Chirpin — Where Voice is Heard

Version 1.0.0

DFD Specification Document

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1 High-Level Context Diagram

Our Chirpin System can be accessed by two user groups. For administrators, they can log in and do some user management operations. For normal users, they can first login or sign up. With the verification token returned by the back-end server, user-specific functionalities are activated such as User Interaction, Search, Chat, and Tweet Interaction. Four databases are designed for storing information.

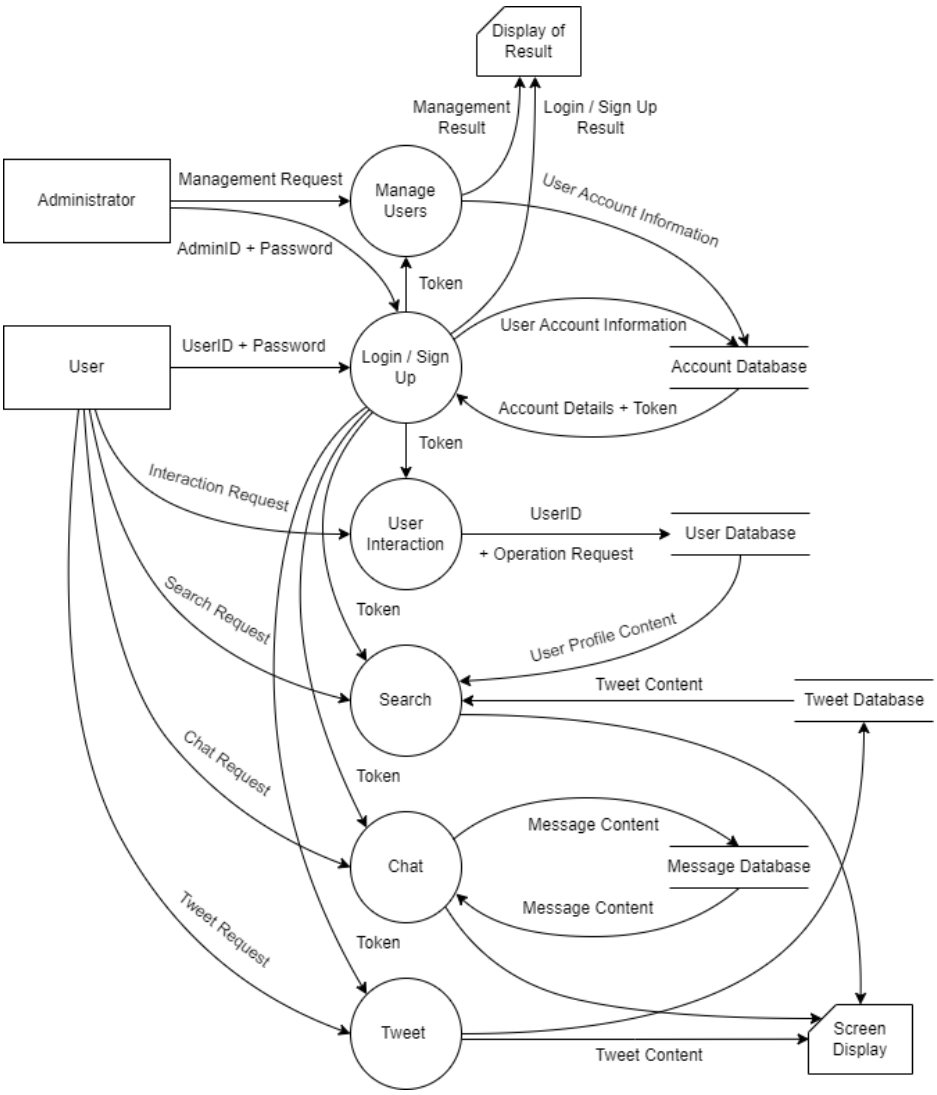

Figure 1: High Level Context Diagram

2 Feature Diagrams

2.1 Feature-1: Log in

2.1.1 Description

A new user could sign up with his/her username and password, and the corresponding account information will be stored in the account database. A registered user could log in by inputting a valid user ID and the correct password validated by the database. Other below operations are permitted only after a user logs in and will be identified by user ID. A logged user could view the personal profile (reading from the database) and edit their account information including password and username (writing to the database).

