Assignment Q3

- Initially, when server & client run, they communicate over ~~a common~~ 2 common queues, a client q and a server q. Server q is where server receives a msg whereas client q is where a newly joined client communicates.

- New client is alloted a client id, or the client types its previously alloted id. Using the new client-id as key, it creates a private msg q for this client.

Structure of msg

```
struct payload {
      char buffer [200]; → stores the msg
      char header [20]; → header txt of msg
      long pid; → pid used when sending prsnl msg
      long client-id; → private msg q id of client
      long gid; → gid used when sending grp msg.
}     time-t msg-time → time when msg sent.
```

~~struct MESSAGE {~~
~~long mtype;~~

```
typedef struct {
      long mtype;
         struct payload payload;
}
```

- A 2-d array groups [200][200] keeps account of members of each group. Each row rep. a group & colums of each row represent members joined. Member is added by storing it's private msg q id.

Scanned with CamScanner

- Each client has 6 options ->

1> list all groups -> server keeps count of all groups alloted in group-count. It sends this to client when requested. "-1" means no groups yet.

2> new group -> server allots a new group id, add clients private msg q to groups 2-D array in respective row (add requesting client to group).

3> join group -> server adds client to requested group. You need to know the group-id to join the group.

4> snd msg to grp -> client sends msg to server, msg contains group id and msg to be sent. Server sends the message to all members of group using the 2-D array.

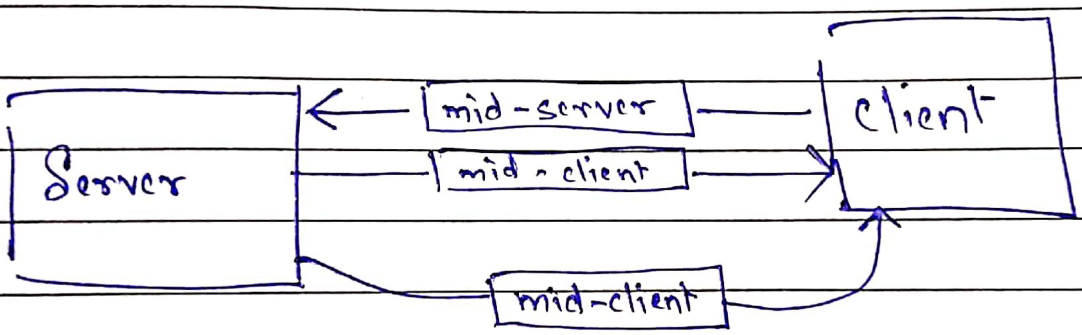
5> snd msg to prsnl -> you need to know person's private msg q id. This doesn't involve server. Sends msg directly to another client.

6> read msg -> Read all the msg that is accumulated in private msg q.

- when client exits, it stores all the group ids that it is a part of in a ".txt" file named with the client - id alloted by server. i.e. "0.txt" for client 0.

- when server exits, it stores all the client-ids alloted till now, all the groups alloted till now along with their member msg q ids.

- If a client reads a msg > 10s, of sending time, it is discarded by the client and contents not displayed.



when client-id recognized, Separate for each client.