



Twitter Clone

Prepared by:

- Mostafa Abdullhuq (Team Leader)
- Mohammed Mahmoud El-Sayed
 - Sara Fathi El-Sayed
- Hagar Ahmed Abd El-Aziz
- Zienab Khaled Hassan

Supervised by:

Eng/Noha Salah

Full stack using PHP

5-3-2023

I. Introduction

Twitter-inspired social media platform designed for users to connect and share their thoughts with the world. Users can create profiles, follow other users, and post tweets, photos, and videos for their followers to see. Just like Twitter. The project also includes features like hashtags, mentions and trending topics making it easy for users to discover new content and connect with others in real-time.

II. Requirements

Now we can divide the features the project provides to the following sub categories

- i. Users: where user can create his/her profile, insert and update data about him/her (Bio, Profile image, ...), follow other users, deactivate his/her account, change his/her password and share tweets.
- ii. Tweets: where any user can create his/hers tweet, including images or videos, retweet this tweet, like a tweet and bookmark a tweet also tweets become trending if users retweeted it multiple times.
- iii. Hashtags: Hashtags are what really distinguish twitter, users can share their thoughts with common hashtag and then the hashtag becomes trending.
- iv. Replies: One tweet can have multiple replies to it, users can like replies.
- v. Notification: the interaction between users, a user can follow, unfollow, like or dislike each other tweets.
- vi. Settings: the settings page where user can view his/her profile details, change the password and delete his/her account.
- vii. Bookmarks: The user can save a tweet and it stored in the bookmark page.
- viii. Mentions: users can mention each other.

III. Objectives/List of services

Objectives

- i. Create a social media platform where users can post tweets, follow other users, like and retweet tweets, and reply to tweets
- ii. Provide users with the ability to customize their profiles with profile pictures, banners, and biographies
- iii. Allow users to search for tweets and other users
- iv. Implement real-time notifications for likes, retweets, and replies
- v. Provide users with a timeline that displays tweets from the users they follow

- vi. Implement a messaging system that allows users to send direct messages to other users
- vii. Develop an administration system that allows administrators to manage user accounts, monitor content, and moderate disputes

Services

- i. User authentication and authorization
- ii. Tweet creation, reading, updating, and deletion
- iii. Follow and unfollow functionality
- iv. Like and unlike functionality
- v. Retweet and undo retweet functionality
- vi. Reply and delete reply functionality
- vii. User profile customization
- viii. Search functionality for tweets and users
- ix. Real-time notifications
- x. Timeline generation and display

In summing up, what a user can do?

User can

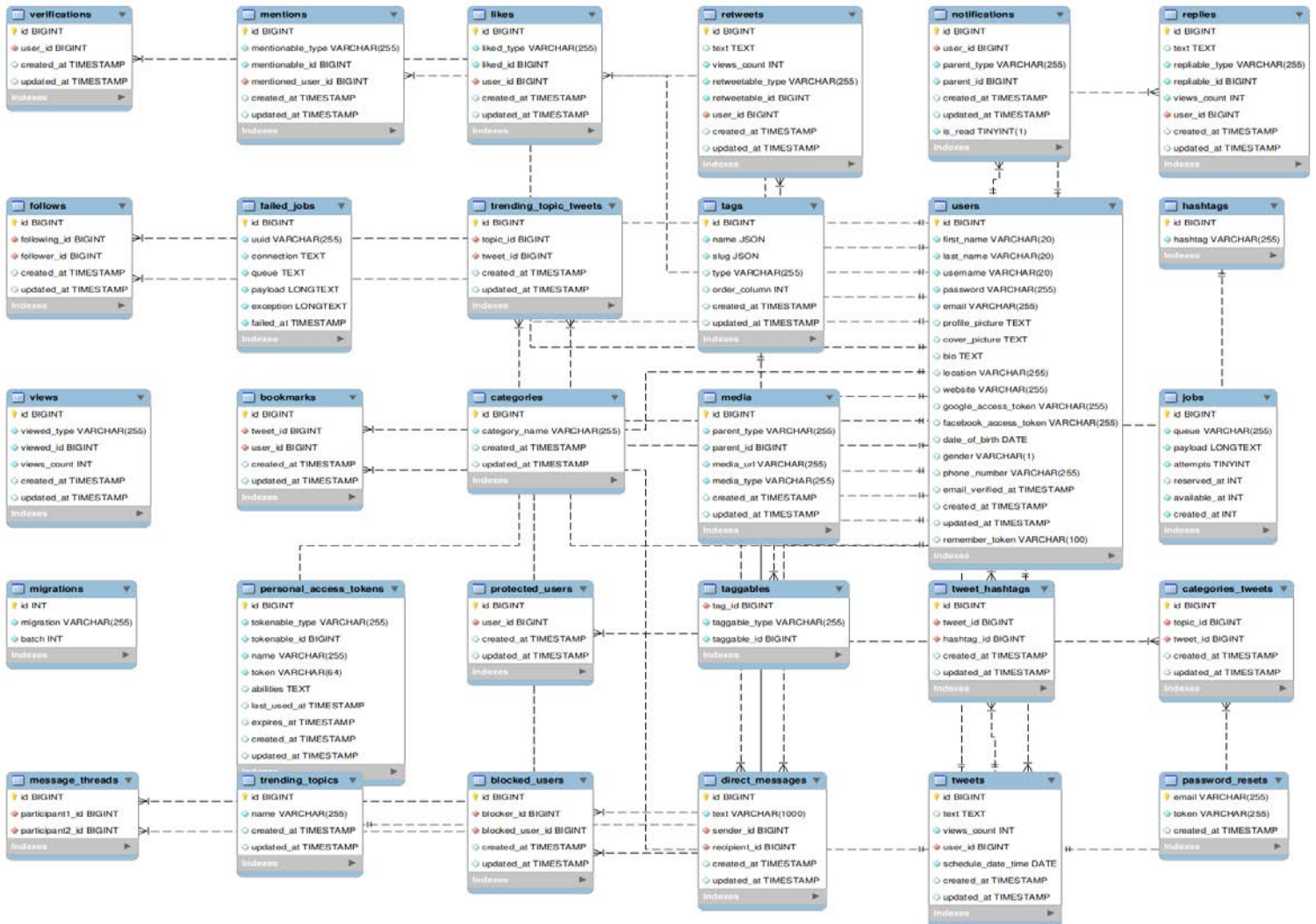
- Create an account or deactivate it.
- Reset his account password or totally change it.
- Update his/her account.
- Share tweets with other users.
- Retweet a tweet.
- Reply to a tweet.
- Like or bookmark a tweet and vice versa.
- Search for a tweet, user or hashtags.
- Follow others or block them.

IV. Technologies and Tools

- Laravel 9.
- Angular 15.
- Tailwind CSS.
- MySQL
- JWT Package.
- Laravel-tags (spatie).

V. Design Overview

ERD Diagram:



The database consists of these tables:

1. Users
2. Tweets
3. Retweets
4. Bookmarks
5. Follows
6. Hashtags
8. Blocked users
9. Likes
10. Media
11. Mentions
12. Notifications
13. Replies
14. Trending Topics
15. Password resets
16. Taggables
17. Messages
18. Personal access tokens

There are more tables for our future work improvements.

VI. Implementation (Development phase)

The target was to create a Twitter clone project that has all the features real Twitter provides with the same design, with a functional frontend and backend that work seamlessly together, providing users with a user-friendly and reliable Twitter-like experience.

Started by working on the frontend section. Used native HTML and Tailwind CSS to create the frontend design and layout of the application. Then converted the frontend to an Angular project for better management and scalability.

Moving on to the backend, used Laravel 9 to develop the Twitter clone's server-side functionalities. The first step was to implement the user and authentication section, which involved creating a user model, sign up, login, and logout functionality. To secure the application, we used JWT (JSON Web Tokens) packages to connect the frontend with the backend.

To test the backend endpoints and verify that the authentication and authorization functionalities work as expected, we used Postman. Performed various tests to ensure the application's reliability, functionality, and performance.

Now, the frontend fetches from backend which acts as an API that communicate with each other. The frontend, provides the user interface for the application, while the backend, built using Laravel, handles the server-side functionality.

When a user performs an action on the frontend, such as creating a new account or posting a tweet, the frontend sends an HTTP request to the appropriate endpoint on the backend API. The backend then processes the request and returns the appropriate response, which the frontend then uses to update the UI and provide feedback to the user.

When a user logs in to the application, the backend generates a JWT token and sends it to the frontend. The frontend then includes this token in all subsequent HTTP requests to the backend, which allows the backend to verify that the request is coming from an authenticated and authorized user.

Implemented various other features such as posting tweets, retweeting tweets, following and unfollowing users, liking and commenting on tweets, and searching for tweets based on different criteria. We made sure to follow the best practices and coding standards throughout the development process, ensuring that the code is scalable, maintainable, and efficient.

VII. (Recommendation) Future work

- Sign up using Socials (google, facebook, linkedIn).
- Complete all other Twitter features.
- Support real-time chat.
- Creating admin dashboard.
- Include AI models to the project.

