

JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY



COMPUTER NETWORKS LAB PROJECT REPORT DELTA CHAT ROOM

SUBMITTED BY:-

Chitransh Mishra (17103103)

Atharva Tripathi (17103127)

Ayush Saxena (17103108)

Trinendra Mehria (17103021)

Main Objective :

Designing a complete chatting environment, with all the features

- like sending and receiving messages from various clients
- sending files from one client to all
- connecting and disconnecting to the server at our will.
- sending public as well as private message among the users.
- sending image file through sockets.
- encrypting the message through our own algorithm.

Data Structures Required :

We have covered the following grounds under this project :

Sockets : Sockets will provide a path to communicate between various clients.

FD_SET : FD_SET is a part of the basic file description library. All the sockets are described inside this section as subsets.

Arrays : To keep the records of the sockets available at connection.

Structures: Message packages will be sent in the form of structures and connection details will be stored in structures.

Some additional designs to implement an UI to show the current running process.

Functionalities:

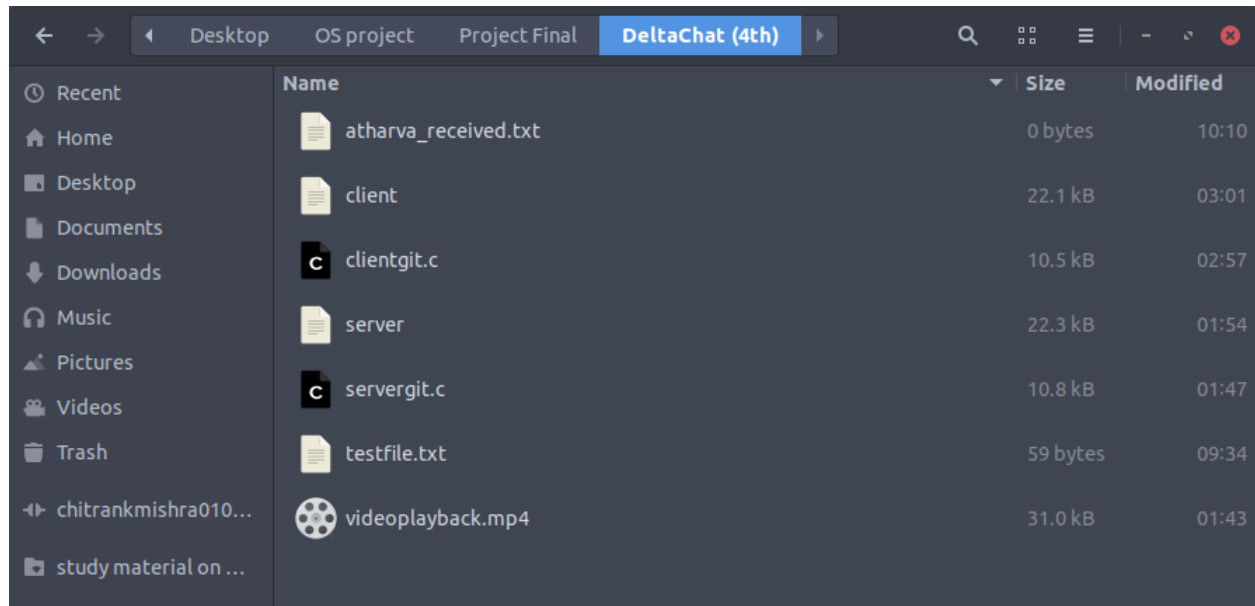
- ./server <port number>: make the terminal a server
- ./client <ip address><port number>: connect to the server
- <text>: send the text as a message to other clients.
- /h or /help: displays help menu
- /l or /list: displays all the clients connected to the server.
- /q or /quit: disconnects
- @<user> <text> : send a message to the specified user
- /f or /file: send a file to all the clients.
- /i or /image: Send an image to all the clients.

