

Twitter-clone App Project

DFD Specification Document

Group C4:

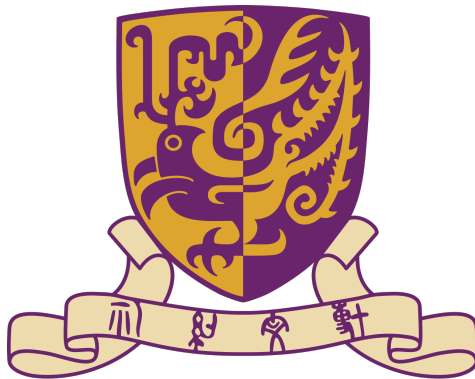
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1 High-level Context Diagram

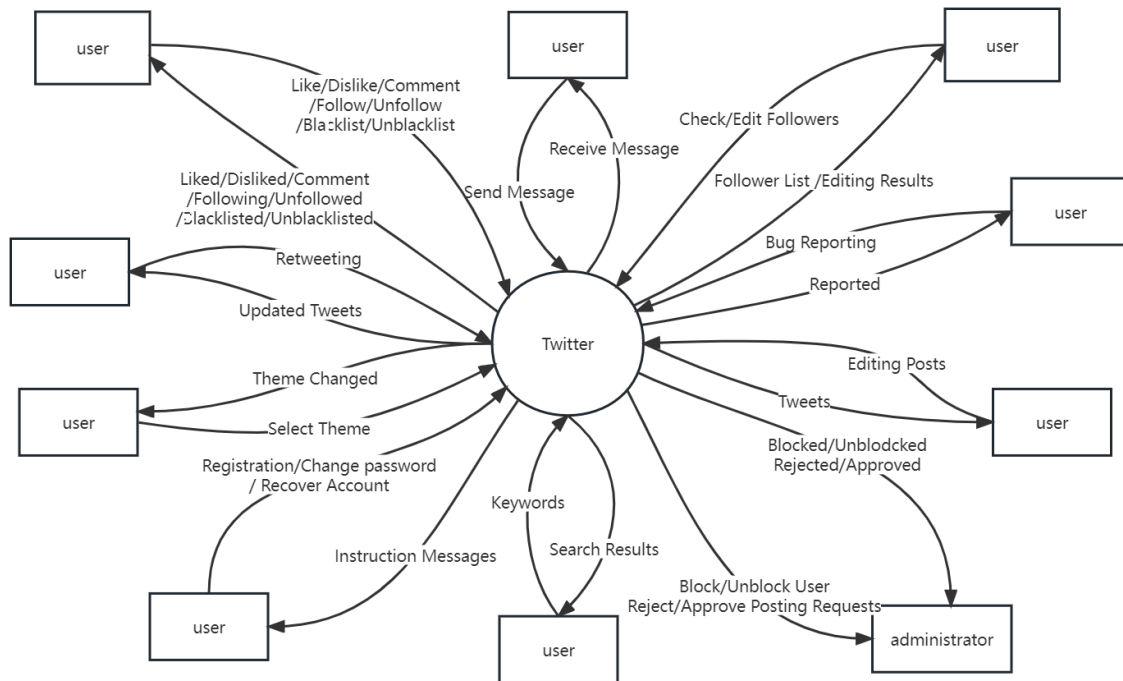


Figure 1: Context flow diagram for our twitter-clone application

2 Feature Diagrams

2.1 Feature 1 - User Registration and Verification System

2.1.1 Description

New users can register on the login page so that they can log in to Twitter. Users are required to provide their customized username, password, and email address for verification. The input username and password will be first validated to ensure there are no duplicated usernames or insufficiently secure passwords. After passing validation, a verification email containing a six-digit verification code or an authentication link will be sent to the address provided by new users, and new users need to click the link or fill the verification code on the registration page to send an authentication email to the account verification system. After a successful verification, the database will update and a new user can log in on the login page. Otherwise, there will be a message reporting the failure and the corresponding cause.

