

## Project 4.2 Fall 2019

### COP 5615 Distributed Operating System

Submitted by:

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Link to demo video:

<https://youtu.be/yYx9fQfTnaA>

Running the project:

- Extract the folder raghavan\_karlekar.zip

Running Simulator:

- Go to assets > js > app.js and uncomment the line import socket from “./socket” if not already uncommented, and comment the line import socket from “./second\_socket”
- The simulator is set to run on 100 websockets by default. Change the value num\_of\_clients to change the number of websockets.
- Go the terminal, making sure you’re in the right directory run the command mix phx.server.
- Open a browser and run localhost:4000 to start the simulator.

Running Individual client:

- Go to assets > js > app.js and uncomment the line import socket from “./second\_socket” if not already uncommented, and comment the line import socket from “./socket”
- From the terminal, run the command phx.server. Once the server starts follow the next step.
- Multiple clients can be open by opening multiple localhosts.
- The client webpage provides functionalities like Login, Tweet, Subscribe, Search hashtags, and search mentions. The feed for the user is dynamically generated.
- To login, type the account name in the login box and press register button.
- To tweet, enter the string in the tweet field and press the tweet button.
- To subscribe to user, enter the user name in the subscribe text field and click subscribe button.
- To query a hashtag, enter the hashtag string in the hashtag input field and enter the query hashtag button.

- To find your mentions, enter your user name in the mentions input text field and enter the query mentions button.

In project 4.2 we build upon the functionalities created in part 1. In this project, we provided the same functionalities using the phoenix server. The phoenix server is used as an interface between the Web Server and clients.

The project works in two modes:

- In simulation mode, we create 100 websockets connections to the server to simulate the twitter website functionalities like tweeting, subscribing, and multiple type of searches.
- In client mode, we connect to the localhost, and create sockets to connect with the server.

Simulator Mode:

In simulator mode, we simulate the working of twitter environment. Just like in our previous projects, we create 100 clients each with its own websocket to communicate with the server. Each websocket is used to emulate a single user in the twitter ecosystem. The users are registered and assigned subscriber randomly. Each user in the system perform operations like tweeting, querying hashtags, subscribing to other users, and searching for mentions selecting each action randomly.

Client Mode:

We run the client mode on localhost:4000 in our browser. We create a single-socket connection between the server and the client. Multiple clients can be invoked by running localhost:4000 on multiple tabs though there operate on same channel. The user first enters his username for login purpose. Once logged-in, the user can perform activities like tweeting, subscribing to other users, searching hashtags, and searching for his mentions. The dynamically generated feed shows the user tweets from users he has subscribed to. The pictures from the next page describes the features and functionalities of our application.

