Student Name: Zhengnan Zhang Student Number:z3493978
Python 3.5.1
Program Design:
For the server side:
Firstly I use serverSocket to open and receive the request from the client, when there is a request from the client, use a new connectionSocket= serverSocket and then open a new thread. After that, I use def(client) to do user authentication, I make the dictionaries of online_client, client_login_time, blockname, offline, total_users, and block_list to implement every functions.
Online_client is used to remember who is online, when client logout or client have inactivity for a certain period, the key will be delete in this dictionary.
Client_login_time is used to remember every client login time, this is useful when client use whoelsesince() command. Blockname is used for which client input incorrect password over three times, if the client has the correct username, this username will be remember in the blockname, otherwise, the IP address will be recorded, and the value would be the time that this user attempt to login. When a new client want to login, the serevr will examine this dictionary, if the current time minus the value of that username is bigger than a certain period, it will be allowed to login, otherwise it will be blocked.
Offline is used to remember the messages that be given to the client that is not online currently.
Total_users is used to get all information of the users from the txt file.
Block_list is the blacklist, it is used to record which clients has become particular client's blacklist.
For the client side:
I design three threads, def(loging) and def(timeout) is open first, loging is used the authentication user, and the timeout is used to judge if the client has inactivity for a certain period. After the client has already authentication successful, the third thread will be open and begin to receive the message from the server.

I put the timeout function into the client side is because that when client input the username and the password, it didn’t send I could also close this socket. And also by this method, it could release the pressure at the server side.

The input is : message(user)(message), broadcast(user),block(user),unblock(user)