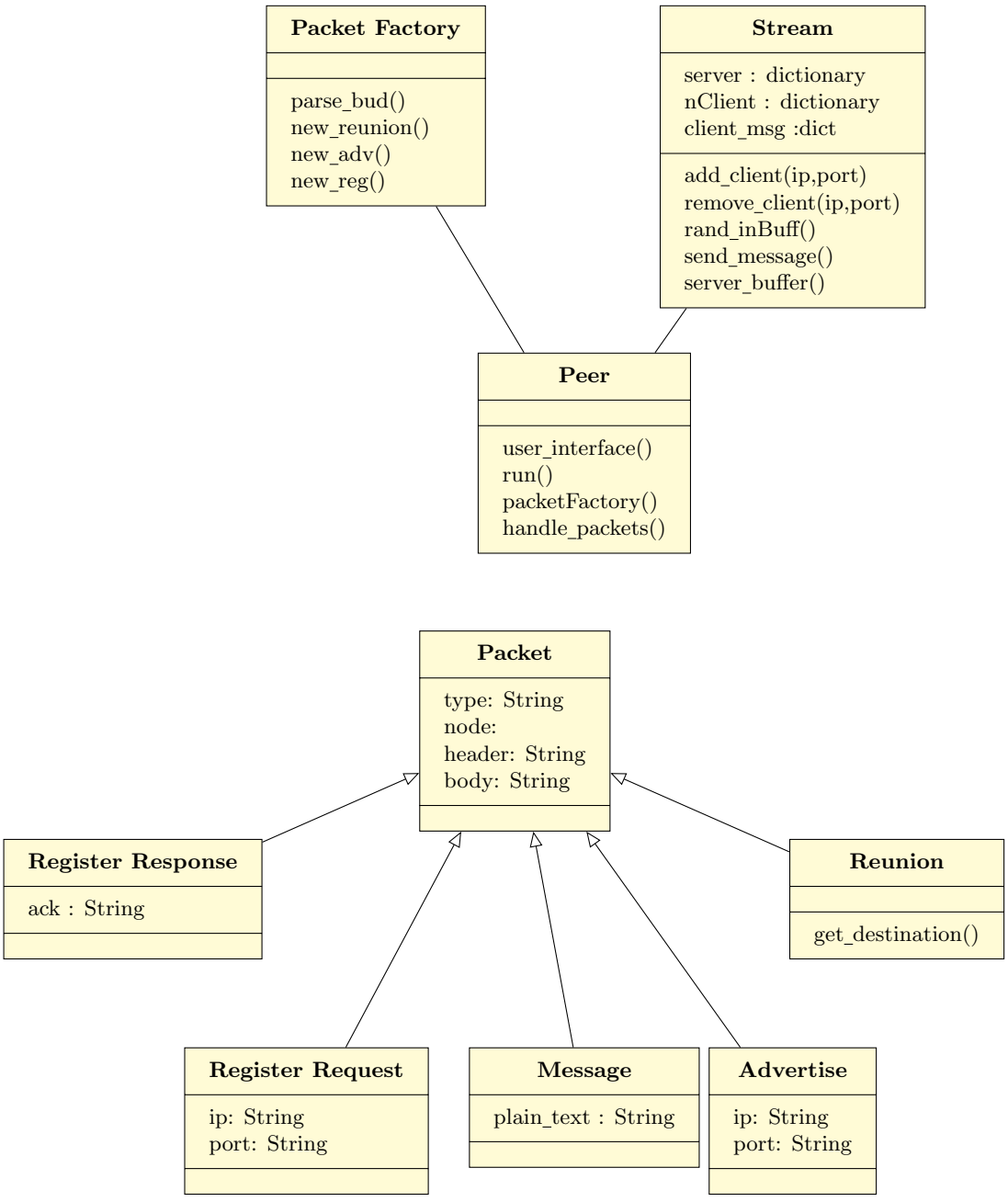
1 Introdeuction

This project aims to implement a peer to peer network. In the first step we design UML model and then we are going to explain each objects' attributes and methods.

2 UML model

We design the UML model in order to make the project more understandable, clearer and professional.



3 Objects

Now it's time to explain every obejct's duty.

3.1 Streem

```
#stream()
add_client(ip,port)
remove_client(ip,port)
send_message()
rand_inBuff()
server_buffer()
```

We also need to add a dictionary to specify every client's message(s)

3.2 Peer

```
#Peer()
stream()
user_interface() #Which the user or client sees and works with.
run()            #This method runs every time to see
                 #whether there is new messages or not.
packetFactory()
handle_packets()
```

3.3 Packet Factory

packetFactory() would generate the packets every node needs to connect another with.

```
#packetFactory
parse_buf()
new_reunion()
new_adv() #makes a new advertise packet.
new_reg() #makes a new register packet.
```

3.4 Packet

Every packet consists seven differntes parts: **plain_text** which is the raw text message in the packet.
Node: Specifies to which node the packet sent to. **Sender** specifies who sent the packet **Validator** which makes the packet valid.
Header where the information such as type of the packet and etc.

are going to be there.
Body body of our packet **Action** says what the packet does.

3.5 Reunion

reunion(packet) checks the connection of the nodes to the root.

```
#reunion(packet)
 get_destination()
```

3.6 Node

Every node has two parameters: **IP** and **Port**.

3.7 Resgister Request

reg_req() sends IP/Port of a node to the root to ask if it can register it.

3.8 Register Response

reg_res() should just send an from the root *Ack* to inform a node that it has been registerd in the root if the reg_req() was successful.

3.9 Advertise

adv(packet)

3.10 Mesasge

msg(packet)