2.1.2 DFD: Login

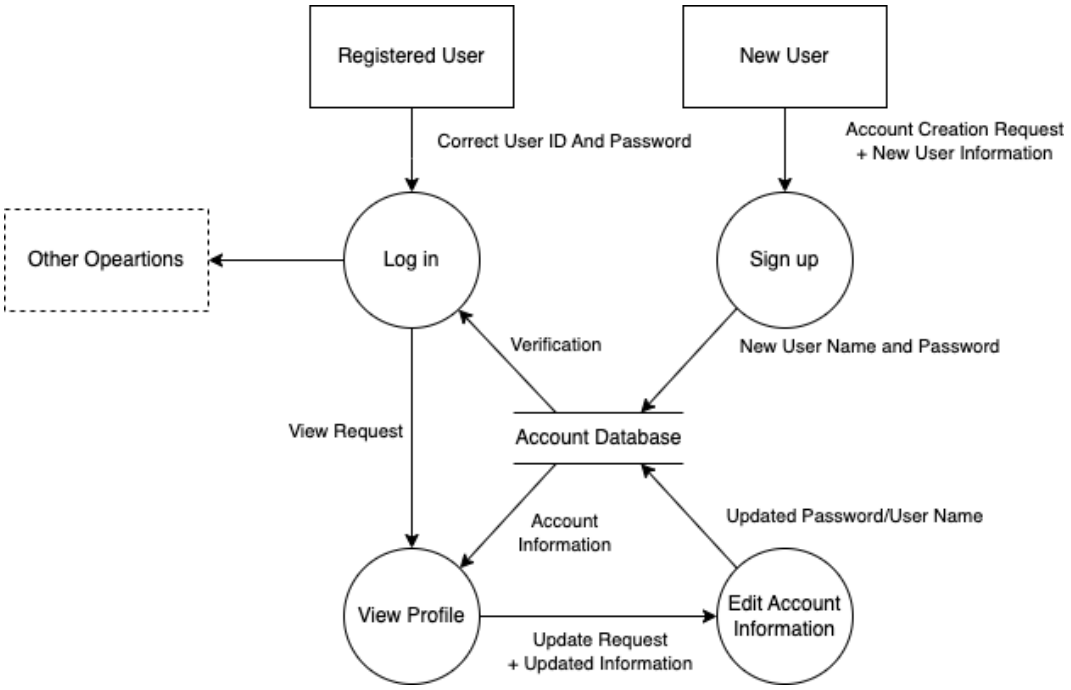

Figure 2: Feature Log in

2.2 Feature-2: Admin

2.2.1 Description

An administrator can add a user by sending the UserID and Password to the server. The new piece of information should be added to both the account database and the user database (Account database is used to store the id and password while user database stores more user-related data like name, age and country in the user profile). Admins can also delete a

user by specifying the userID. Then the corresponding piece of data would be selected and removed from the databases.

2.2.2 DFD: admin

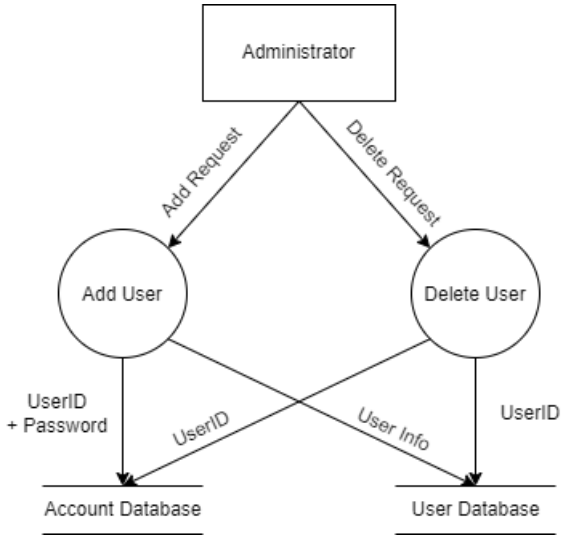

Figure 3: Feature Admin

2.3 Feature-3: User Interaction

2.3.1 Description

A user could follow/unfollow and block another user. A user sends a follow/unfollow or block request with the target user information, then the follow/unfollow or block process will update the User Database which stores the information of the user relationship.

