Networking Lab Assignment

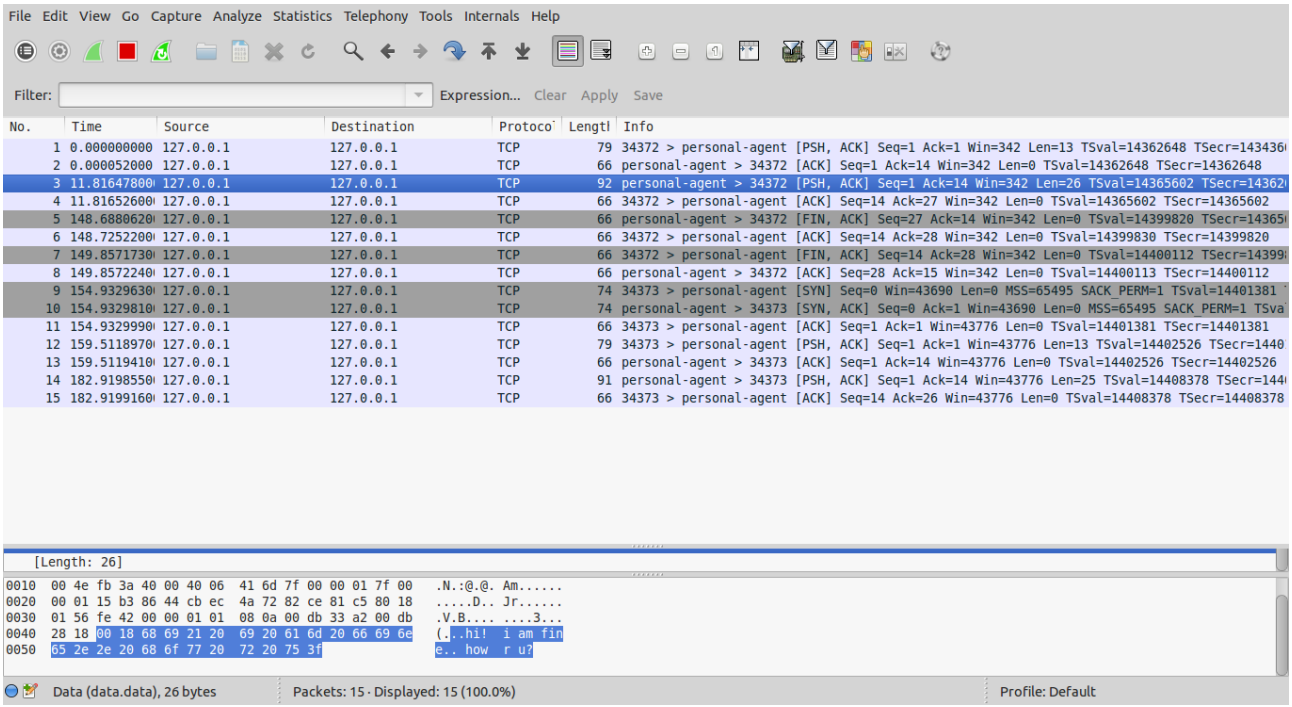
Name : SP Harish
Roll No : IIT2013134

Compiling and Running the file:
a) There are two projects:
SingleClientServer_ChatApplication ,
MultipleClientChatting

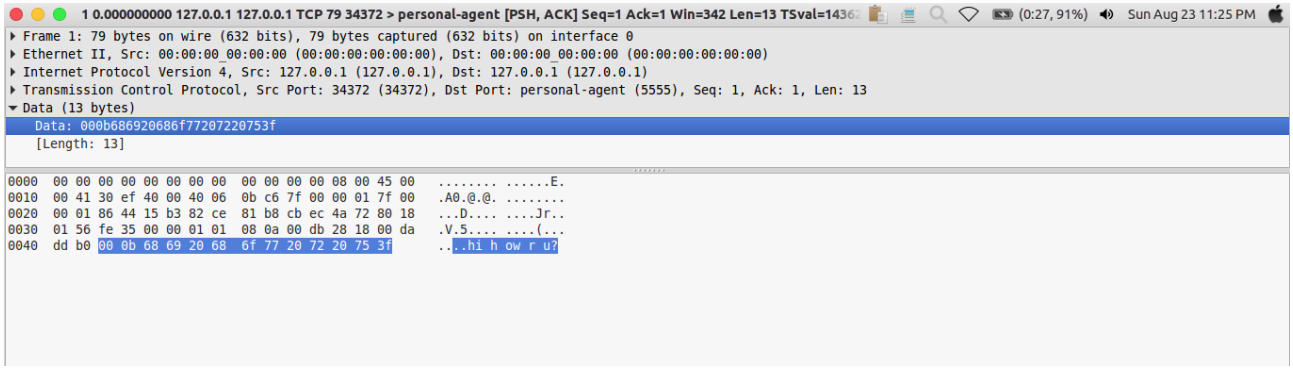
b)To run a project, copy the entire project into Netbeans Projects Application or import the project;

c)For each of the projects, run the Server class first to set up the server. Then run the Client class. In Case of multiple chat clients, run the Client class again multiple number of times.
Run Command for a class : Open the class in Netbeans and press 'Shift+F6'