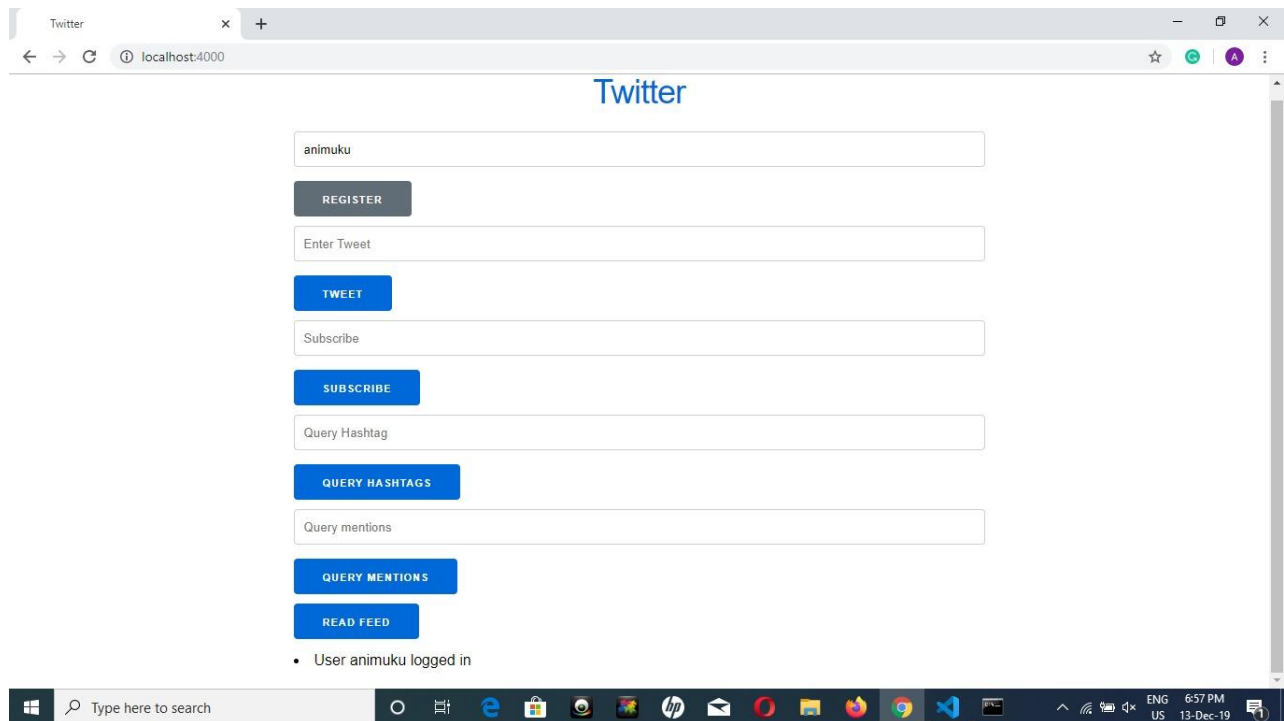


Figure 1. The figure shows the form along with the fields. User name animuku is logged-in and the message “User animuku logged in ” is displayed.

