

A readme.txt with group details and instructions required to run your code (including any installation instructions). Also include a small video (screen recording) which demos your running code. Submit only one file per group

Group Details:

EGNA PRANEETH GUMMANA	: 2018HS030284P
SHIVAM GOYAL	: 2018HS030167P
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Advanced Features Implemented:

1. Image transfer (expanded to incorporate any File Transfer)
2. **Group Chat**

Installation Instructions:

1. Extract the zip file.
2. If using the linux environment. Please install pip, grpcio, grpciotools:
3. “
 sudo apt install python3-pip
 pip3 install grpcio
 pip3 install grpcio-tools
“

Instructions to test and run:

1. Go to repository directory
 gprc_python_chat/
2. Run server:
 python3 server.py
3. To run an instance of client (in a separate machine or a new terminal):
 python3 client.py

Following are client commands to chat with other clients:

4. Client.py will Execute and show Options to Register, Login or Exit. Follow the steps to register/login. After login you are directed to the following menu.
5. Client **Joins the userspace** to chat. And it is presented with menu:

```
You are connected to the chat server
Hi, this is the menu page. The available options are:
1. Chat
2. Create Group
3. Exit
Please enter your choice (number):
```

6. To enter a chat with someone, enter '1'. To create a group enter '2' and '3' to exit!
With 1, we get to see the active users/groups to chat with, and we also see if we have some unread messages from someone online.

```
Please enter your choice (number):
1
You can enter '/back' to return to menu
Below is the list of active users:
1. ram
2. shyam [6]
3. keshav [4]
4. mohan
Please enter the name of the user to chat with: ram
```

7. NOTE: A client can send chats to and see chats from one client at a time, as what happens in real chat applications like WhatsApp, **while still receiving chats from other online users, if they wish to send**. This is where we see **unread messages [6]** in front of sender client names.
8. AND just like any good chat application , when a client enters into chat with someone with unread messages(say shyam with 6 unread messages): **They see complete chat history with them in this session along with the [6] unread messages**.
9. Clients can enjoy chatting with their friends, one at a time, and come \back to the menu for all options such as to chat with different users and groups, **to create a group**, etc.

```
shyam: hi, good morning
ram(Me): hello, gm
shyam: did you check the email?
ram(Me): couldn't get time today, was away from the net. This
intranet chatting is cool though.
shyam: no worries, i am sending you the file here
shyam: /file:img2.png
ram(Me): Downloading(img2.png) :-----Success!
ram(Me): awesome! Thanks
```

This takes us to **FILE TRANSFER**

10. As above example:

A client can simply send the file to the person they are chatting with, using a prefix of `/file:` followed by [absolute/relative location](#) of the file.

Example:

```
shyam(Me) : /file:./resources/scrnsht.png
Uploading:-----Success!
```

11. Note:

UPLOADING

Sender client first sends the Metadata of the file(name, dest, extension, etc) followed by the actual file in chunks/packets of 1024 KB.

Each '-' in the progress bars, denotes 1 chunk received *in real time* at the server.

Server *collects* the file and stores it in folder: `./uploadedFiles/`

Sender Client(shyam):

```
shyam(Me) : /file:./resources/scrnsht.png
Uploading:-----Success!
```

DOWNLOADING

Then the receiver client, sees the filename sent to it, and *automatically* downloads the file from server, at `./clientFiles/`

Receiver Client(ram):

```
shyam: /file:img2.png
ram(Me) :
Downloading(img2.png) :-----Success!
```

At the server side:

upload

```
[shyam] to [#SERVER#] : dest:[ram],file:img2.png----- Uploaded!
```

download

```
[#SERVER#] to [ram] : from:[shyam],file:img2.png-----
Downloaded!
```

Groups:

12. Groups can be created. Once created they will be available in the chat option under Menu. When a user selects it, he will be able to chat with all the users present in the group.