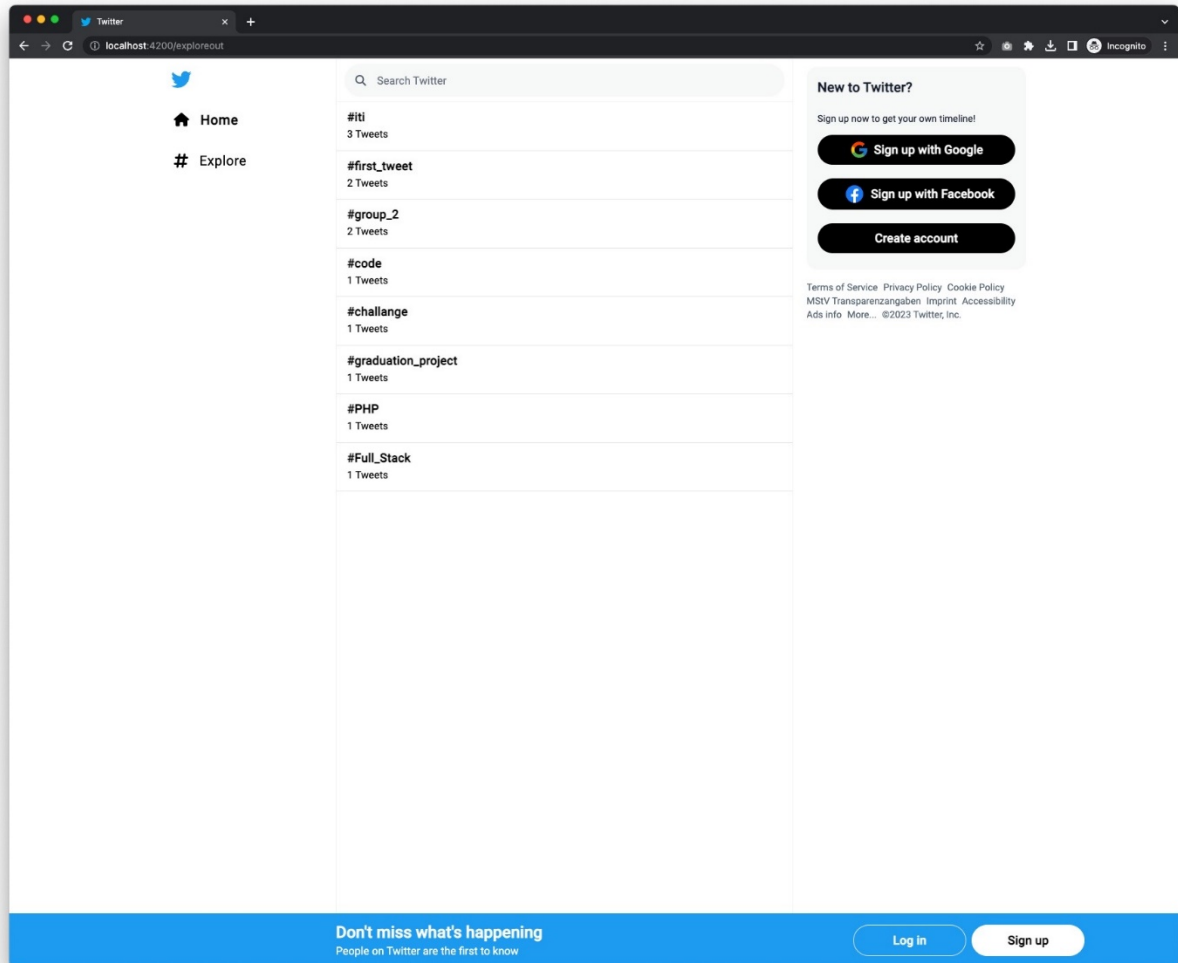
VIII. Testing

- In the server-side APIs were tested manually using postman software, created automate testing for classes and functions using PHPUnit and then seeded the database with fake data to check it is working appropriately.
- In the front-end side, we tested manually the whole website functionality and features.

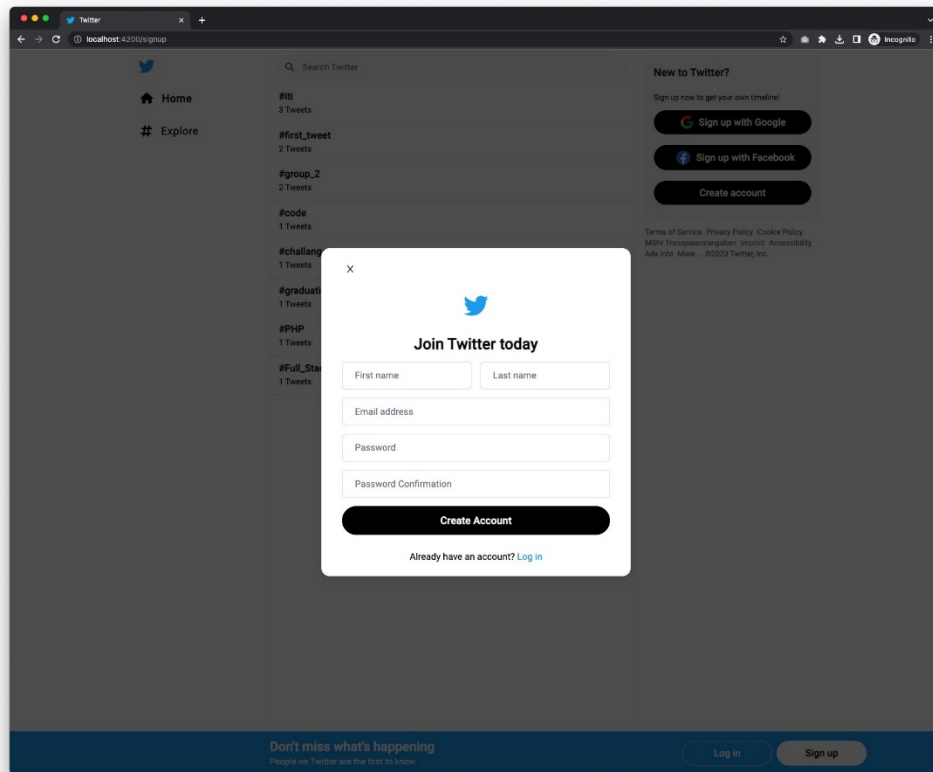
IX. User Guide

In the design styling we used Tailwind CSS framework, which allowed us to design in both dark and light mode depending on the user's browser default.

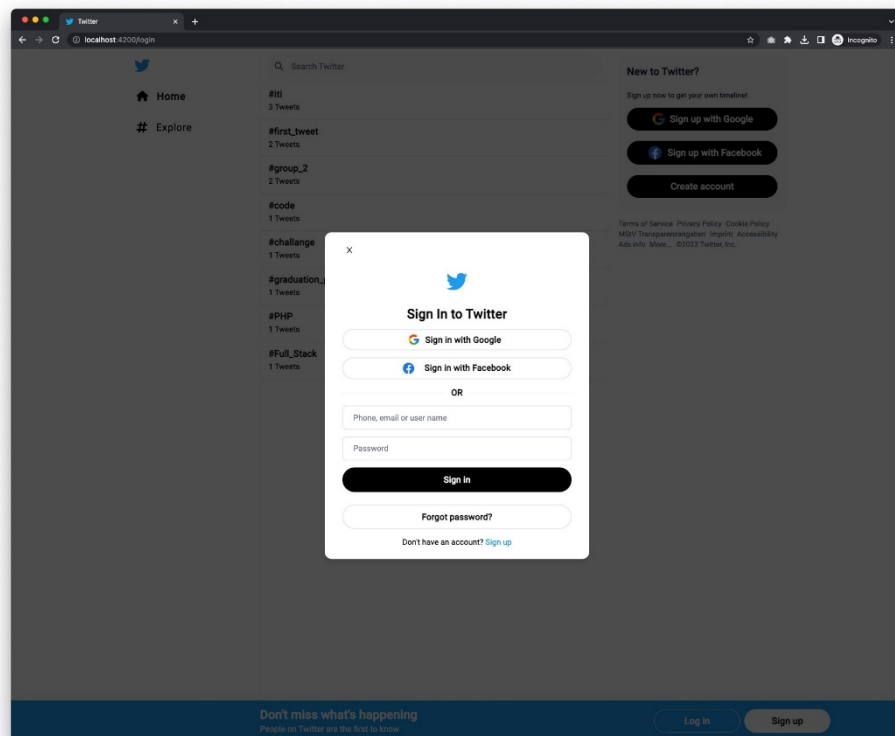
1. When the user enters the website he/she will be directed to the explore page to sign in or sign up.



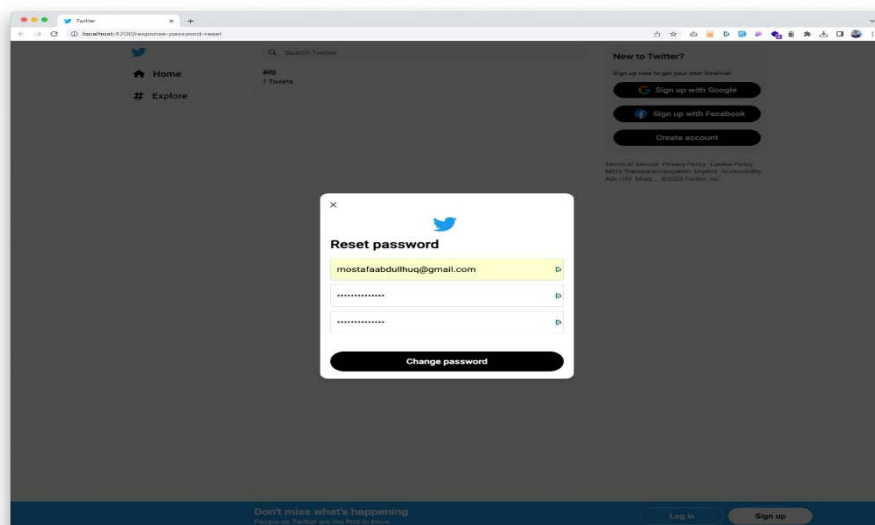
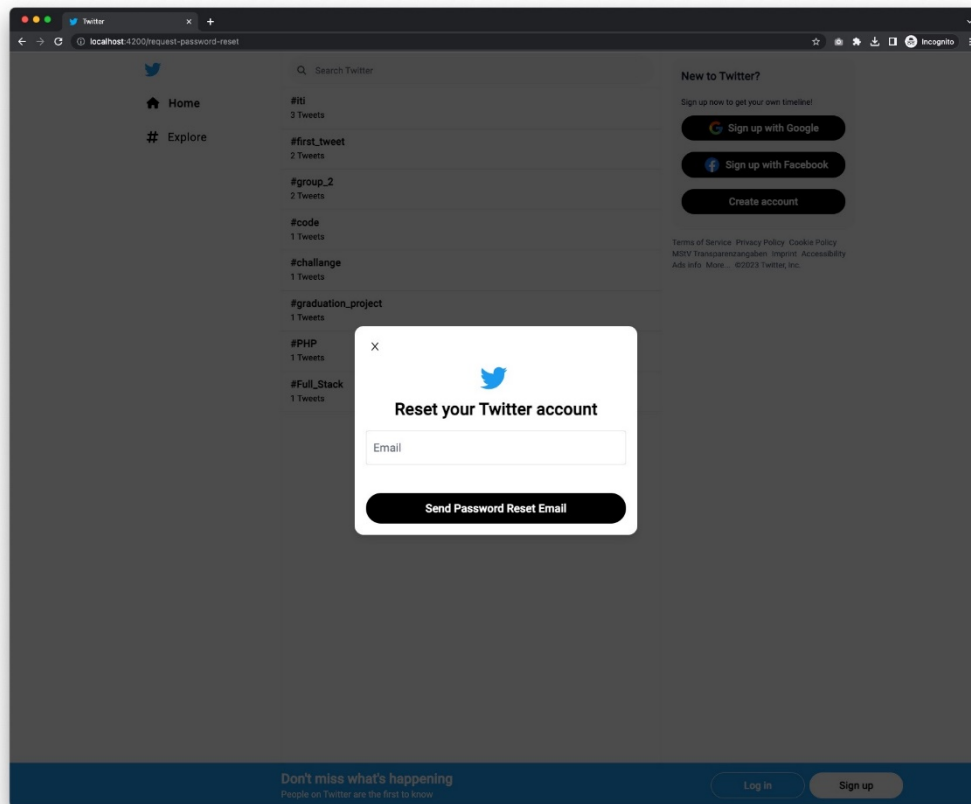
2. If the user has no account he/she will sign up.