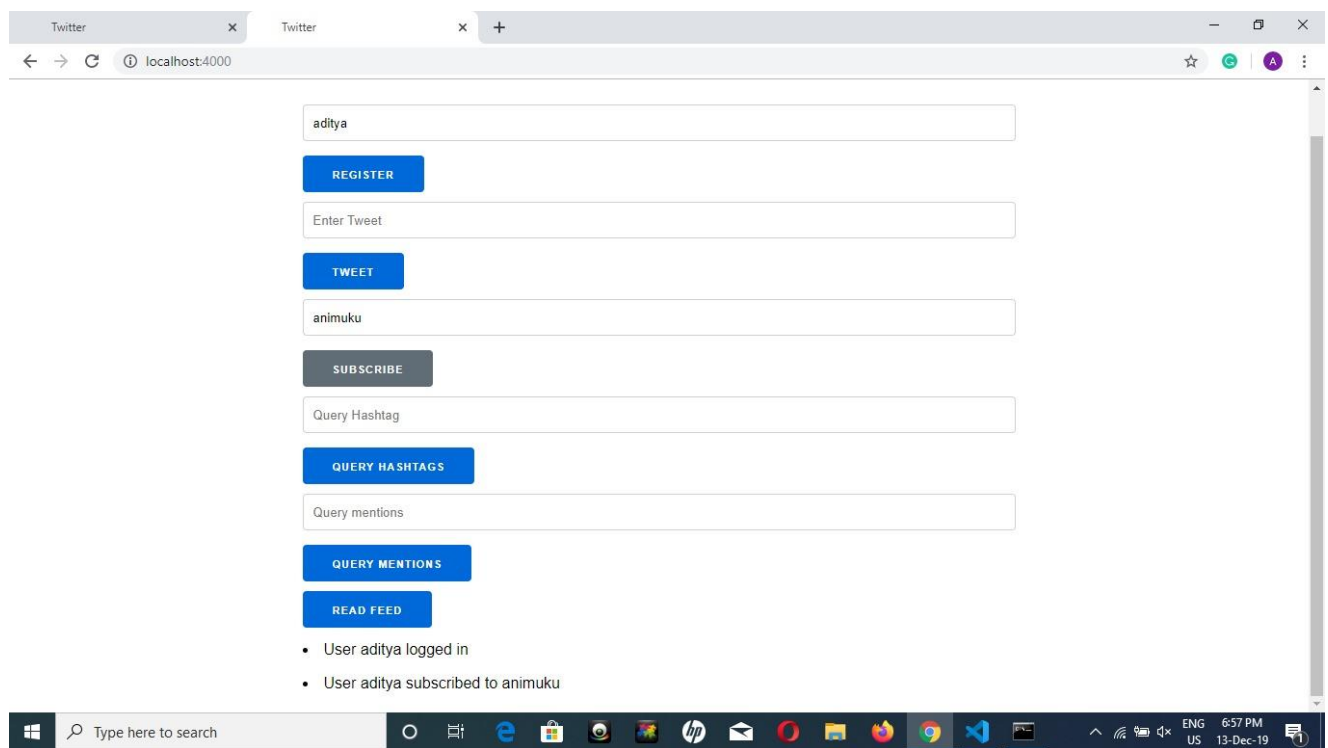


Figure 2. Different user named “aditya” logged in and is subscribed to user animuku. The status of user login and subscription is displayed at the bottom

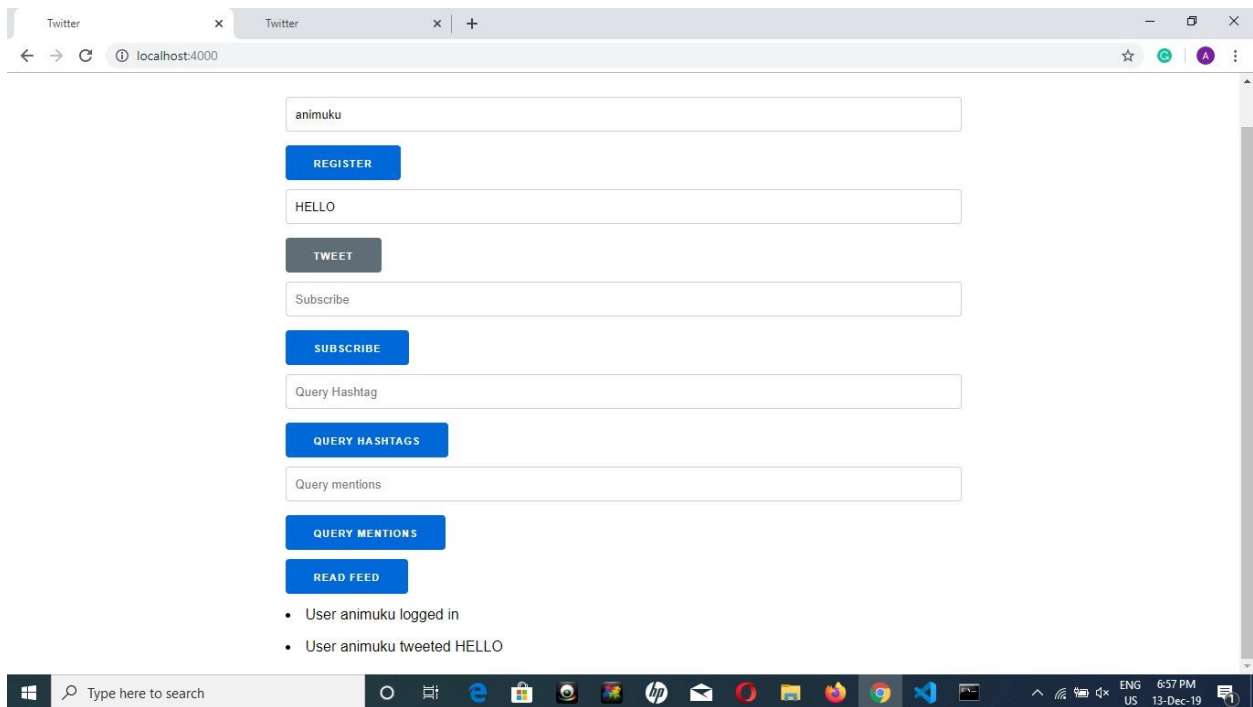


Figure 3. User “animuku” tweeted. The tweet value is displayed at the bottom.

