About The P2P Network

This is a basic implementation of a P2P network. The instructions to run this network are very simple. To run the network follow the given steps:

1. Run the `manager.py` file using the following command:

```
python manager.py --host localhost --port 12000 --max 20
```

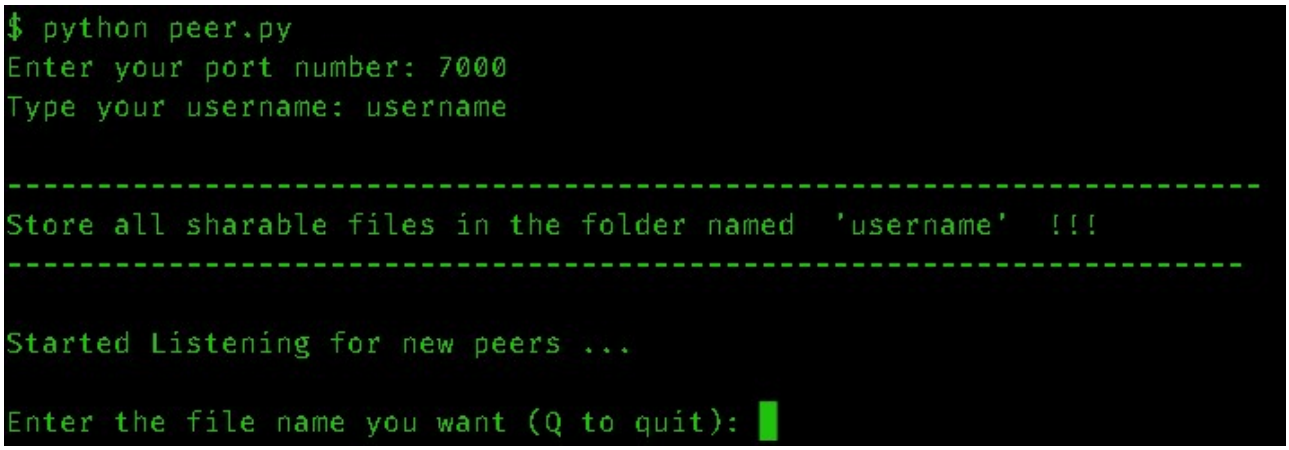
host: Host where the manager will run. (*default* = localhost)
port: Port where the manager will run. (*default* = 12000)
max: Maximum number of peers connection (*default* = 20)

2. Now to run the `peer.py` file open a new terminal and run:

```
python peer.py --manager_host localhost --manager_port 12000 --host localhost --
max 20
```

manager_host: Host where the manager is running. (*default* = localhost)
manager_port: Port where the manager is running. (*default* = 12000)
host: Port where the peer will run. (*default* = localhost)
max: Maximum number of peers connection (*default* = 20)

3. In the `peer.py` terminal you should be prompted to enter your unique `port number` (around 7000) and `username`. Once that is done a folder will be created with the entered username. As shown below:



Terminal of peer

Folder created for the peer

4. In the `manager.py` you can see the table containing the currently active peers.

```
Showing Availabel Peers...
+----------+-----------+-------+
| Username | Host      | Port  |
|----------+-----------+-------|
| username | localhost | 7000  |
+----------+-----------+-------+
```

Table showing currently active peers

5. Next you can open more terminals and run more `peer.py` files as shown above with unique usernames. The `manager.py` terminal will look like this:

```
Showing Availabel Peers...
+------------+-----------+-------+
| Username   | Host      | Port  |
|------------+-----------+-------|
| username   | localhost | 7000  |
---------------------------------
| fire_user  | localhost | 7001  |
---------------------------------
| water_user | localhost | 7002  |
+------------+-----------+-------+
```

Table showing currently multiple active peers

Transferring files

1. Copy the initial files for every peer and put them inside the corresponsing peer's folder.

bison.exe in fire_user and water_user

2. Now in the terminal of the other peer, fetch that file

```
------------------------------------------------------------------
Store all sharable files in the folder named  'username'  !!!
------------------------------------------------------------------

Started Listening for new peers ...

Enter the file name you want (Q to quit): bison.exe
Enter the name of downloaded file: bison.exe
938  chunks will be downloaded...
Chunk  0  downloaded... From  water_user
Chunk  1  downloaded... From  fire_user
Chunk  2  downloaded... From  water_user
Chunk  3  downloaded... From  fire_user
Chunk  4  downloaded... From  water_user
Chunk  5  downloaded... From  fire_user
Chunk  8  downloaded... From  water_user
Chunk  6  downloaded... From  water_user
Chunk  7  downloaded... From  fire_user
```

bison.exe getting fetched parallely in chunks

3. Now if you look at the other peer's folder, you will see *bison.exe*

bison.exe in the other peer

4. You can press `Q` in a peer to quit.

Demo Video Link: Click Here