MP2-Design

GITHUB LINK: https://github.com/kuma190/CSCE438

- Tsd.cc
  - Login
    - Add username to userfile
    - Create following, followers, and timeline files for user
    - Add username to its own followers file
  - Follow
    - Check if user exists
      - Check if potential user is not in original user's following file and not in potential user's follower's file
        - Add potential user to both files
      - Else
        - User already exists error
    - If user does not exist
      - Invalid user error
  - Unfollow
    - Check if user exists
      - Check if potential user is in original user's following file and in potential user's follower's file
        - Remove potential user from both files
        - Remove potential user's posts from original user's timeline file
      - Else
        - User does not exist
    - If user does not exist
      - Invalid user error
  - List
    - Get all users from users file
    - Get all users from username's followers file
  - Timeline
    - Create unordered hashmap that relates usernames to stream pointer
    - Receive stream and read messages from calling user (wait)
      - If calling user's username does not exist in hashmap:
        - Add username and its stream to hashmap
        - Get all posts from username's timeline
        - Write each post to calling user's stream in reverse fashion if the post is from a user that is in calling user's following file.
      - If calling user is in hashmap
        - Get calling user's followers from its followers file
        - Write post message to each of the followers' timeline files

- ○ If follower is in hashmap, write the post to their stream
- Tsc.cc
  - ○ Handled commands by splitting up at space delimiter and creating two separate tokens (if the command was list and timeline, only one token is created)
  - ○ Login sends request receives reply, nothing is done with reply
  - ○ Follow and unfollow do the same, the message in reply stores what the comm_status will be.
  - ○ Timeline has the main writer process which gets inputs from cin and sends it to server using Clientreaderwriter stream. Timeline also has reader thread which reads values from a stream and outputs it to the console.