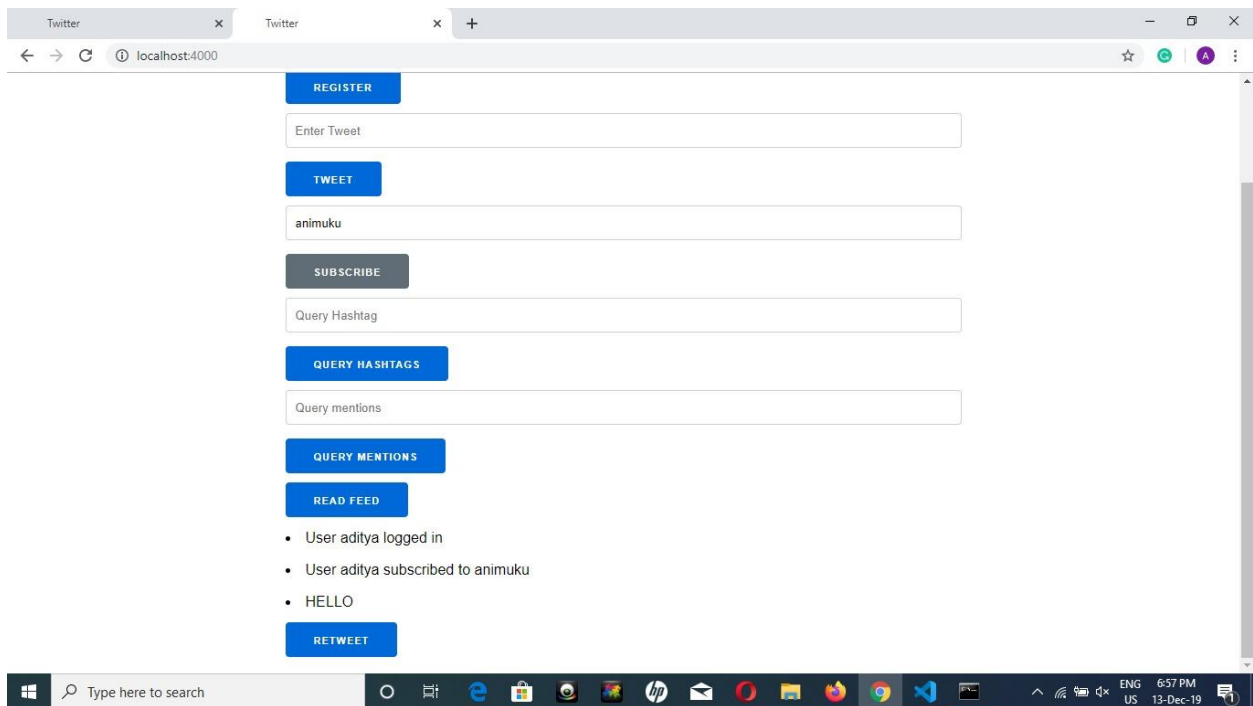


Figure 4. The tweet by user “animuku” is displayed on the feed of its subscriber “aditya” with option to retweet.