2.1.2 DFD

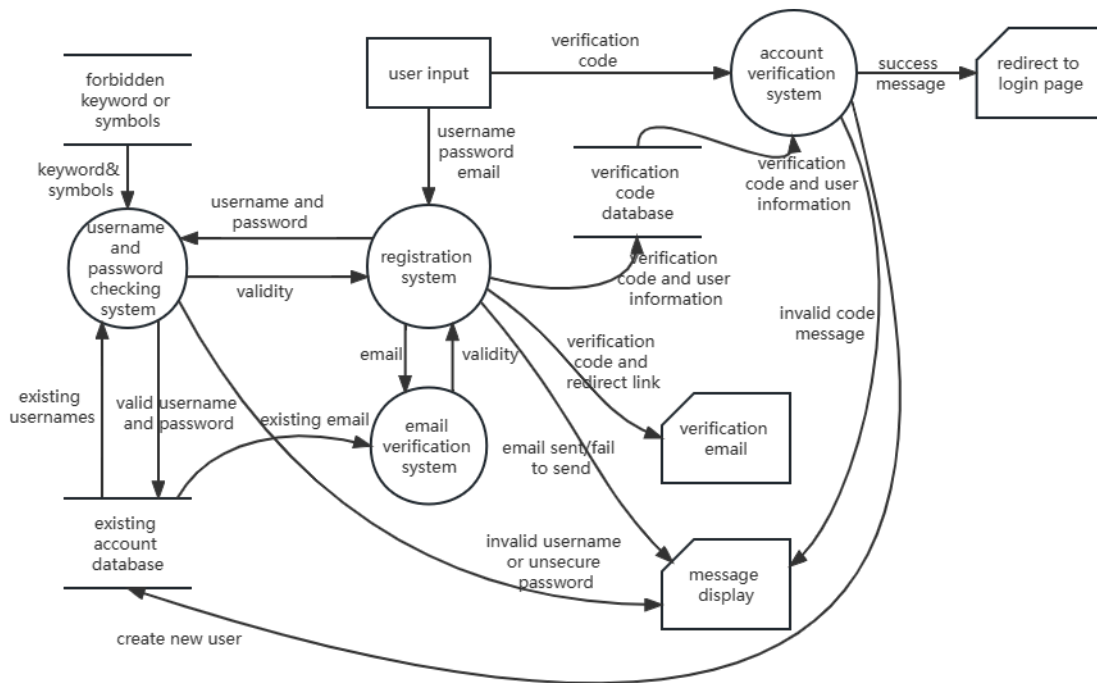


Figure 2: DFD for user registration and verification system. Includes user registration, username and password checking, email verification, and account verification.

2.2 Feature 2 - User Login and Multi-Account Management

2.2.1 Description

A registered user can log in to his/ her Twitter account on the login page. Users are required to input their usernames and password. After a user's input passes the verification, the user can enter the homepage. Otherwise, a message reporting the wrong username or password will pop up. The user can also change his or her currently logged in account by selecting an account that are currently available on this device in the manage account page. An account will be added to this list automatically when it is logged in on this device. The user can also delete an existing account in this page, so that he or she has to log in again to regain access to this account.

2.2.2 DFD

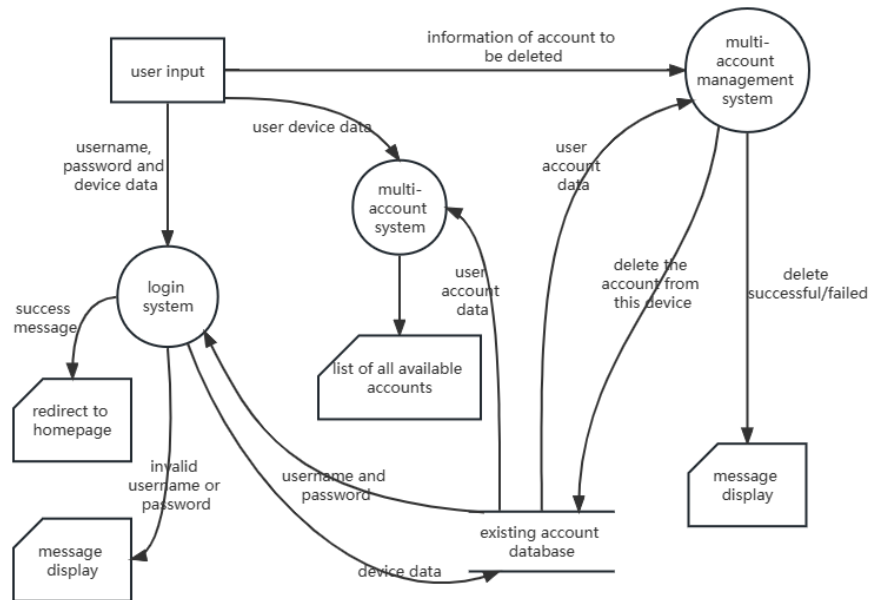


Figure 3: DFD for user login and multi-account management. Includes user login and multi-account management.