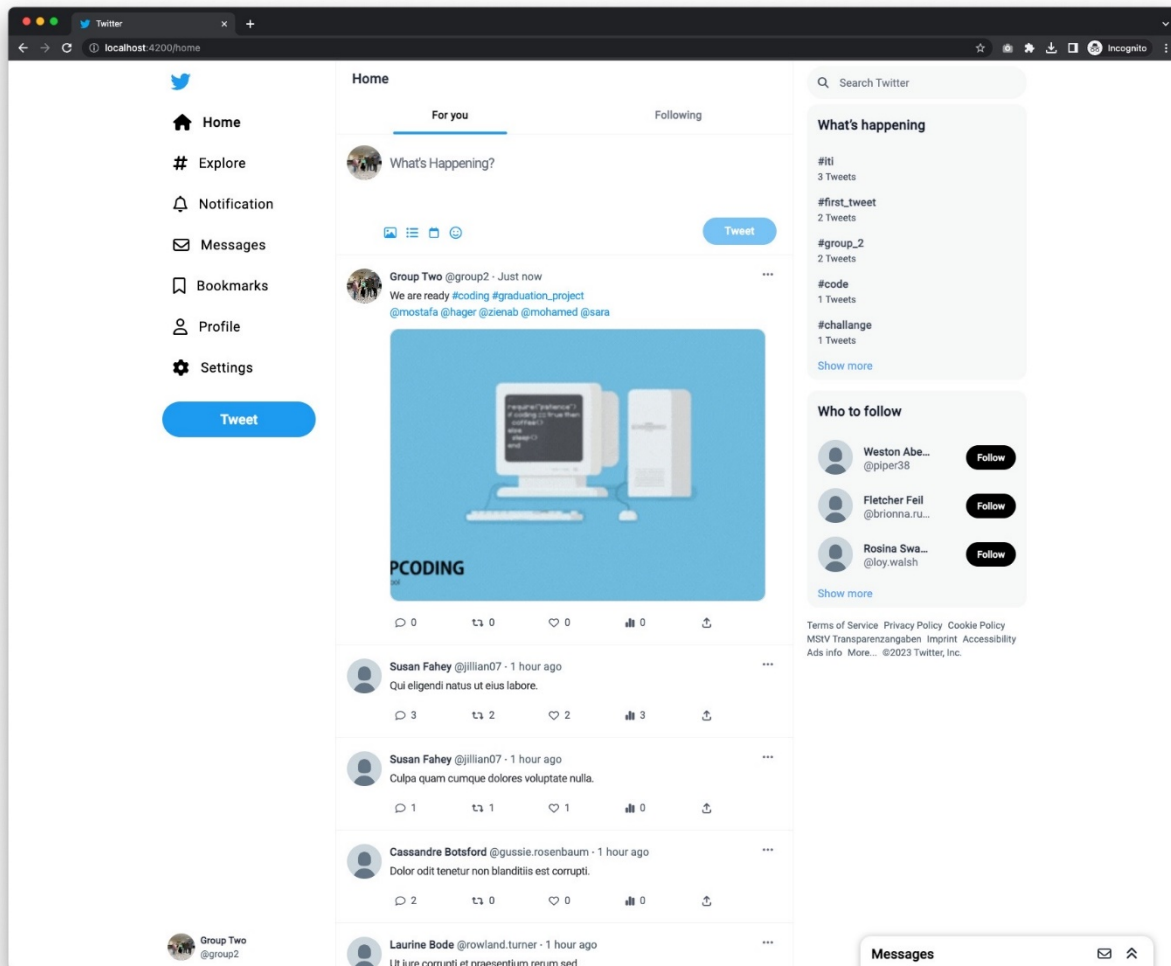
3. If the user already has an account he/she will log in.



4. If the user forgot the password he/she will click on “Forgot password” and enters his/her e-mail and a message on his/her mail to confirm



5. If the user logged in successfully he will be redirected to the home page where he/she can see other users tweets, share a tweet , see the trending topics and search for tweets or users or hashtags, the “what’s hapenning ” where all the trending topics displayed with the retweets count ,the left side of the page is differ from the explore page providing more pages the authorized user can navigate and this left-side navbar is fixed for all the pages.

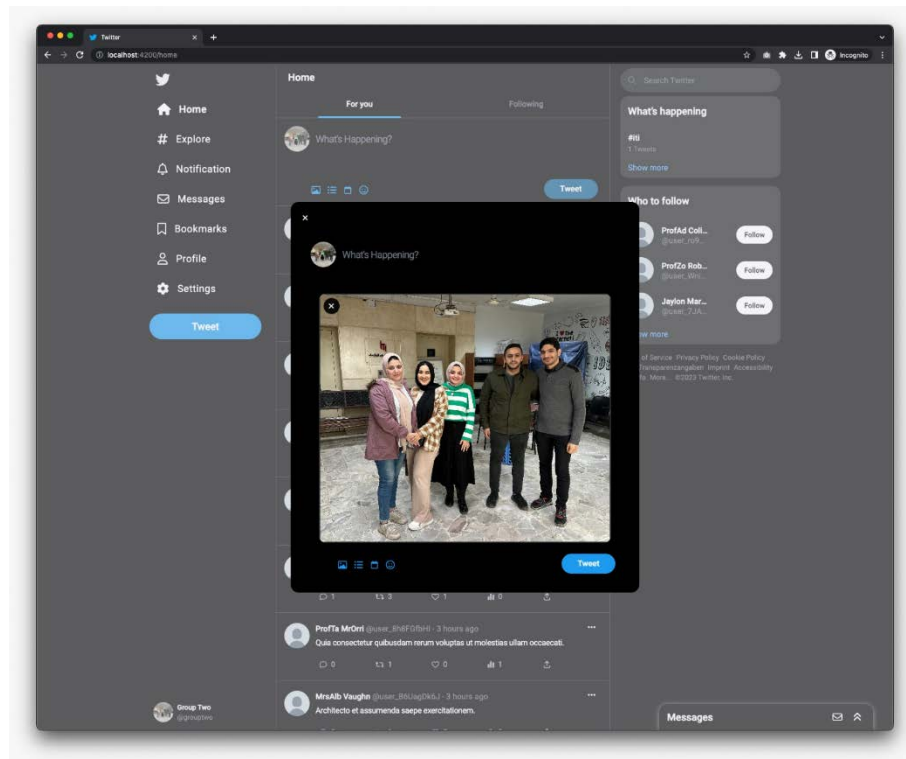


if the user wants, he/she can
logout just clicking here and
will be redirected back to
login

