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DISTRIBUTED SYSTEMS LAB I

Introduction

The Objective of Lab 1 was to create chatroom using sockets and HTTP. It was an individual project. The chatroom consists of max of 4 clients with unique names. The clients communicate to the server through sockets in HTTP. The message is then broadcasted to all other client in the network. A message is of the form:

A:(0:12)-Hello, how is everyone?

Time in message is the time between messages. Both the client and server use a simple GUI interface.

Development

1. Code was developed in Python3
2. PyQt5 library was used to build the GUI interface for both client and server
3. The code consists of three files - server.py, client.py, http_request.py
4. http request and response are handled by HTTP_request class in http_request.py file
5. Code was developed atom text editor with script plugin for python
6. It was created in a Linux environment (Manjaro)
7. The Clients are multi-threaded. You can see the threads used in the sever
8. Request to Server are stored on a text file

```
THREAD : <Thread(Thread-2, started 139729949390592)>
```

To Run

1. You would need to install python3 before running if don't have it
2. Then install PyQt using pip $~ *pip install PyQt5*
3. Compile the server.py first using command python3 server.py on terminal
4. Then the same with the client.py in new terminal tab/window
5. Open additional client in other terminal in a similar fashion
6. Enter your username (be ready to re-enter if invalid)
7. Start talk with your peer Enjoy!!!
8. Type ':quit' to exit
9. On the server side by pressing the join button you while be able to append data to a text file log.txt for later use.
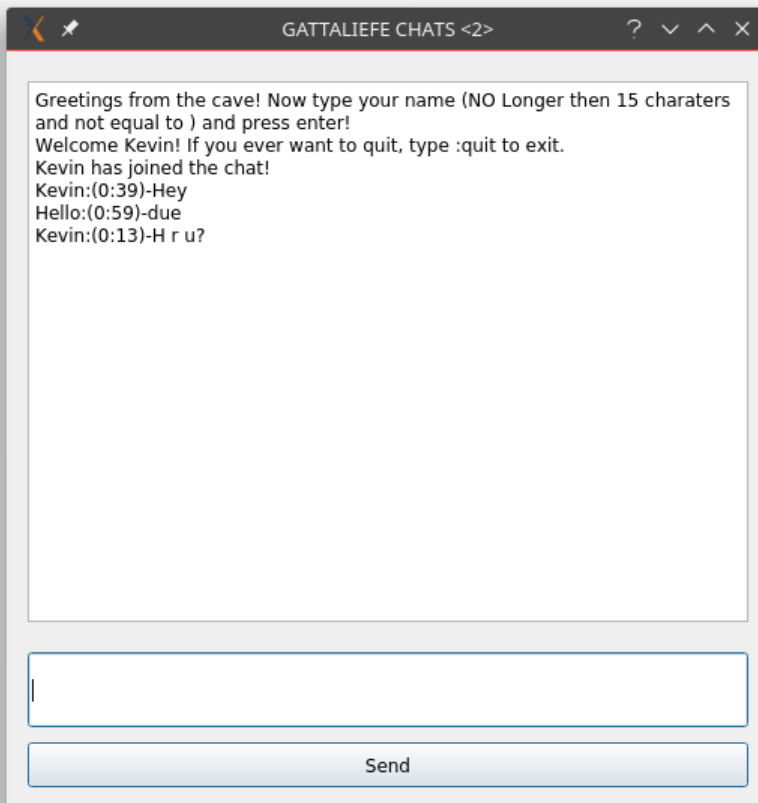
Assumption

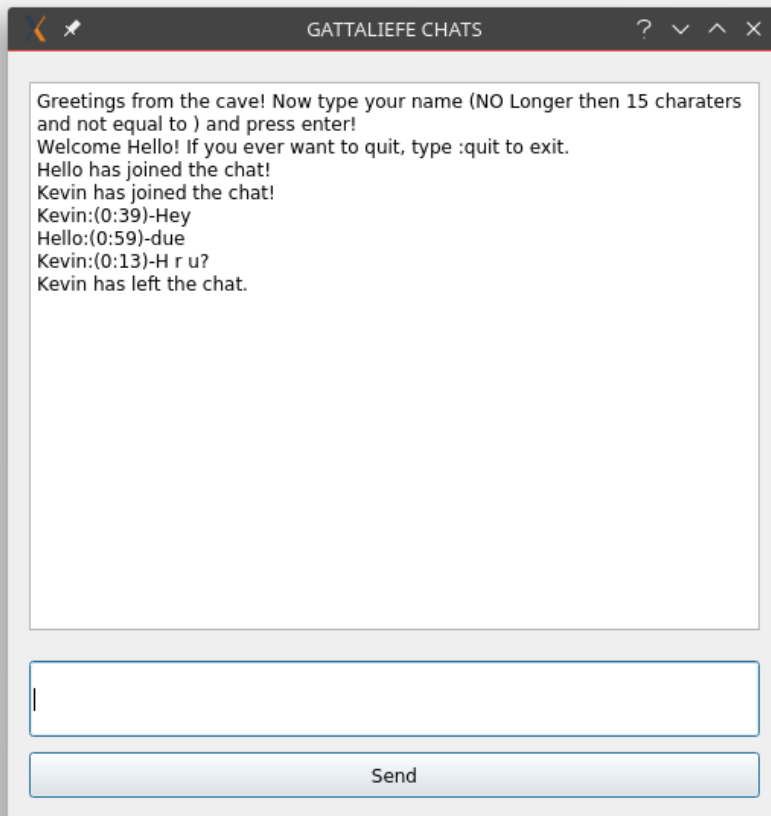The program was build around the following assumptions