2.3 Feature 3 - Password Changing System

2.3.1 Description

If a user forgets his/ her password when trying to log in to their own account, they can click the 'forget password' button on the login page and have a verification using the email address they provided when registering. After successful validation, the user can reset the username or password.

If a user wants to change the password when being in a log-in status, he/ she can input the old password and a valid new password. Then, the database will be updated.

2.3.2 DFD

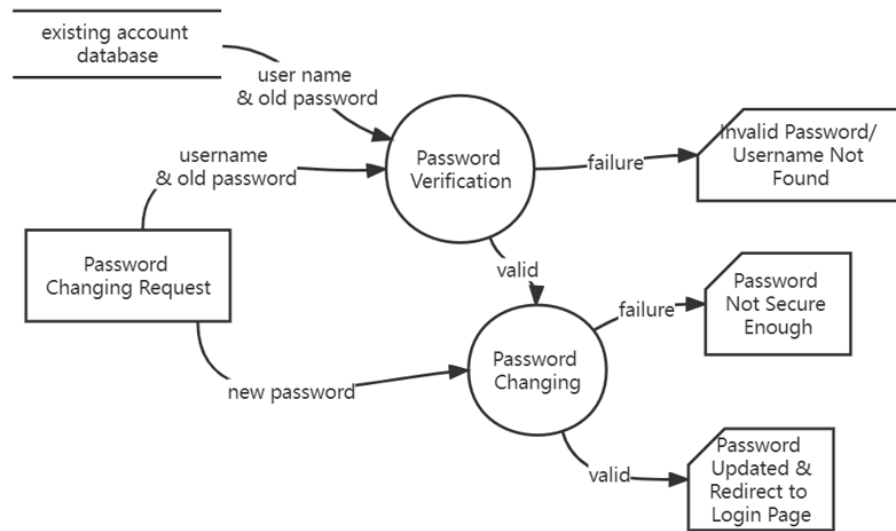


Figure 4: DFD for user password changing.

2.4 Feature 4 - Profile System

2.4.1 Description

Users can check or edit their profiles through this system. The profile lists the user's personal information including head portrait, region, nickname, birthday, ..., posts, and statistics. The user can also edit part of his/ her own profile, such as adding personal information or choosing to show or hide their profile to or from whom.

2.4.2 DFD

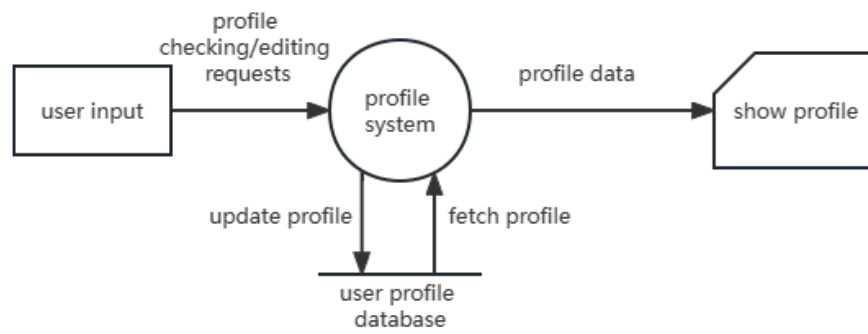


Figure 5: DFD for user profile management.

2.5 Feature 5 - Tweet Posting System

2.5.1 Description

This tweet posting system allows users to create tweets in the Twitter-clone app. When users try to create tweets, they are required to choose photo(s)/ GIF(s)/ video(s) from their photo album. Then, users should write a caption on their tweets. The system also allows users to tag people in their tweets. Upon posting tweets, users can decide if he/ she wants to post anonymously or not. They are also able to choose their target audience to be merely their followers or everyone (i.e., private or public). After posting tweets, users can edit or delete their tweets.

