CN Assignment *README*

200010045 || Rajat Lavekar

Instructions to execute this assignment :

- Initially *200010045_manager.py* should be executed with no command line arguements.
- Now the user is free to create as many peers accounts as he wishes. The format to execute a peer is

```
python3 peer.py {PORT} {TTL_interval}
```

- Here we recommend the user to keep his port number {*PORT*} to not clash with any of the standardly used ports. If any error occurs, reexecute the command using a different free *PORT.*
- The *TTL_interval* represents the the time the current peer will remain active in the network. If the time exceeds then the connection will be closed, and the user will have to resign the peer into the network.
- If the *TTL_interval* field is not filled, then the peer will be signed in till indefinitely, until the manager isn't closed.
- After the *TTL_interval* finishes, then the peer will be removed by the manager from its active peers list, and the updated list will be broadcasted to all the remaining peers.
- A shared file "*shared_file.txt"* is present in the zip, which will be the main file which will be fragmented and shared between the active peers.
- For peer sharing, a peer has to login through the '*5001'* port, for file transfer to start. The file will be fragmented according to the number of active users currently, and the fragments will be collected by the peer 5001.
- If any active peer leaves in between the file transfer, then the missing fragments will be fetched by the peer 5001 itself from the shared file.
- A reconstructed file will be created in the same directory which will contain the exact contents of the shared_file
- A demo video has been attached, which shows all the implementations of the features used, and their accuracies.

---------- *Explaining the Video* ----------

- In this demo, we have seen that the peer with Port no. 3000, was removed (after its allotted 20sec finished), and then when a peer signed in through the port number "5001", which is the specialised port for collecting the fragmented parts from all other active peers.
- We can clearly see that the received fragments are from 5001 itself and 4000 peers, not from the 3000 port numbered peer, as this peer was removed by us.
- Hence the only active peers remaining currently are 4000 and 5001.
- Now let's see our shared drive initially, and the re constructed file later..

We have seen how the shared file is reconstructed clearly in the video.