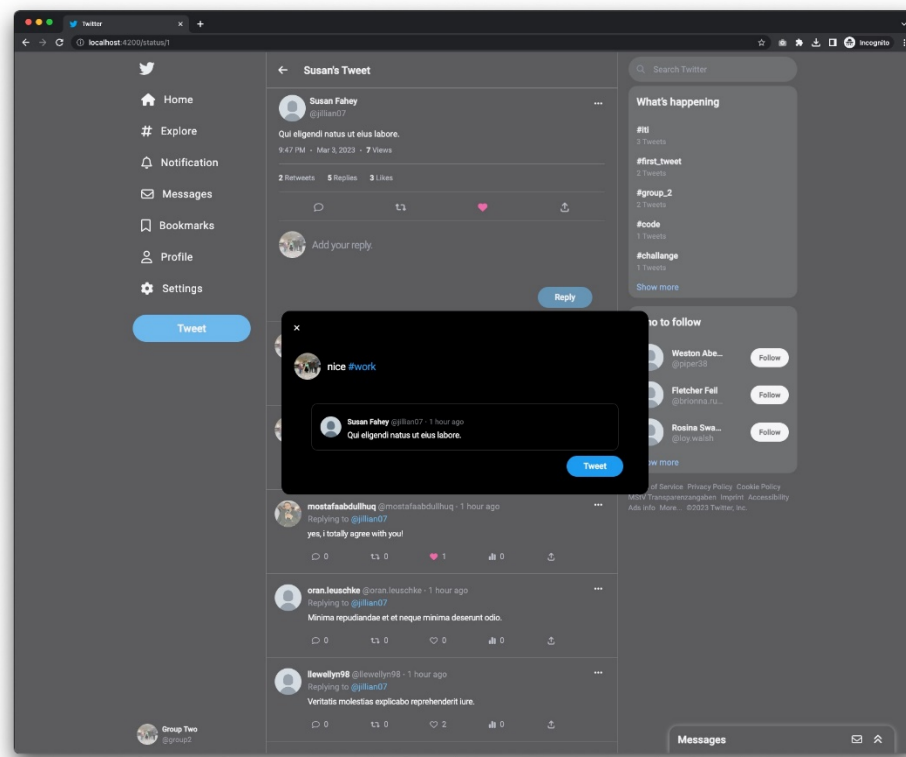
Log out @grouptwo



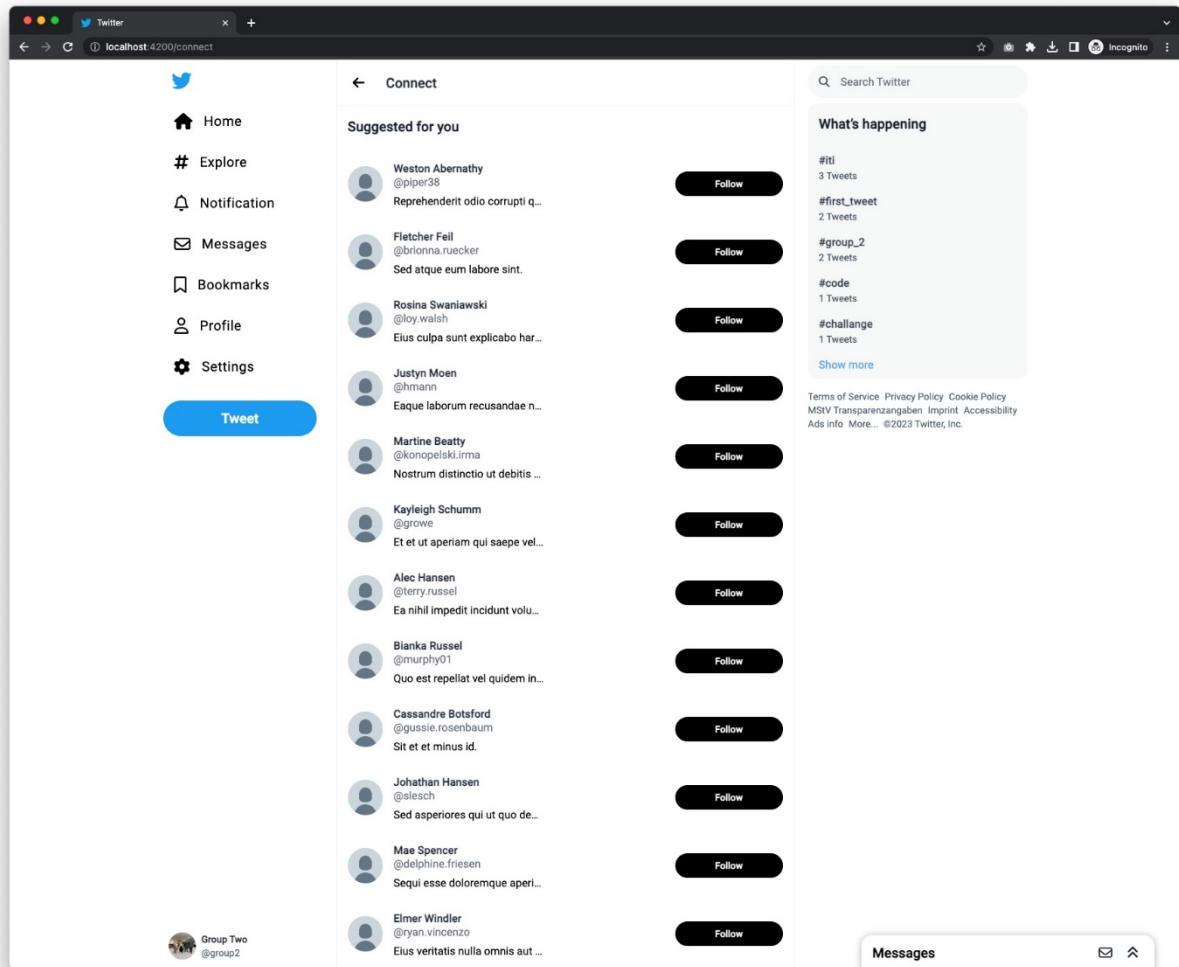
The user shares his/her thoughts with or without media and post it.



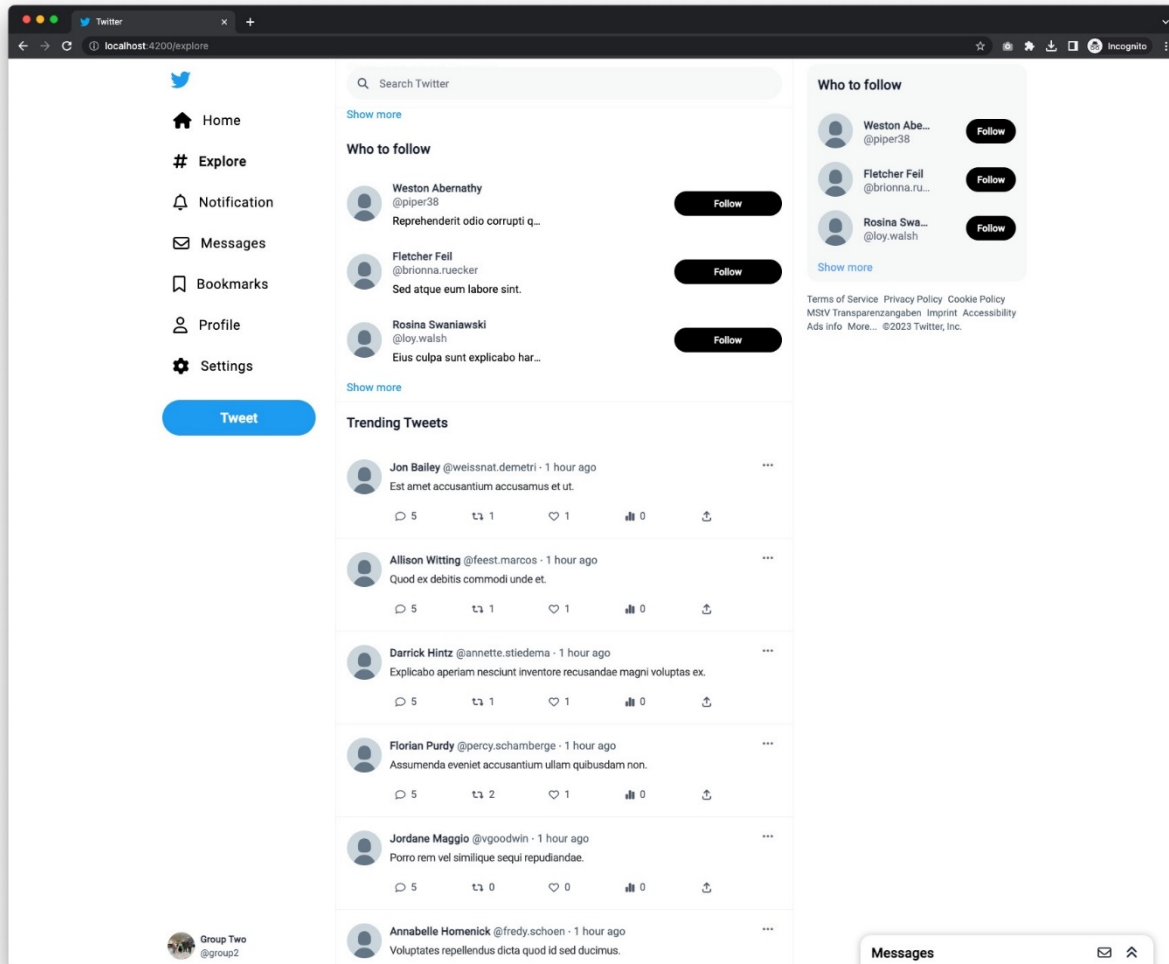
The user can retweet a tweet or quote the tweet and tweet it.