2.5.2 DFD

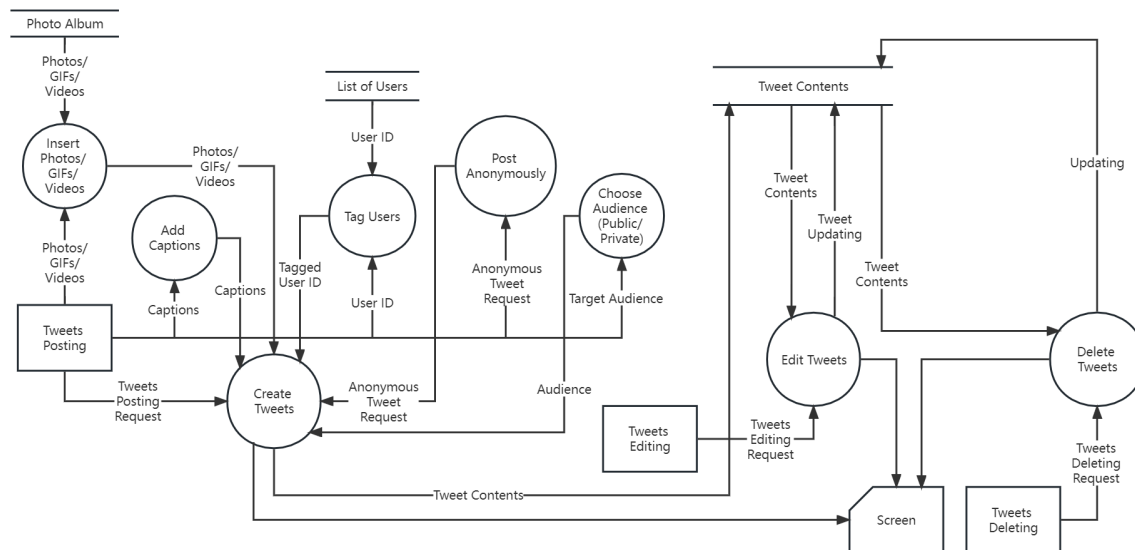


Figure 6: DFD for tweet posting system. Includes posting tweets (inserting photos/ GIFs/ videos, adding captions, tagging users, posting anonymously, choosing target audience), editing tweets, and deleting tweets.

2.6 Feature 6 - Tweet Reaction System (Like/ Dislike, Comment, Retweet)

2.6.1 Description

This tweet reaction system allows users to like/ dislike their own tweets or tweets of other people. When people like/ dislike a tweet, his/ her username, as well as the number of users who have liked/ disliked the tweet will be displayed near the like/ dislike icon. By clicking on the number of users liking/ disliking a tweet, a corresponding list of users will be shown. Apart from giving thumbs up or thumbs down to the tweets, users can also comment on tweets, or reply to others' comments. In the comments, users can choose to tag other users. After they post a comment, they can edit or delete it when necessary. Besides, users can retweet tweets to share with their followers.

Other than the above tweet reaction features for general users, there are also some advanced features for tweet owners. For the owners of tweets, they can delete others' comments under the corresponding

tweets. They can also pin comments to the top in order to increase the chance of other users seeing the pinned comments.

