

# **COP5615 – FALL 2019**

## **PROJECT 4.1: TWITTER ENGINE REPORT**

### **Group Members**

- Maharshi Rawal      UFID: 9990-8457
- Mohit Garg          UFID: 9013-4089

### **Instructions to run the project**

To run the project: mix run proj4.exs 10 2

To run the test cases: mix test

### **What is Working**

The following functionalities are working:

- Register account and delete account
- Send Tweets (including hashtags and mentions)
- Subscribe to user's tweets
- Re-tweet (User would get an option to re-tweet, to be implemented in front-end)
- Allow querying tweets subscribed to, tweets with hashtags and mentions
- Live tweets delivery

### **Implementation details:**

We have implemented the following functionalities and build a twitter like engine. In twitter engine a user can send the tweets, register his account, delete his account, login, logout and many other functionalities. We used ETS data storage for storing the data provided by the user. All the functionalities are explained below:

1. **Register account:** User first have to register his account before using the services. He has to enter the username and password for the registration. If he tried to send the tweets or try to login without registration, then an error message will handle these events.
2. **Delete Account:** User can delete their account after passing the authentication of username and password. If the authentication is correct, then the user is completely removed from the ETS data storage.
3. **Send Tweets:** User can send tweets when he is Online. If he uses any **hashtag** in his tweet, then that tweets will add in the hashtag ETS storage and whoever follows that hashtag will receive that post. User can also **mention** the other users and the tweet will go to them too.
4. **Subscribe to user:** any user can subscribe to any other user. After subscribing, the subscriber will receive the tweets of the following user. They may also unsubscribe.
5. **Re-tweets:** If there are any interesting tweets in which a user mention another user then that tweet will be posted on the wall of both of the users. All the followers of both the users will see that re-tweet.
6. **Subscribe to hashtag:** User can subscribe to any hashtag and get the post related to that hashtag whenever someone post a tweet. They may also unsubscribe. User can also **mention** the other users and the tweet will go to them too.
7. If two user are connected then all the tweets will be posted live on the wall of followers who are online at that time.

### **Testcases Implemented:**

#### **1) Tests to check the Registration of the user**

- i) User Register successfully
- ii) Duplicate users are not allowed

#### **2) Tests for Login**

- i) If no user exists by such username
- ii) if user entered wrong Password

- iii) When user correctly login
- iv) When user is already logged in

### **3) Tests for Logout**

- I) If no user exists by such username
- ii) if user is not logged in
- iii) when user successfully log out

### **4) Tests for Deleting User Account**

- I) If user exist then delete
- ii) error if user doesn't exist

### **5) Tests for Subscribing a tweeter account**

- I) Correctly subscribe to another tweeter account.
- ii) When other user not registered/ wrong username

### **6) Test for Unsubscribing a tweeter account**

- I) Correctly unsubscribe from another tweeter account.
- ii) when other user not registered/ wrong username.
- iii) when user is not subscribed

### **7) Test to Send Tweet**

- I) Error while sending tweet because the user is not logged in.
- ii) when username is not registered.
- iii) When correctly send tweet

### **8) Test for Hashtags and mentions**

- I) Entry into hashtag table when a tweet consists of a hashtag
- ii) In user mentions, an entry is done in mentioned user's table
- iii) Retweet functionality, returns a list of tweets (prompts user to retweet in frontend)

## **Performance Metrics:**

Number of Users	Number of Tweets	Time taken (In milliseconds)
10	10	7
100	10	63
500	10	733
1000	10	2517
2000	10	10587
3000	10	25638
4000	10	49265
5000	10	74932