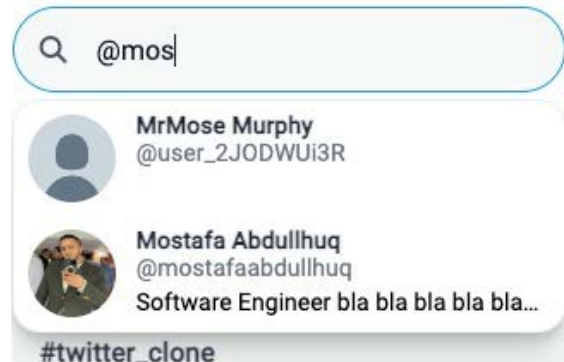
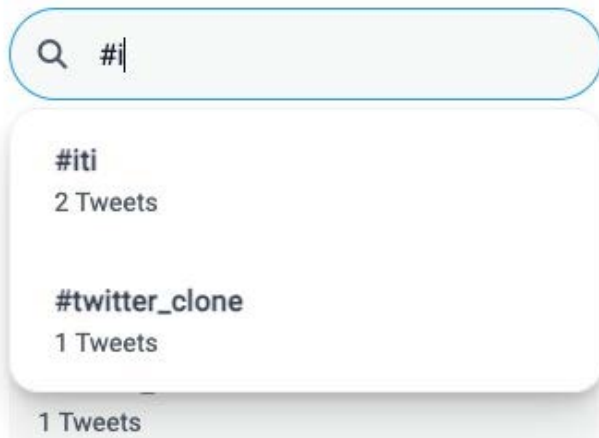
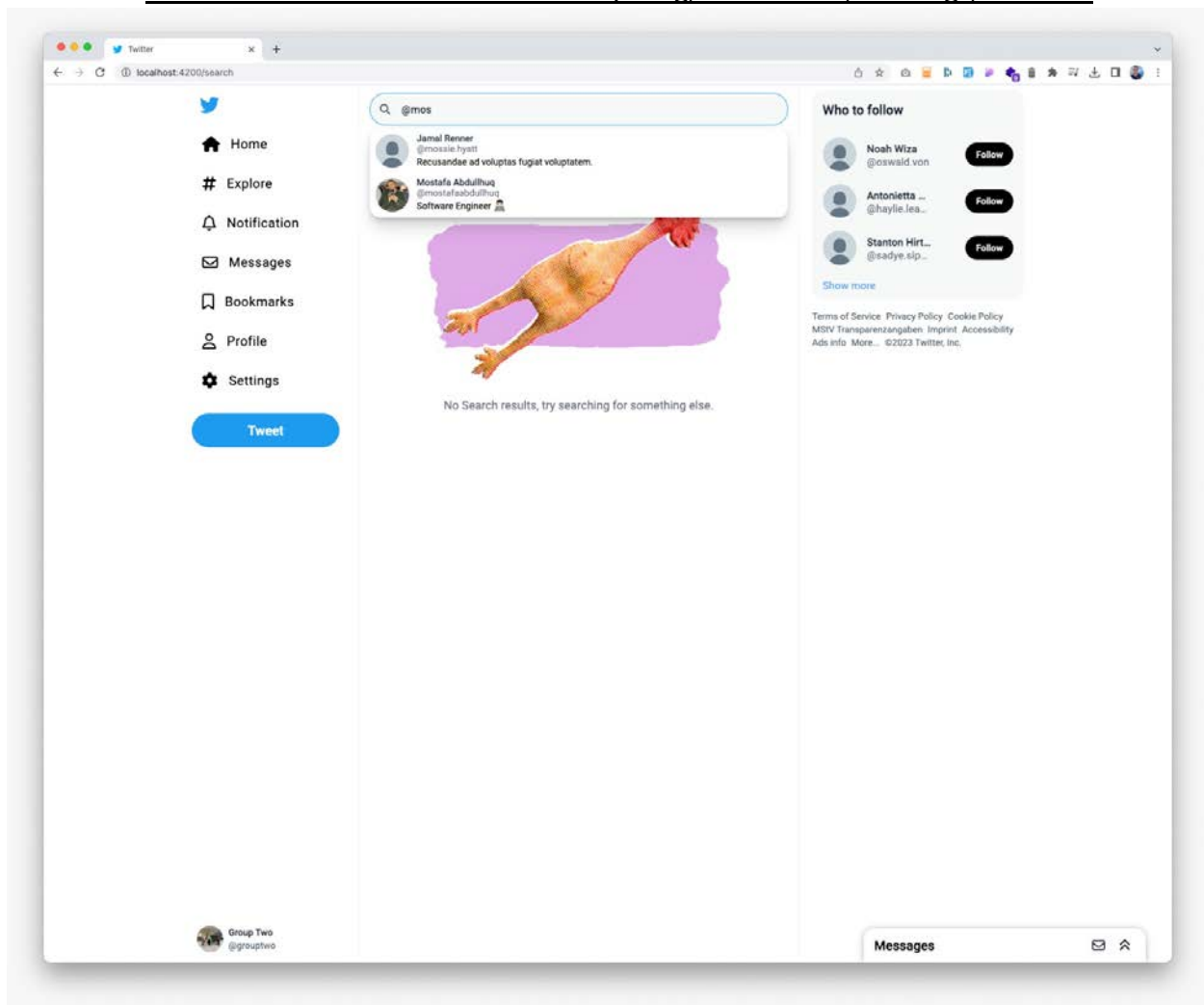
6. The user has a list of suggested people to follow, if he/she clicked on show more in the “who to follow” section he/she will be redirected to the “connect” page.



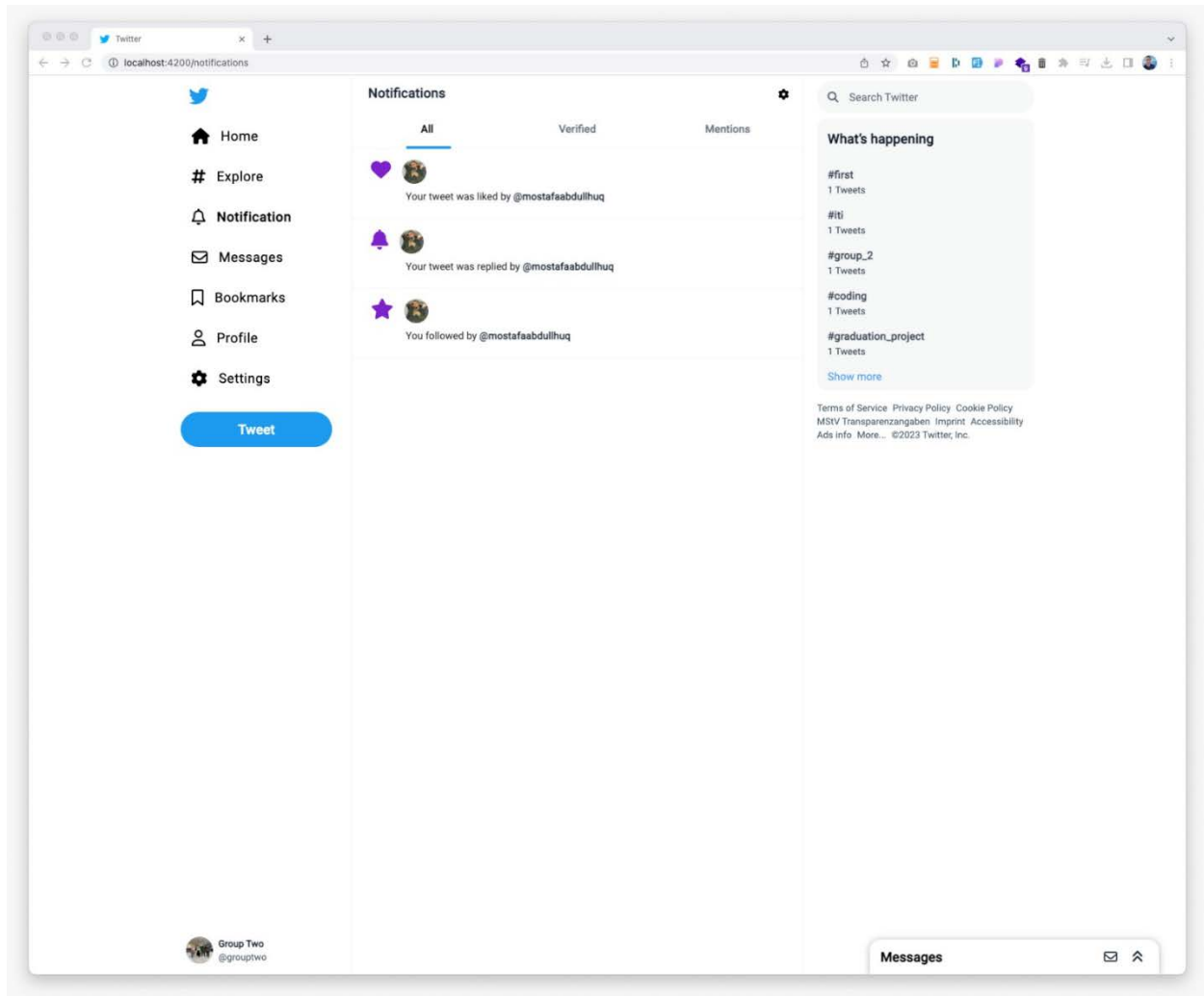
7. In the left-side navbar if the user clicked on “Explore” he/she will be redirected to the explore page where all the trending hashtags, tweets displayed.