Work Distribution :

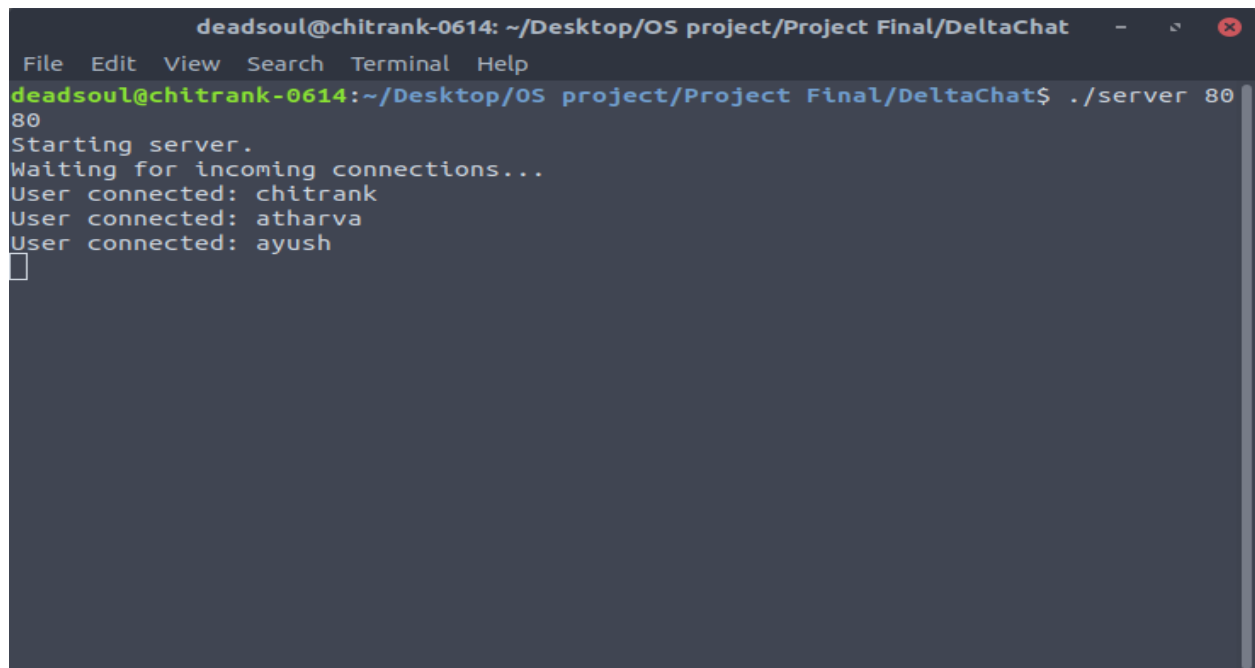
Designing :	Ayush and Trinendra
Algorithm implementation :	Chitransh and Atharva
UI :	Chitransh and Trinendra
Others:	Ayush and Atharva

Completed On: 28th November 2019

Screenshots:



Main files under the project.



Server Side

```
deadsoul@chitrnk-0614: ~/Desktop/OS project/Project Final/DeltaChat (2nd) - [X]
File Edit View Search Terminal Help
deadsoul@chitrnk-0614:~/Desktop/OS project/Project Final/DeltaChat (2nd)
$ ././client 127.0.0.1 8080
Enter a username: ayush
Connected to server.
Type /help for usage.
hii
chitrnk: How are you ayush?
atharva: i am ending a file
atharva: sending*
From atharva:Receiving File
File received
/h
/quit or /q: Exit the program.
/help or /h: Displays help information.
/list or /l: Displays list of users in chatroom.
/file or /f: Send a file in the chat room
@<username> <message> Send a private message to given username.
█
```

Client: Ayush

```
deadsoul@chitrnk-0614: ~/Desktop/OS project/Project Final/DeltaCh... - [X]
File Edit View Search Terminal Help
deadsoul@chitrnk-0614:~/Desktop/OS project/Project Final/DeltaChdd
deadsoul@chitrnk-0614:~/Desktop/OS project/Project Final/DeltaChat
)$ ././client 127.0.0.1 8080
Enter a username: chitrnk
Connected to server.
Type /help for usage.
atharva has connected.
ayush has connected.
ayush: hii
How are you ayush?
atharva: i am ending a file
atharva: sending*
From atharva:Receiving File
File received
/l
chitrnk
atharva
ayush
█
```

Client: Chitrnk

```
deadsoul@chitrunk-0614: ~/Desktop/OS project/Project Final/DeltaCh... - [X]
File Edit View Search Terminal Help
deadsoul@chitrunk-0614:~/Desktop/OS project/Project Final/DeltaChat
deadsoul@chitrunk-0614:~/Desktop/OS project/Project Final/DeltaChat
)$ ./client 127.0.0.1 8080
Enter a username: atharva
Connected to server.
Type /help for usage.
ayush has connected.
ayush: hii
chitrunk: How are you ayush?
i am ending a file
sending*
/f
Enter file name
testfile.txt
testfile.txt
The File Was Sent Successfully
█
```

Client:Atharva