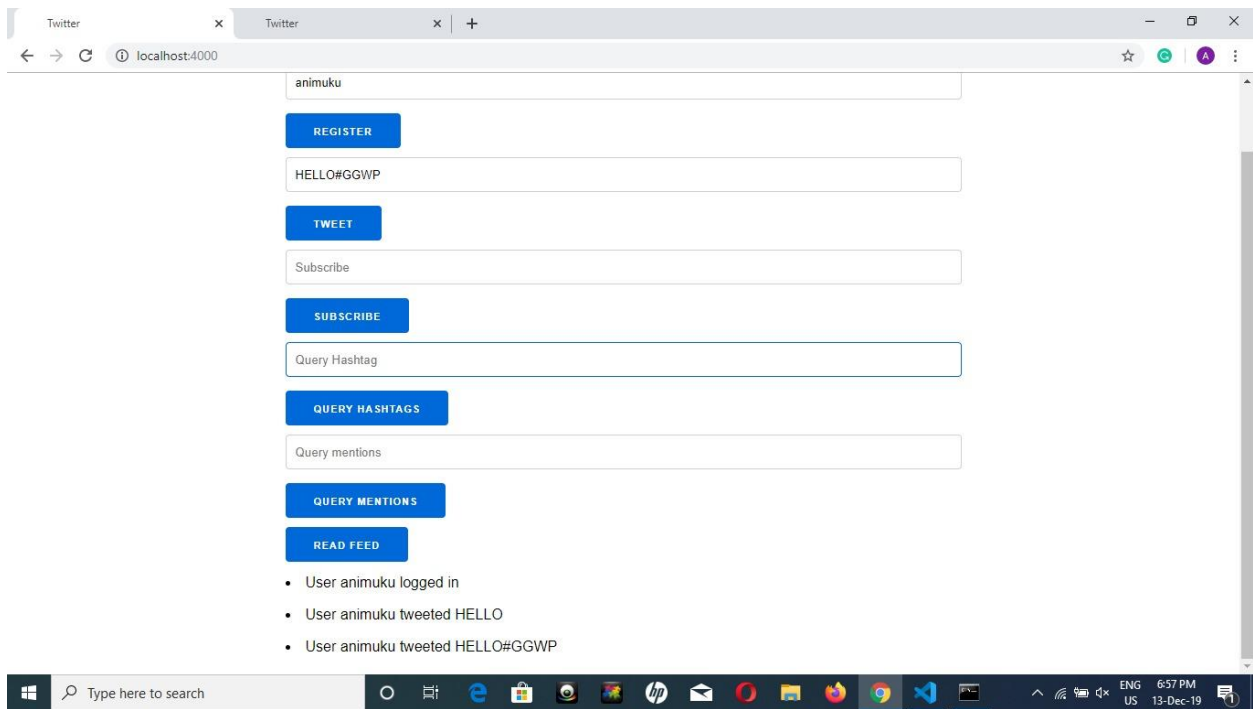


Figure 5. User “animuku” tweets with a hashtag

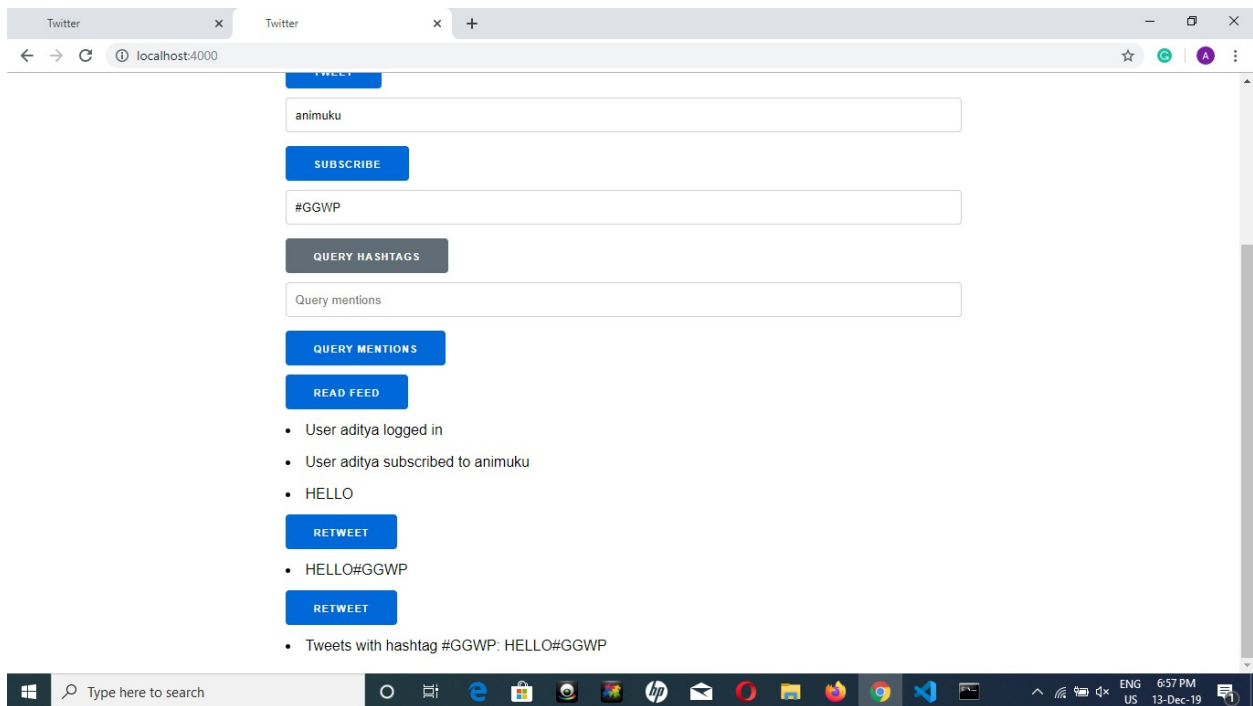


Figure 6. animuku tweet is present on aditya’s feed with the option to retweet.