1. The server is always on.
2. Only POST and GET method will be used
3. In the cases both GET and POST it assumed that only data in /log.txt file is requested
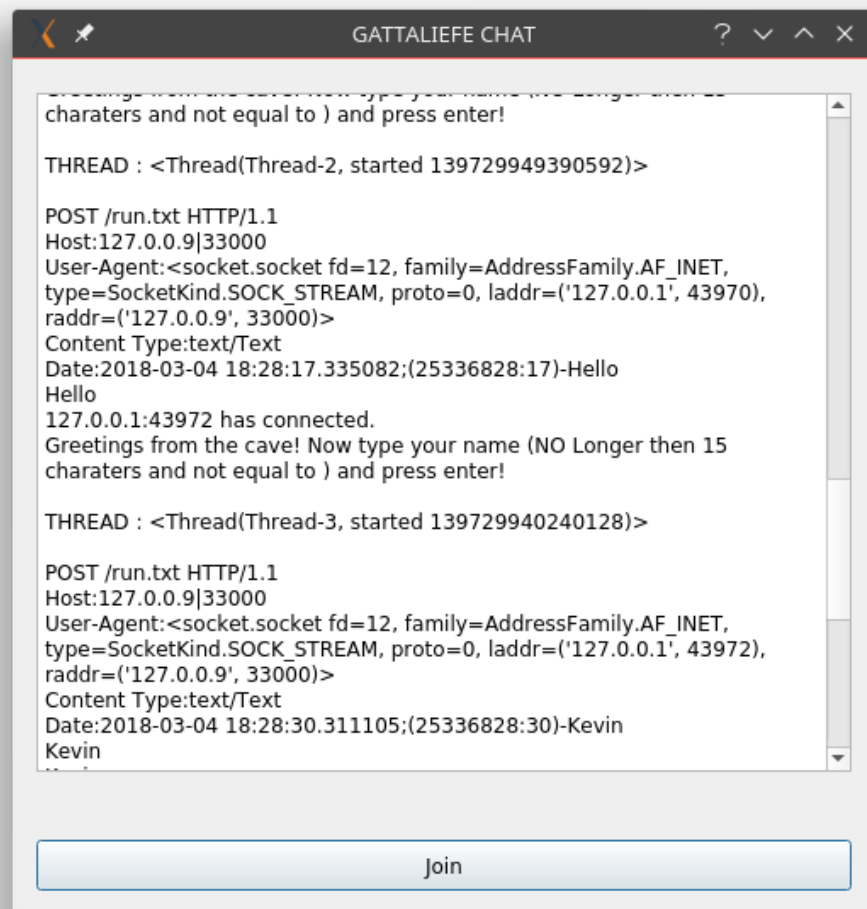4. Port and host address is hard coded (assumed to be free)

Known Bugs

When the last client on the server sometimes the server crash with segmentation fault error (reason = UNKNOWN)

Normal operation talk between user Hello and Kevin

GATTALIEFE CHATS

Greetings from the cave! Now type your name (NO Longer then 15 charaters and not equal to) and press enter!
Welcome Hello! If you ever want to quit, type :quit to exit.
Hello has joined the chat!
Kevin has joined the chat!
Kevin:(0:39)-Hey
Hello:(0:59)-due
Kevin:(0:13)-H r u?
Kevin has left the chat.

Send

Kevin Upon leaving

Server Interface

References

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- https://www.geeksforgeeks.org/simple-chat-room-using-python/
- http://www.mranuran.com/blog/2017/08/04/creating-graphical-chat-application-using-pyqt-and-socket/
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- https://www.qt.io/
- https://docs.python.org/3/contents.html