2.6.2 DFD

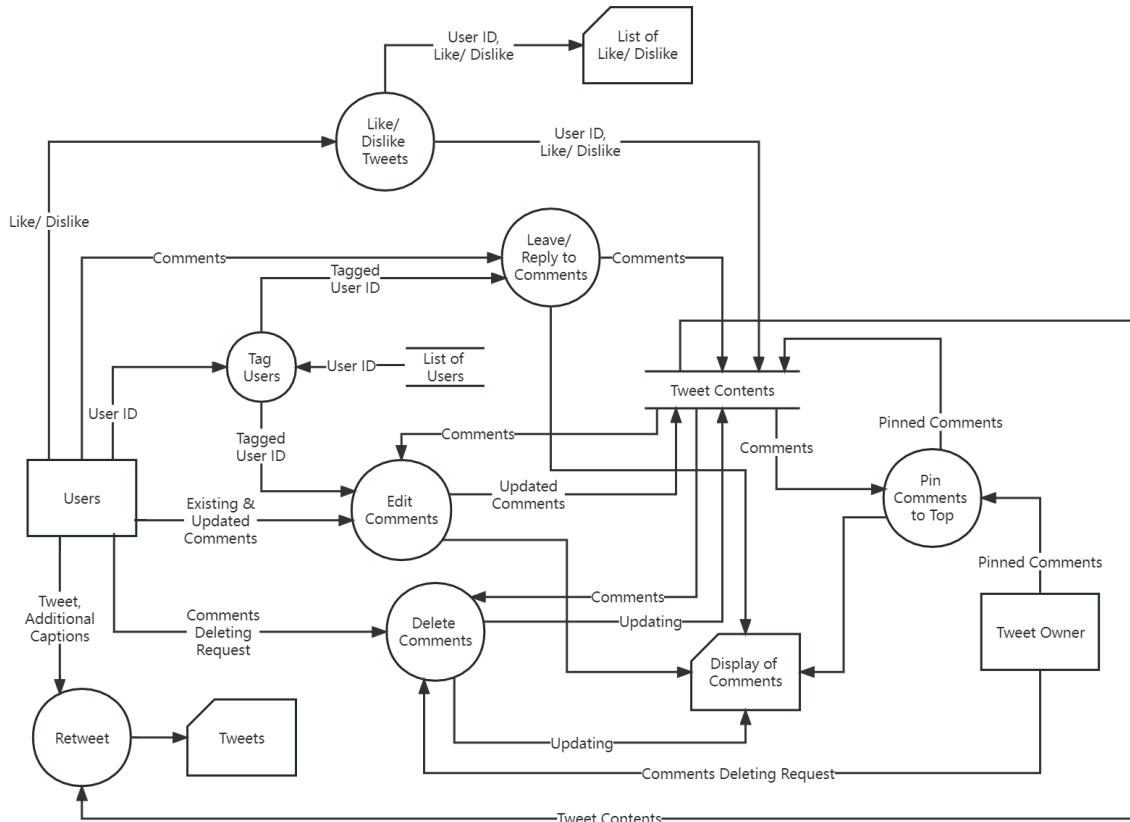


Figure 7: DFD for tweet reaction system. Includes like/ dislike, post/ reply to/ edit/ delete/ pin comments, tag people in comments, and retweet.

2.7 Feature 7 - Searching System

2.7.1 Description

Users can search for tweets including a tag by entering the tag and press the "search" button. Tweets containing this tag will be shown in the search results list. Users can also search for users by entering a keyword. The system will return a list of users whose username contains this keyword.

2.7.2 DFD

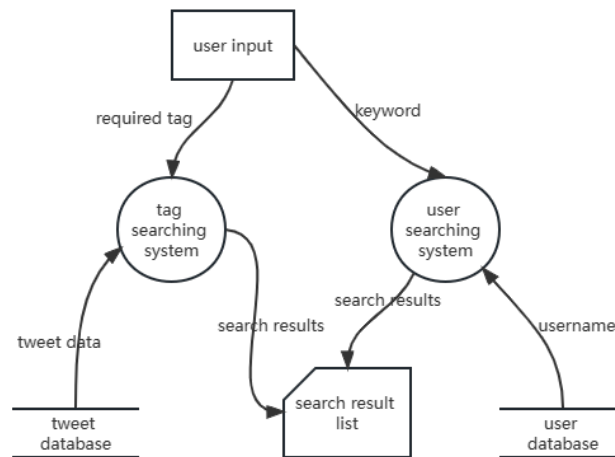


Figure 8: DFD for searching feature. Includes tag searching and user searching.

2.8 Feature 8 - Following System

2.8.1 Description

On our Twitter, users can follow and unfollow other users. Users can see updates from the users they follow on their main page in real-time. On the other hand, if one user decides to unfollow those users later on, he/she will no longer see their updates. Besides, users have the option to add other users to their blacklist. Once a user has been blacklisted, they will not be able to view each other's tweets or have private chats.

2.8.2 DFD

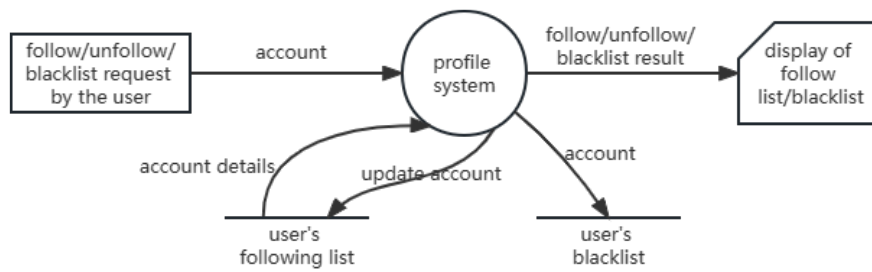


Figure 9: DFD for user follow/unfollow/blacklist

2.9 Feature 9 - Private Chat System

2.9.1 Description

This private chat system in the Twitter-clone app allows users to send/ receive messages, search in chat history with keys or clear their entire chat history. The chat page also displays user profiles, including

profile pictures and names. Additionally, our system provides a blocking feature, which adds the other user to black(block) list. The DFD separated into 2 parts for accessibility. The first one (Figure 10) is about user-side operation needed to start a chat, including to search for a user, to send message request, and to accept/ block following it. The second one (Figure 11) is chat-side data pipeline which controls chat content upon user's request and maintain chats upon new message/ delete chat request. It also supports chat history search inside a chat.

