

Overview: -

This program implements a simple internet chat client. User will need to login to the internet chat server, which is provided. Once authenticated, the user can select one of two rooms(dal,3901) in which to chat. Once user is in a room, the user can post information and see the posts of others. If user is in a room, user can also exit the room or enter another room. In the latter case, user will only get the messages from the new room from that point onward.

This program should be ready to accept two command line arguments:

1. -h for the name of the host to find the server
2. -p for the server's port number.

Users will not get a messages from others asynchronously. When user send something to the server, the response from the server will contain any messages posted to the room since the last time you received a response.

client must be able to send 5 commands to the server:

- AUTH -- authenticate the user to the server
- ENTER -- enter a specified room
- EXIT -- exit a specified room
- SAY -- post information in the room
- BYE -- deregister from the server

Files and external data: -

1. server1.py :- This file contains all the information and implementation of the server. The implementation is done in the python language.
2. Client.java:- This file contains the information and implementation of the client. Using this file we can send the request to the server and check what response we are getting.
3. program is implemented and tested on hector.cs.dal.ca

Data structures and their relations to each other: -

1. Class Name: - Client

2. Method: - All the method names have mentioned below.

- **auth(String host, int port):-** This method will check for the user's authentication. It will ask for user's id and password. if its matching then server will return the success message(2xx). if user enters wrong username or password then server will say there is error on client side(4xx).
- **Boolean enter(String host, int port):-** This method will ask user to enter the name of chatroom. To enter in a chat room user must be authorised. A message to enter valid

room (dal,3901) returns with a return code 200 A message to enter valid room returns with a return code 402.

- **void say(String host, int port):-** This method is used send a text in the room It used current roomname to say the message. A request to post information to the current room returns with a return code of 200. A request to post when not in a room or to the wrong room returns with a return code of 402.
- **void exit(String host, int port):-** This method is used if we want to exit from a room.It uses current roomname to exit. If user not in any room and try to exit from the room then it gives Invalid room requested.
- **void bye(String host, int port):-** This method is used to deregister the user from server It should only execute if user is authorised.
- **void exitorsay(String host, int port):-** This method should execute if user is authorised and entered into the correct room. It ask if you want to SAY or EXIT or ENTER or BYE from the program. If we choose say then the body of the SAY message contains the text to say in the room.It also allows user to Enter in the different room after entering in one room and send text correct then it will exit.User can also any time deregister from the server.

Assumptions: -

1. If authentication is wrong for user then execution of program is end.
2. User can enter into only two chat room dal and 3901(Case Sensitive).
3. User can only deregister if he is authorised.
4. User can't exit from the room if he hasn't entered in any room.
5. User can exit from the current room only.
6. If first time user enter wrong roomname then program is end.

Key algorithms and design elements: -

1. Various string manipulation operations such as substring(),length(),equals() are used to get Desired value from the program.
2. Static variables are used to store the value of cookie and roomname and final variables is used to compare the string with servers response.
3. Looping structure is used to ask users to execute different command according to their choice.

References: -

- <https://docs.oracle.com/javase/tutorial/essential/environment/cmdLineArgs.html>
- <https://stackoverflow.com/questions/1522564/how-do-i-run-a-python-program>