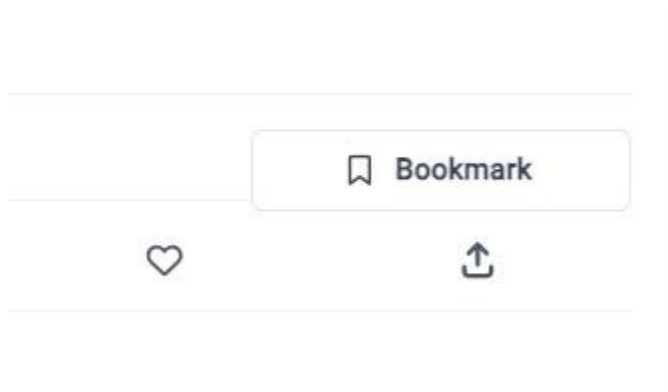
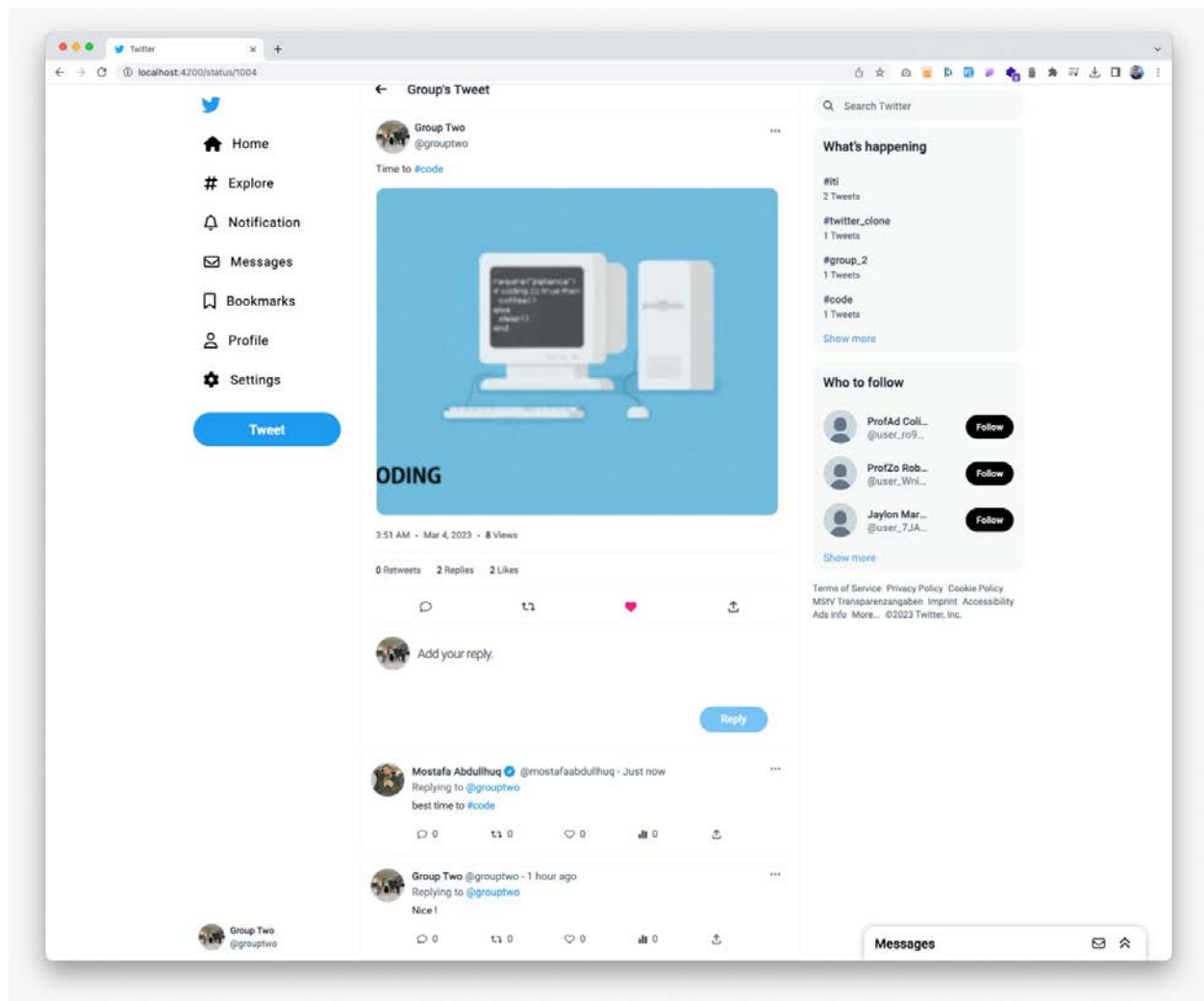
8. In the search section user can find anything, other users, hashtags, tweets...



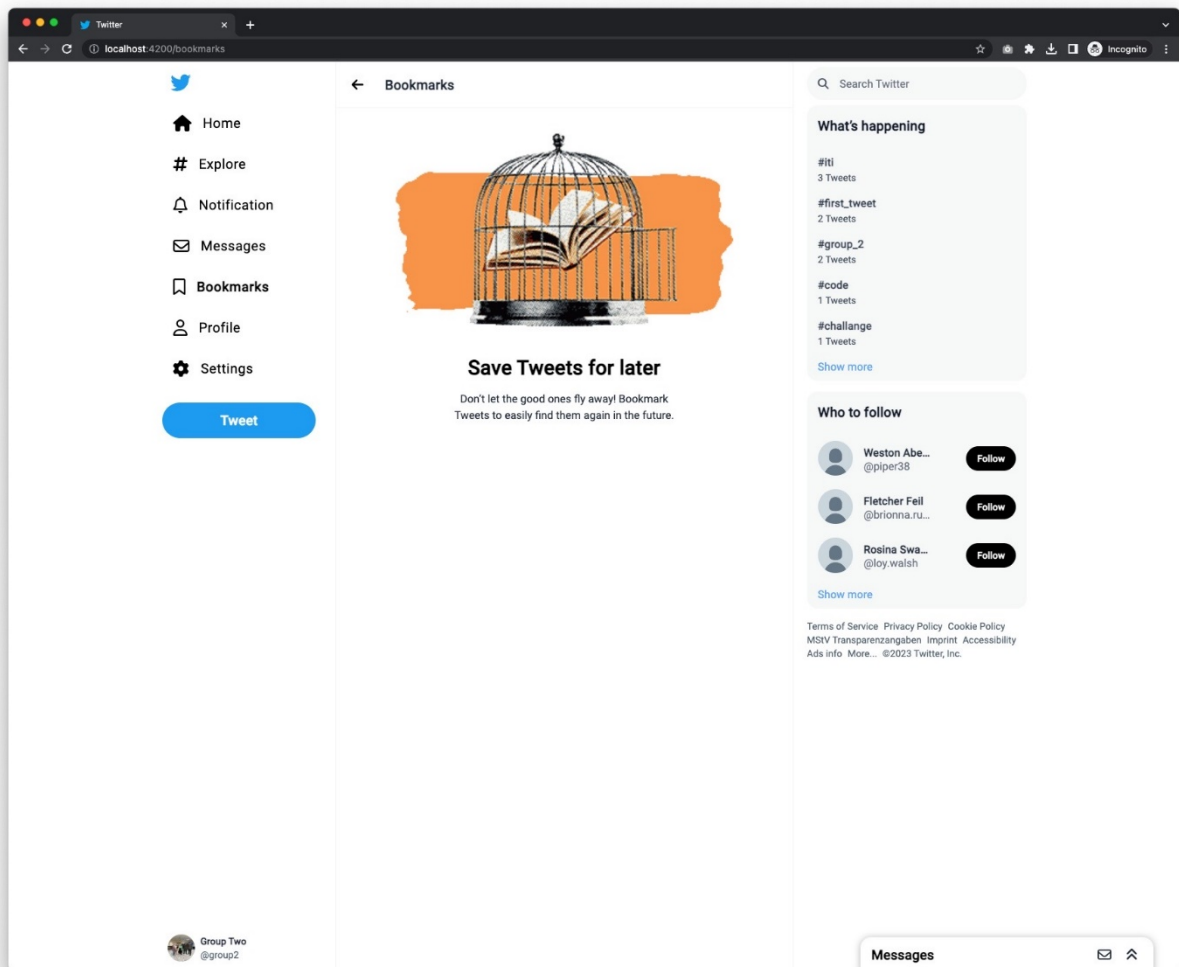
9. If the user clicked on the notification page he/she will be redirected to notification page where he/she can see all the notification such as user X (liked, retweeted, replied, followed) you.



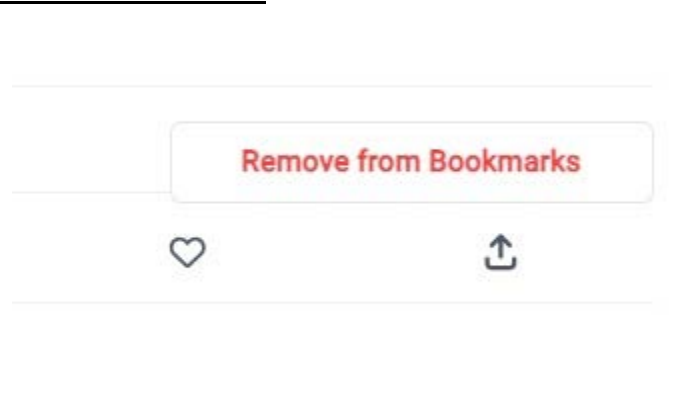
10. If the user clicked on a certain tweet he/she will be redirected to a page where this tweet only displayed with its replies and likes, replies views count
Here, a user can click to bookmark a tweet and add it to the bookmark page



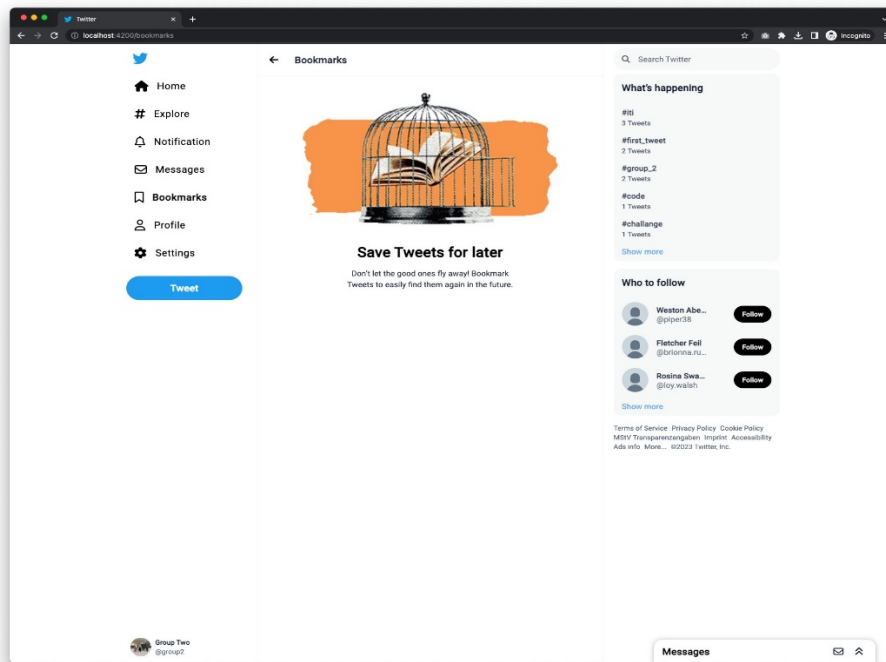
11. If he opened the “bookmarks” in the left-side navbar he/she will see all the tweets he/she saved