2.3.2 DFD: User Interaction

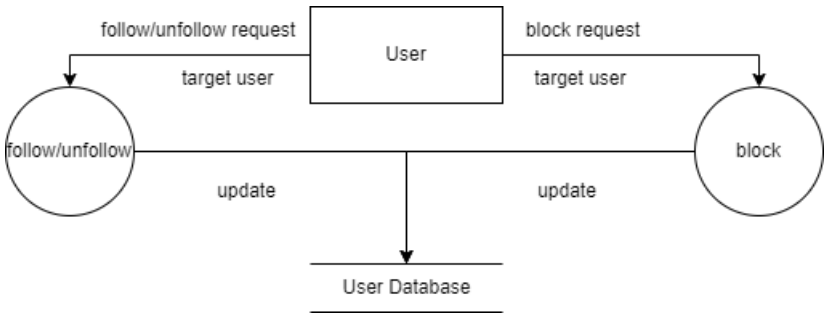

Figure 4: Feature User Interaction

2.4 Feature-4: Search

2.4.1 Description

A user could search for a user by the user ID or Name and search for a topic by the tag. When a user searches for another user, a query will be sent to the Search User process. The process will retrieve the information of possible target users from the User Database and output the search results. When a user searches for a tag, a query will be created and sent to the Search Tag process. The process will find tweets with that tag from the Tweet Database and output the results.

2.4.2 DFD: Search

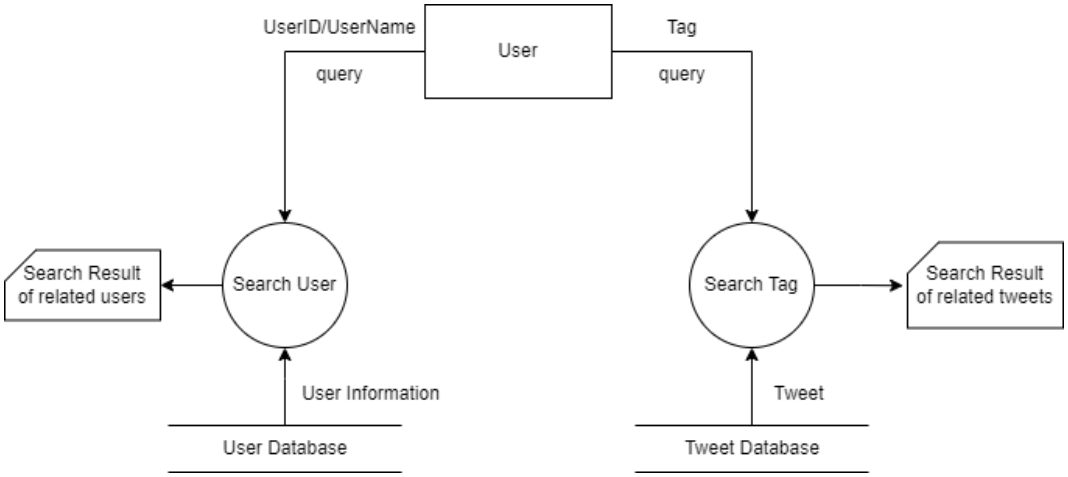

Figure 5: Feature Search

2.5 Feature-5: Tweet Interaction

2.5.1 Description

A user could perform 7 actions in total with regard to tweet interaction, including post, report, delete, retweet, dislike, comment, or save posts. When a user wants to post his tweet, he should first input the tweet content on the client side. Then our application will send the content together with the user id to the server. Our server will perform the privacy requirement check. If the post is public, it will be updated in the public tweet database and all the users can have access to this post. Otherwise, the post needs to be stored in the private tweet database and is only visible to the owner. The user id and the reported tweet id will be sent to our server and be updated in the tweet database when a user wants to report a specific tweet. Similarly, when performing the delete, retweet and dislike actions, the user's id, tweet id as well as the retweeted content, if needed, will be transmitted to the server. The corresponding information will be updated in the database related to tweet information. When a user comments on a tweet, the user ID and the comment content will be sent to the

server. The Comment process will save the comments, commenter, together with the tweet ID to the Tweet Comment Database. When a user saves a tweet posted by others, the user ID and the tweet ID will be sent to the Save process. Then the process will store the (user ID, saved tweet ID) pair in the User Save Database.

