

IaS - Exercise sheet 3

Task 1 - TCP Chat

The idea is to have a driver code *tcp_chat_launcher.py* that allows to start the application as a server or client, depending on the number of arguments given. For the server, only the port number is needed, for the client also the server's ip address is needed.

In the *tcp_chat* package (TestPyPi) we have two methods, one for initializing a server peer, which listens for a client initially, and the other for the client, which connects to the listening peer. If the *launch_client* method doesn't receive the correct parameters and the socket, trying to connect to the server, throws an error, it would be caught and a server would be launched instead. Once the connection is established the *run_chat* method is responsible for updating sockets (with `select()`), request data from socket and check if connection is still there (otherwise close connection), receive data and send data if something is typed in the standard input.

To close the connection, enter `:q` as a message.

Task 2/3 - UDP Chat

The idea is to have a driver code, like in the *tcp-chat*, *udp_chat_launcher.py* that allows to start either the central server unit, or a new client peer. If you run the launcher passing only the port, the server will be initialized, if you pass the server's ip address and port as arguments a new client will be connected to the server.

The *udp_chat* package (TestPyPi) contains two files, one for the client and one for the server side. Once you start a server, this will listen to all new peers and add them into the user dictionary, which acts as an address book {username: client addr}. When you are connected to the server, you can request a userlist, a roomlist, you can connect to a peer/user, you can join a room or create one.

Table of client commands

Commands	Arguments	Meaning
poke	username	connect to that username (like private messages)
kick	-	kick all peers from room
roomlist	-	get a list with the available rooms
userlist	-	get a list with the available users
roomcreate	roomname	create a new room with the name roomname
roomjoin	roomname	join a room (like group chat)
roomleave	-	leave actual room you are in

In order to run this commands, just prepend `$` to the command (ex. `$userlist`).

Task 3b)

With the command: `$userlist` you get the list of participants. TODO rest of answer...

Task 4 - Network Analysis

a)

TODO insert screenshot of collected traffic of tcp and udp chat application.

b)