Fall 2020
COP5615 Distributed Operating System Principles

Readme file
Project 4 Part 2

Group Details

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In this project, we have implemented a Twitter clone based on a client-server architecture. It uses a JSON based API to perform client-server communication.

On the client-side, we have implemented a command line interface using F# which provides a list of options based on the different functionalities of Twitter. The user needs to make one choice from this list of functionalities. After this, based on the choice made, the user needs to provide the required input.

This entered input is passed into a method on the client side which converts the user input into JSON body and an HTTP request is made to hit the API endpoint on the server side. Once the GET/ POST request hits the requested API endpoint, the corresponding server side method is called. This method takes the JSON values passed from the client side and performs the respective computations. Lastly, a response is sent back to the client to indicate the status of his action.

The following twitter-like functionalities can be implemented for the developed system :
1. A user X needs to enter **option 1** to register in the system with a unique username. If the username entered already exists, then user X is accordingly notified.
2. After registration, if user X needs to login, then it needs to enter **option 2** and provide its registered username to access other functionalities.
3. User X can also log out of the system by selecting **option 3** from the choice menu. A list of total registered, online and offline users is maintained on the server-side.
4. If user X is logged-in and wants to post one or more tweets, then **option 4** should be selected and user X must enter its username and what they want to tweet about. Once the tweet is processed and stored on the server-side, user X gets informed that its tweet has been posted.
5. To follow other registered users, user X must select **option 5** and enter its username and the username who it wants to follow, who must be also registered in the system.
6. To get subscribed tweets, User X must follow one or more users. When user X selects **option 6** to get subscribed tweets, a list of tweets and retweets posted by people user X is following. User X can also retweet any tweets from the list of the received subscribed tweets and pass it onto its followers. The total number of tweets and retweets are updated on the server-side as per the user actions.
7. If user X wants to find tweets with a specific hashtag or mention, then **option 7** should be selected. The system asks to enter the hashtag or mention and based on the input a list of tweets is presented. User X can also get tweets containing both a hashtag and a mention tag.
8. A user X can also get all the live tweets posted by other users on the system by selecting **option 8**.
9. To terminate the program, user X can select **option 9**

How to Run

Step 1: Go in src directory `cd src` and enter command `dotnet run` to start the server
Step 2: Go in src directory `cd src` and enter command `dotnet fsi --langversion:preview client.fsx`

Video Link : https://tinyurl.com/ycdvjzha