2.5.2 DFD: Tweet Interaction

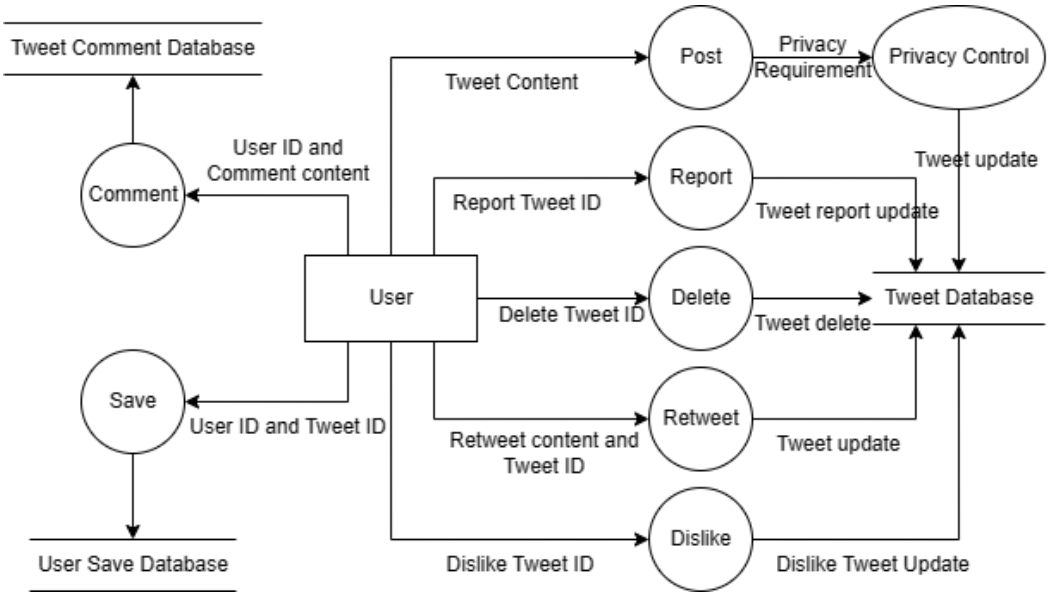

Figure 6: Feature Tweet Interaction

2.6 Feature-6: Chat

2.6.1 Description

When a user (sender) wants to chat with another user (receiver), he/she will first send a request, the Check Permission process will compare the sender's user information against the receiver's block list to ensure the sender is eligible to send messages to the receiver. If the sender is blocked by the receiver, a reject message will be shown on the sender's screen. If the sender is eligible, he/she can then input the messages, the Deliver Message process will store the new messages in the message database and retrieve the chat history between the two users. Then, the Display Message process will show the chat history and new messages from the sender to the receiver's screen.

2.6.2 DFD: Chat

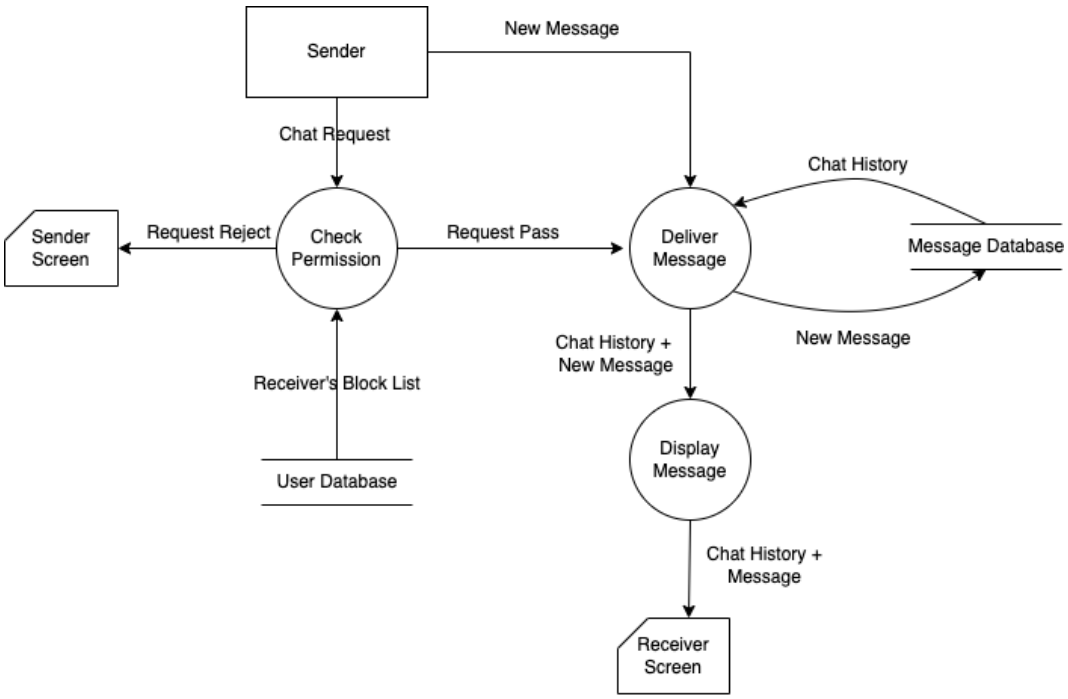

Figure 7: Feature Chat