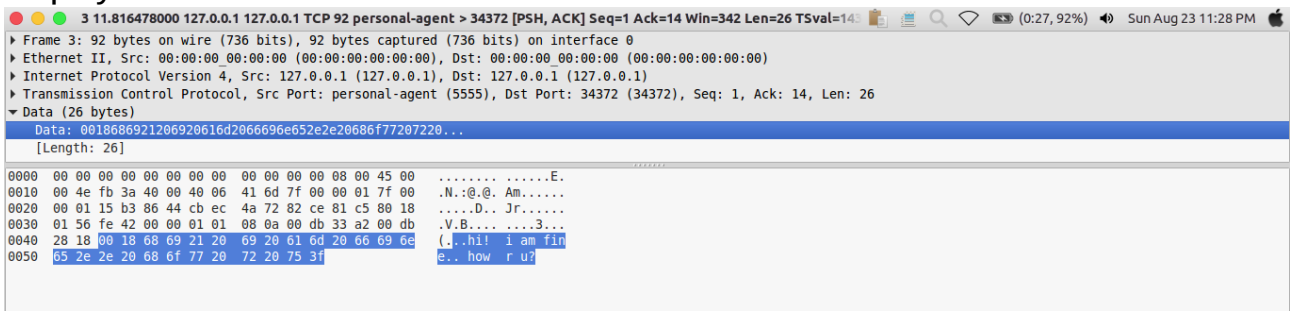
1)A simple chat application in which a single client communicates with the server.
Wireshark screenshot :



Data Sent from client :



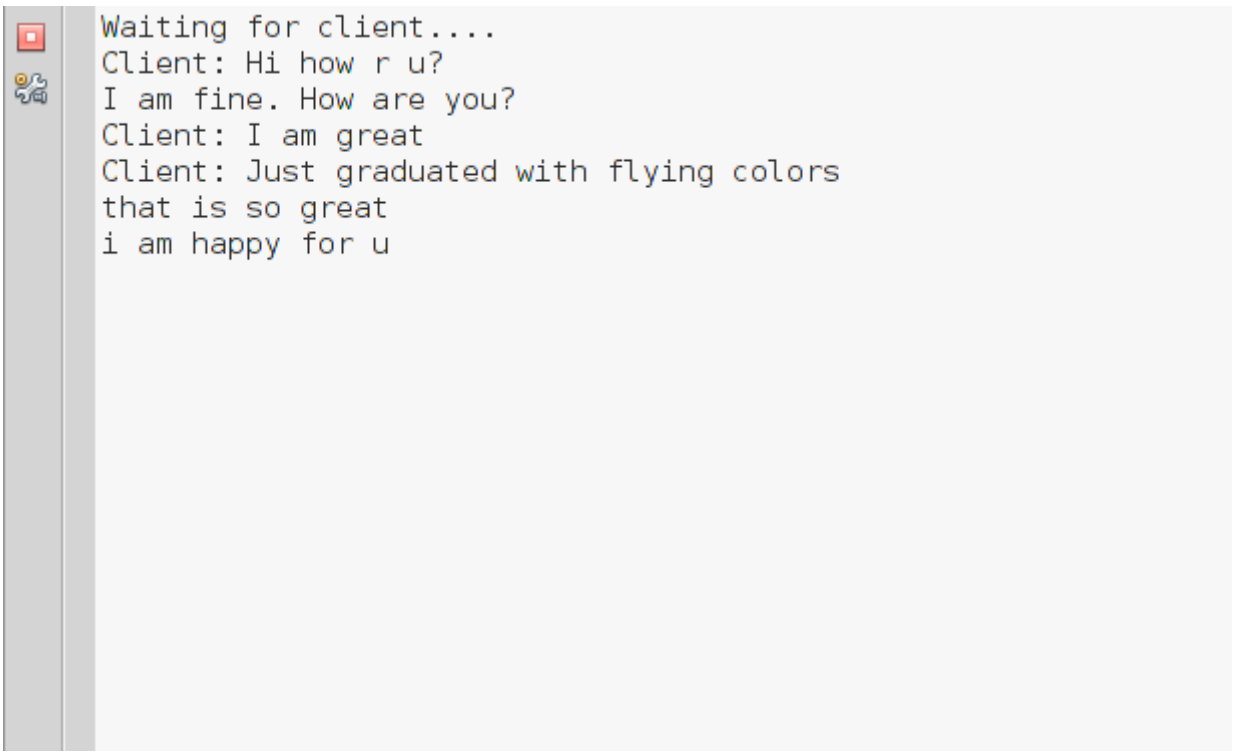
Reply from Server :