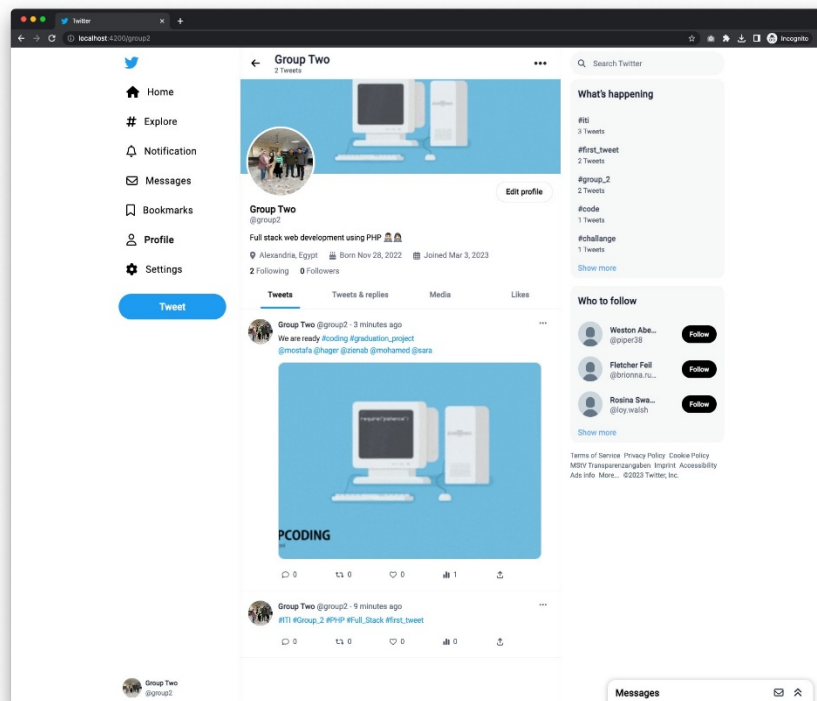
If he clicked on the bookmark icon again it will be “remove from bookmark” where he/she delete it from bookmarked



And the bookmark page will be empty.

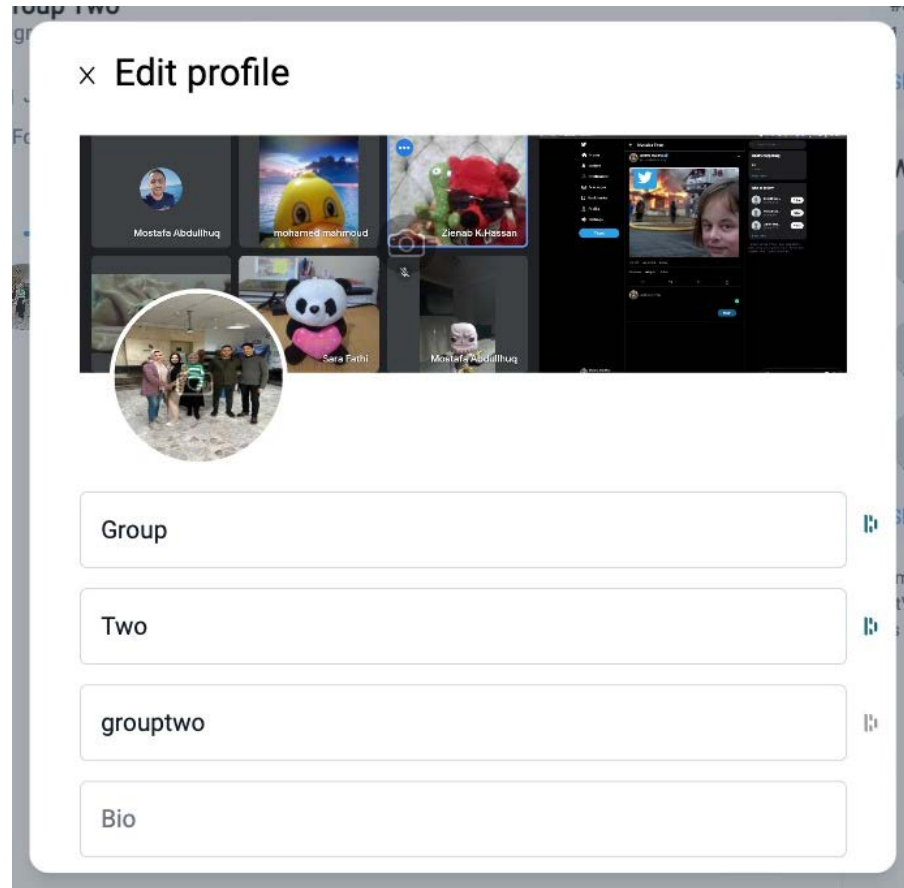


12. If the user clicked on “profile” he will be redirected to his/her profile page:



In the profile page user can see, or edit anything about him/her tweets, tweets& replies, likes and media.

Starting with “Edit profile button” that shows the following popup where he can add profile picture/cover picture /bio/phone number/location/website URL and birth date.



