README

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This is a network program that allows clients and servers to interact using commands. The program has two modes of operation: server mode and client mode.

Instructions:

Install the requirements using `pip install -r requirements.txt`

Open terminal or command prompt at the folder in which the FileApp.py file is located.

FileApp.py - Main python program file to run as client or server.

Util.py - utility file containing variable names

Run the below commands to start a server or client respectively.

The server and client can be started using the command line arguments "-s" and "-c" respectively.

```
FileApp -c <name> <server-ip> <server-port> <client-udp-port> <client-tcp-port
```

Eg. python3 Network.py -c sam 127.0.0.1 4000 2100 3100

Registration

The client can successfully register with an available username using the program. Upon successful registration, the client's local table is initialized. However, if the requested username is already taken by another client, the server rejects the request.

Eg. (base) bravo99@Saps-MacBook-Air client_1 % python3 FileApp.py -c joey 127.0.0.1 4000 5100 4100

>>> Welcome, You are registered.

>>> Client Table Updated

Eg. (base) bravo99@Saps-MacBook-Air 4111_file_transfer_socket_programming_project % python3 FileApp.py -s 4000

Running on IP:127.0.0.1

Running on port:4000

File Offering

The "setdir" command works as stated in the specification. The "offer" command will fail with an appropriate error message if no "setdir" command has succeeded.

>>>setdir ./

>>> Successfully set <./> as the directory for searching offered files.

>>>offer pqr.txt abc.txt

>>>offer abc.txt

File Listing

The program can correctly list file offerings using the table with proper formatting. It will display a proper message when no files are being offered, and the file is updated when the client table is updated.

>>>list

File | Name | IP | Port

(‘abc.txt', 'joey', '127.0.0.1', 4100)

('mcq.txt', 'sam', '127.0.0.1', 3100)

File Transfer

Clients can successfully request and receive a file offered by another client using request command.>>> request filename client_name

>>>request abc.txt joey

De-Registration

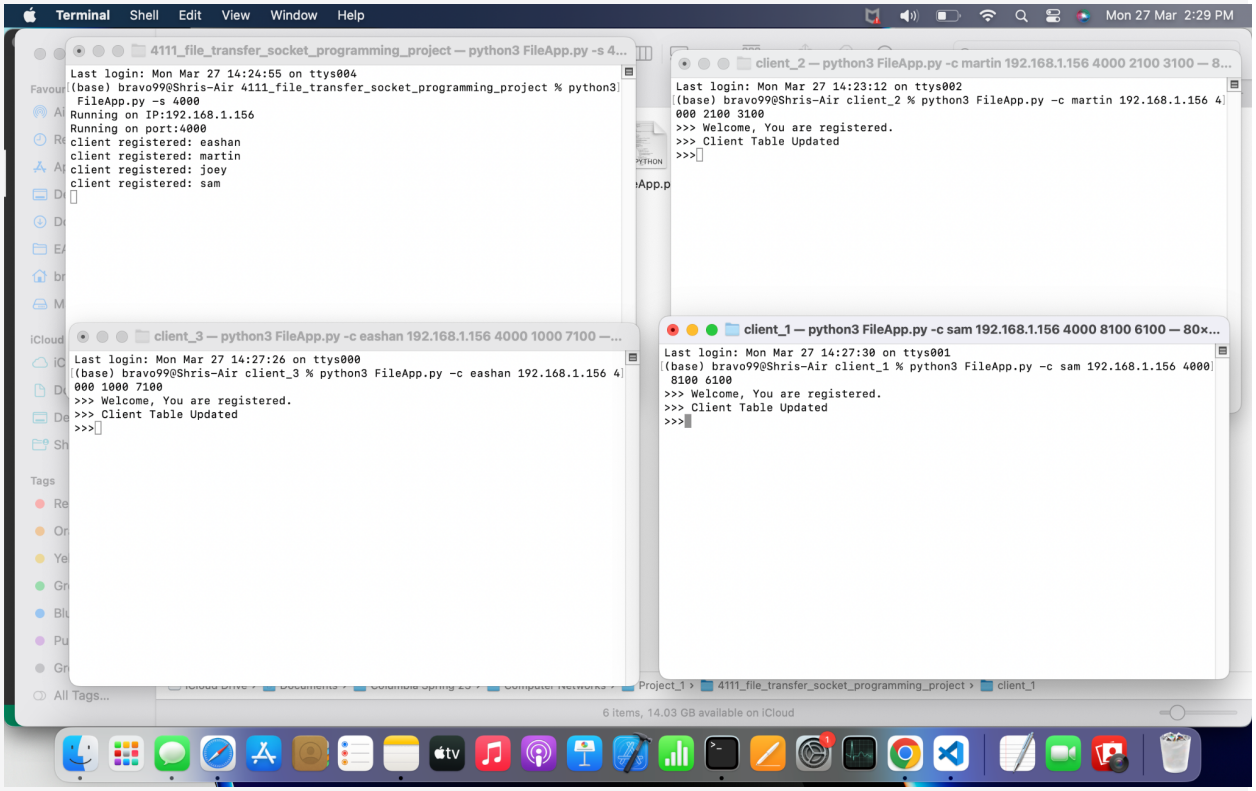
The "dereg" command de-registers the client without exiting the client program.