2.9.2 DFD

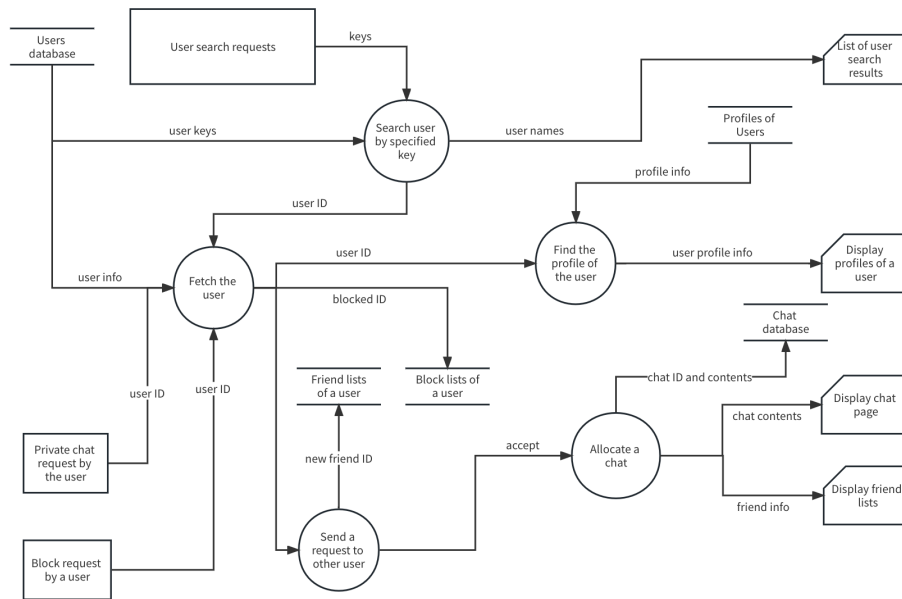


Figure 10: DFD for private chat system (part 1). Includes user search to launch a chat request, and acceptance. Chat accessibility like chat entries, chat page, and chatter profile display.

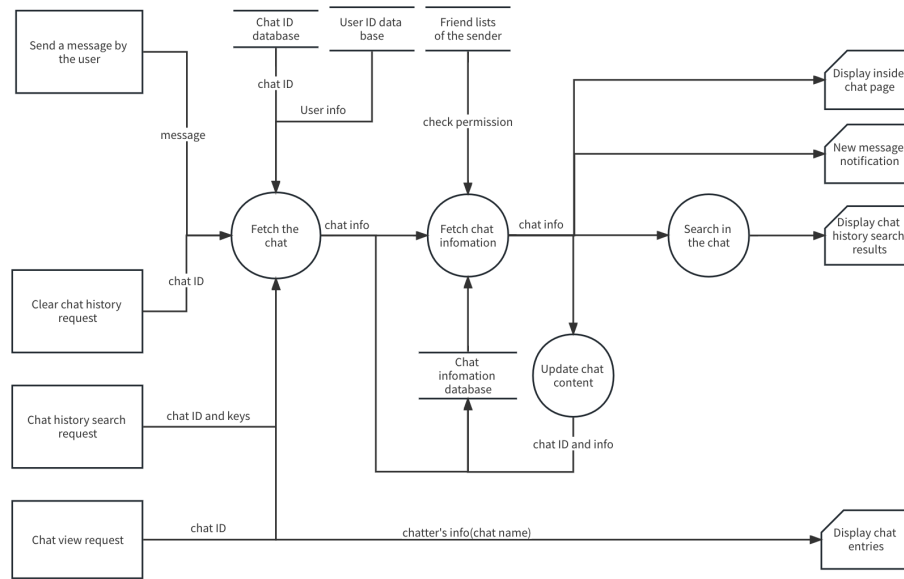


Figure 11: DFD for private chat system (part 2). Includes chat page display, sending messages, updating chats, deleting chats, and searching for chat histories.