Group Two

Group

Two

grouptwo

PHP Full Stack Web Development 🧑🧑

Phone number

Alexandria

twiter.online

dd/mm/yyyy



Save

2

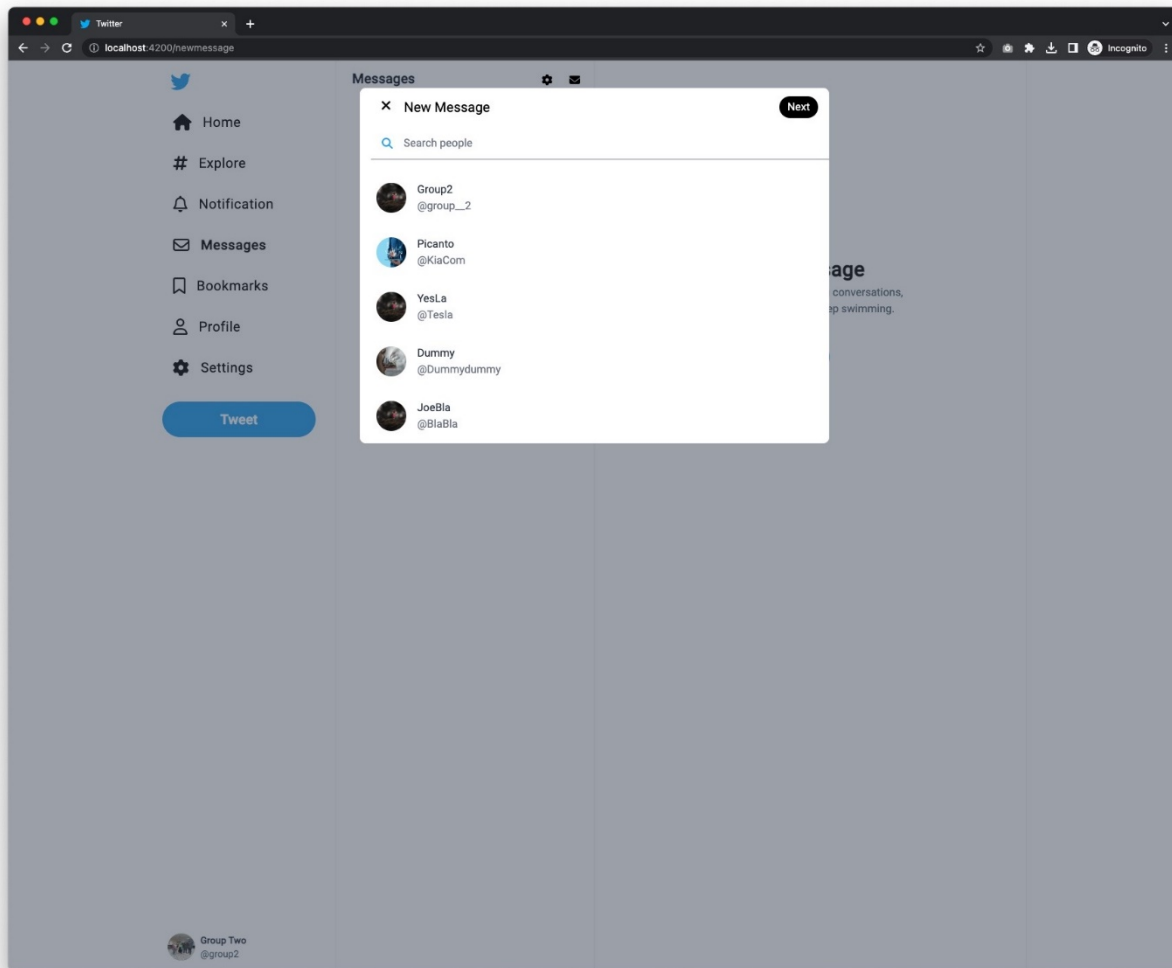
0

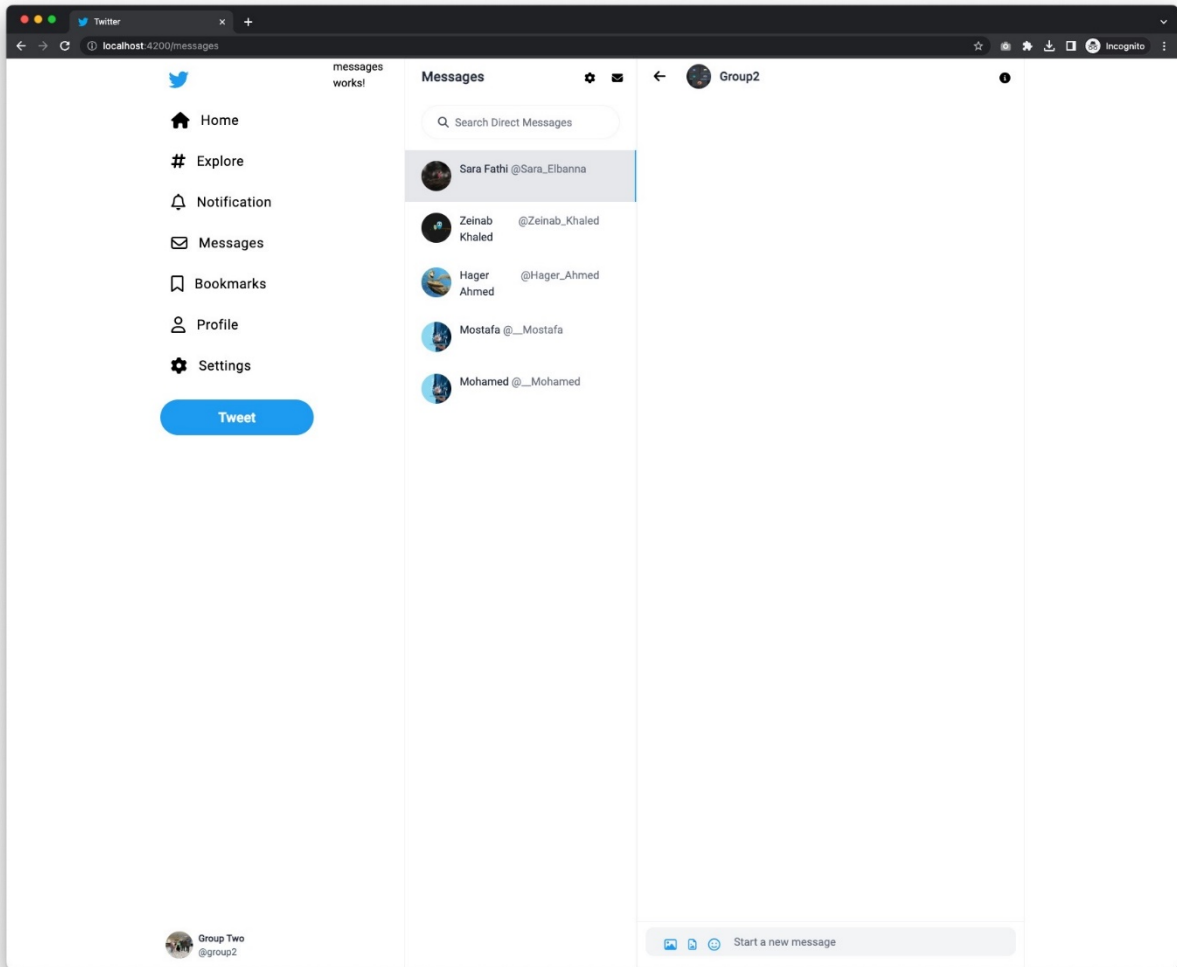
2

8

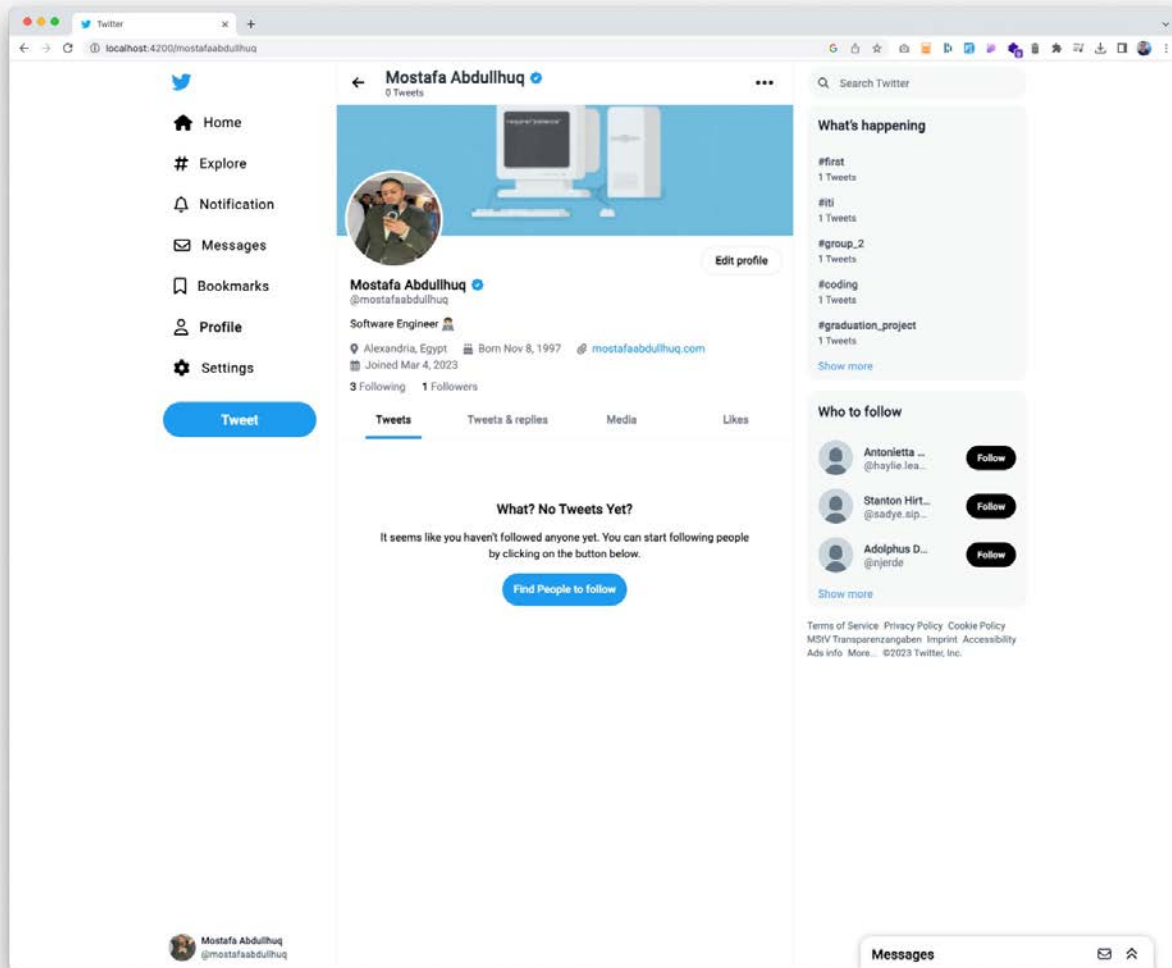


13. User can chat with other users

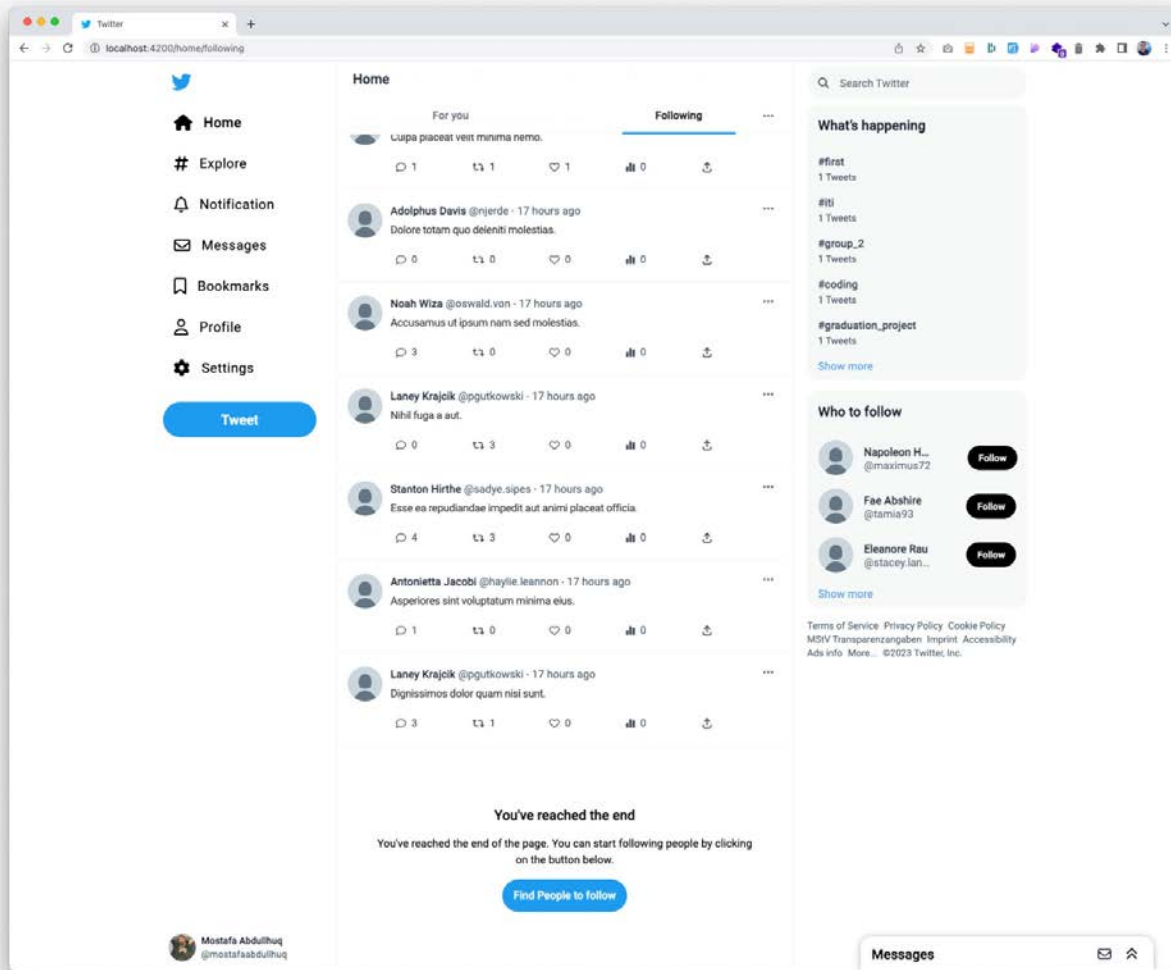




And see other users profile pages



And his/her tweets seen by others



14. If a user clicked on “settings” page he will be redirected to the page where he can delete his/her account, change password or view account information