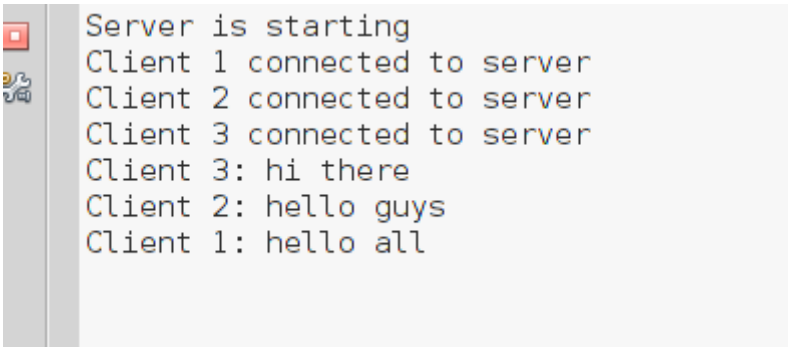
Chatting Screenshot :

Client :

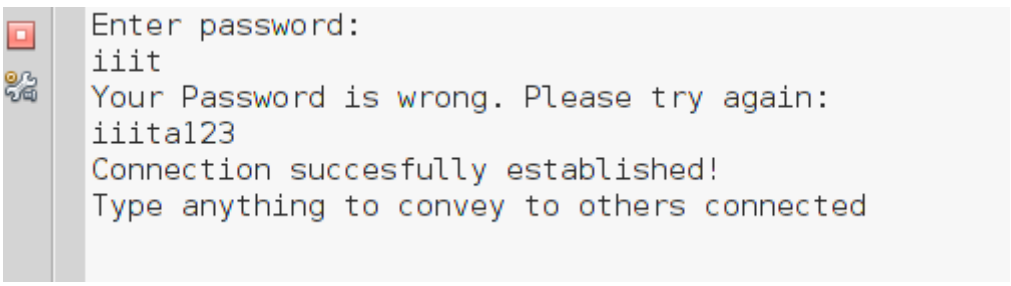
Server :



2) Supporting Multiple clients using thread programming wiht authentication.
Server Log:



Password Checking :



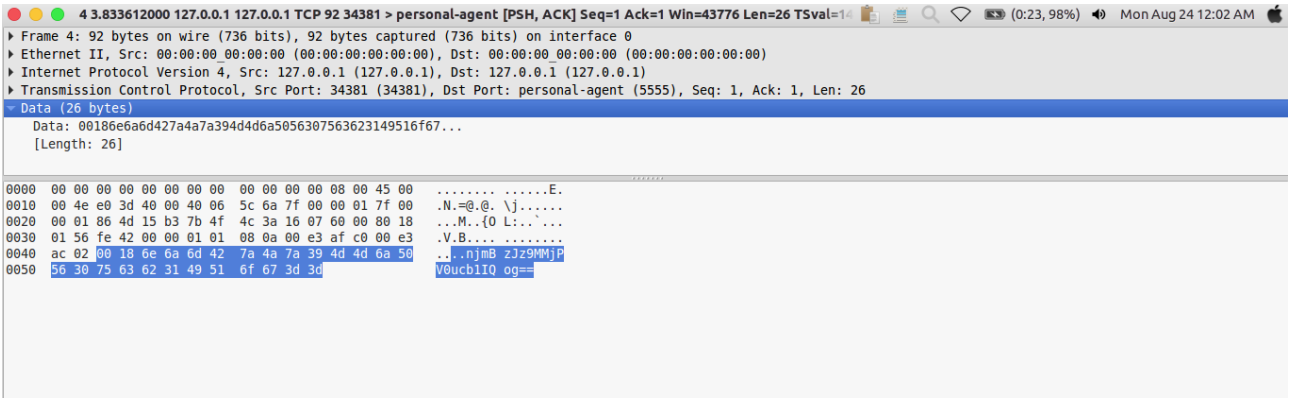
Screenshot of 3 clients:

```
Enter password:
iiita123
Connection succesfully established!
Type anything to convey to others connected
Client 3: hi there
hello guys
Client 1: hello all
```

```
Enter password:
iiita123
Connection succesfully established!
Type anything to convey to others connected
hi there
Client 2: hello guys
Client 1: hello all
```

```
Enter password:
iiit
Your Password is wrong. Please try again:
iiita123
Connection succesfully established!
Type anything to convey to others connected
Client 3: hi there
Client 2: hello guys
hello all
```

3) I Encrypt messages while sending through the server and decrypt it again back. Encrypted message captured in wireshark:



4) For security reasons, we encrypt the message and send it via the server using AES Algorithm.

For encryption we must use a secret key along with the algorithm.We use an algorithm called **AES 128.** AES algorithm can use a key of 128 bits (16 bytes

* 8);
Actual message : helloall
EnCrypted message : njmBzJz9MMjPV0ucb1IQog== by algorithm which is same as captured in the wireshark.