2.10 Feature 10 - Personalization System

2.10.1 Description

Users can customize their application interface according to their preferences. This includes the option to switch between different themes (dark mode and light mode) and adjust their language settings and character fonts from a predefined database.

2.10.2 DFD

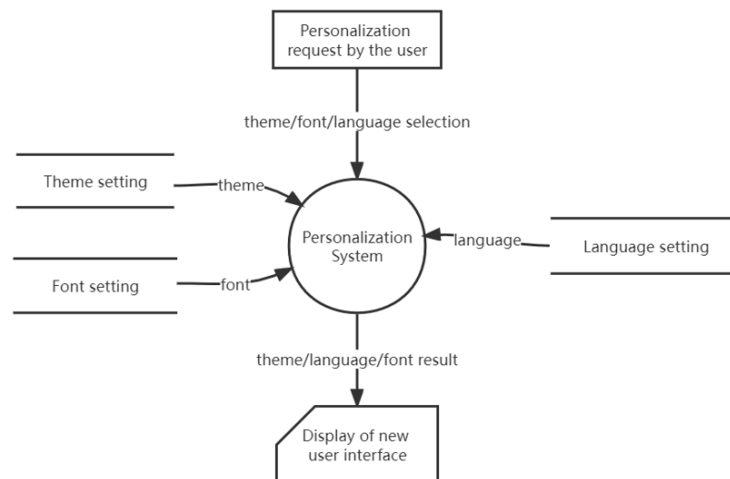


Figure 12: DFD for interface personalization. Includes theme setting, font setting, and language setting.

2.11 Feature 11 - Administrator System

2.11.1 Description

To ensure smooth operation of our application, we have provided a bug reporting entry for users to report any issues they encounter. We encourage users to share their suggestions and feedback, which our development team will use to address potential problems as soon as possible. Administrator is able to fetch particular chat and tweet (may be anonymous) and check if there is inappropriate content. If yes, the relative content will be removed and the user may be suspended for some time.

2.11.2 DFD

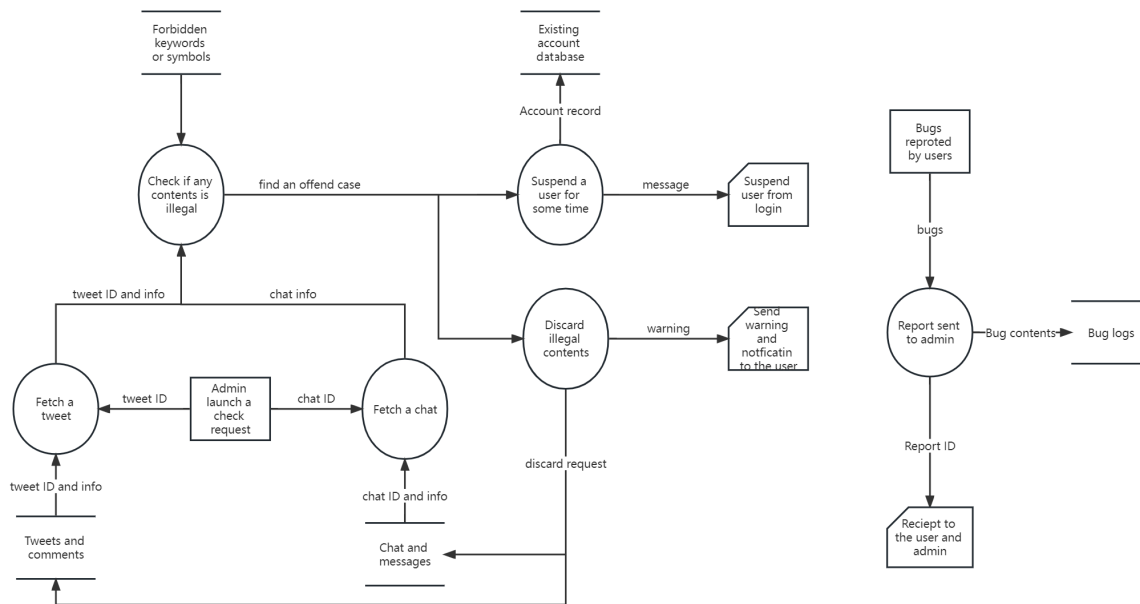


Figure 13: DFDs for administrator system. Includes content review by administrators and bugs report to administrators.