# **Project 4 ReadMe**

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# Explain what functionality is implemented

Six functionalities were requested for this project.

The first functionality is to register the account and delete the account. The second is to send tweets, the third is to subscribe to other users. Re-tweeting, querying and delivering tweets are the fourth, fifth and sixth functionalities respectively. All of these have been implemented and their mechanism as well as test are described in detail below.

## 1a) Register

To register the main program asks if the user would like to log in or register. When the user types “register” or “Register” they are asked for their username. It is first checked whether the username is already taken or not. If the username is free, they are asked to enter their new password twice. If the passwords match the dynamic supervisor and engine are started and the username and password are saved. The main menu options are then presented to the user: delete account, send tweet, subscribe to user, re-tweet, query, check feed

### Tests for Register

## 1b) Log In

The main program asks if the user would like to log in or register. When the user types “login”, “Login” “log in”, “Log in” , “logIn” or “LogIn” they are asked for their user-name. After both are entered it is checked whether the user-name and password exists together. The reason it does not check if the user-name exists as soon as it is entered is for an added layer of security. Other users should not be able to brute force put in user-names to see which are not yet taken as a security precaution. If both the user name and password match the main menu options are then presented to the user: delete account, send tweet, subscribe to user, re-tweet, query, check feed. If they do not match the user has 3 attempts to log in before they are locked out for an exponential amount of time.

### Tests for Log In

## 1c) Delete Account

If the user selected delete account from menu ask user if they are sure they want to delete the account. If no; show main options again but if yes; ask user for password. If the user passed password check: ask again if they want to delete. If they respond yes; delete account from the supervisor but if no; go back to main menu. If the user fails entering their password after 3 attempts they have to wait 24 hours until they can try to delete again.

### Tests for Delete

## 2) Send Tweet

If the user selected tweet, the menu asks user “What’s on your mind?” It checks that the tweeted input is not empty, > 0 characters and < 280 characters, if not it prompts the user to edit their tweet. Once the tweet fits the character constraints it is sent to the CSA GenServer which calls the Tweet module. The Tweet module calls the Engine GenServer which adds it to the user’s tweets list. The Engine then distributes the tweets to all of the user’s followers.

### Test For Send Tweet

We have five tests for send tweet these are:

1. test if user tweets it is in their tweets list
2. test if tweet is too long it should not pass
3. test if tweet is empty it should not pass
4. test if user tweets it is in their followers feed
5. test if user tweets it is not in a non-followers feed

## 3) Subscribe to user's tweets

### Test For Subscribe

## 4) Re-Tweet

The process for re-tweeting is similar to Tweet. First the menu Retweet module is called. This module shows the user’s feed so they can select which tweet to retweet. The user selects the tweet by index and is asked if they would like to add anything. Unlike tweet they do not have to provide an input and can retweet the original just tweet. Similar to tweet the input is checked to make sure it is < 280 characters. If so the new re-tweet becomes just like an original tweet and uses the same processes. It is sent to the CSA GenServer which calls the Tweet module. The Tweet module calls the Engine GenServer which adds it to the user’s tweets list. The Engine then distributes the tweets to all of the user’s followers.

### Test For Re-Tweet

We have five tests for send re-tweet these are:

1. test if user re-tweets it is in their tweets list
2. test if re-tweet is too long it should not pass
3. test if re-tweet is empty it should pass
4. test if user re-tweets it is in their followers feed
5. test if user re-tweets it is not in a non-followers feed

## 5) Querying

### Test For Query

We have four tests for query

1. test if query for normal word: puppies
2. test if query is empty it should not pass
3. test if query for hashtag
4. test if query for person

## 6) If the user is connected, deliver the above types of tweets live

### Test For Deliver

We have one test for deliver:

1. test "show testUser's feed" do

How to run the tests

To run the test simply use “mix test –seed 0.” The tests must be ran in a specific order so that decencies can be established such as a re-tweet test is not ran before any users are subscribed.

Performance analysis