>>>dereg joey

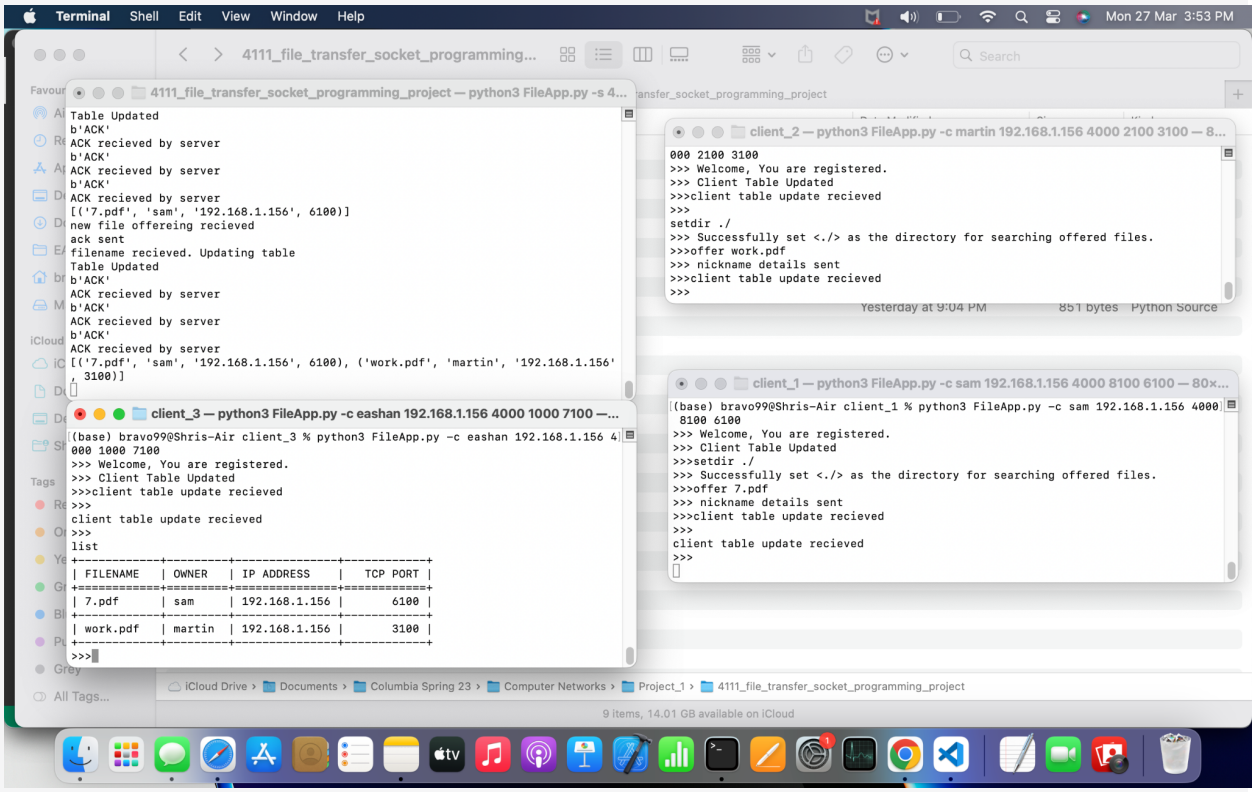
>>> you are offline. Bye

Sample Output

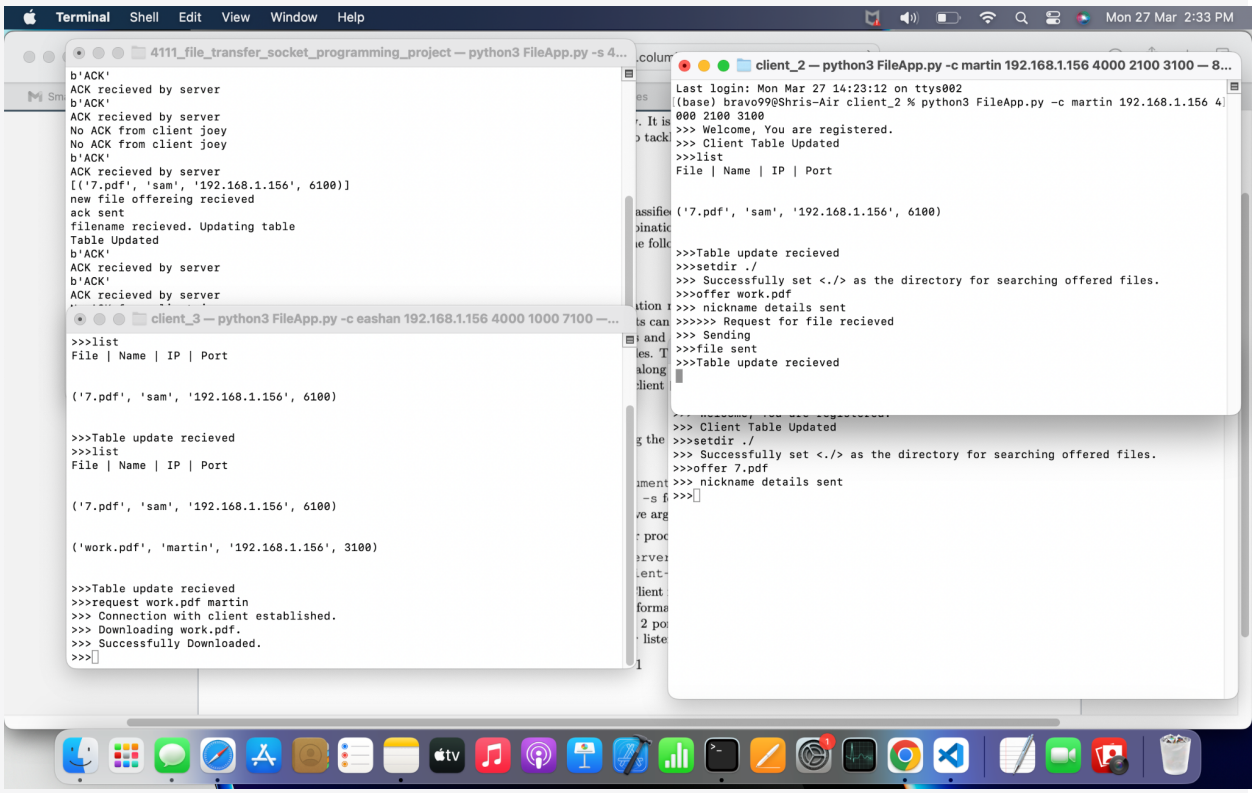
Ex1 . multiple clients are registered with server



Ex 2. File offered by Client 1 and Client 2. Table list is updated across all clients.



Ex 3. Requesting and downloading file



Ex 4. Deregistration of client 1 and table updates