

High-Level Design Document

1 Introduction

1.1 Project Review

During the epidemic lockdown, there emerged a new demand for platforms among students. These platforms typically offer full visibility of posts, allowing all users to see what has been posted, with the option for posters to remain anonymous or not. Such platforms promote information sharing and communication within the student community, offering opportunities to share course experiences, buy and sell items, and exchange information on current events. These platforms are commonly referred to as "campus walls" or "treeholes."

CUHub is an online platform that blends the functionalities of traditional social media and those of "treehole" platform. It is exclusively designed for the students of the Chinese University of Hong Kong and requires authentication for account creation. The platform offers a range of features including profiles, posting, commenting, private messaging, and friending, and also integrates the treehole posting feature to enhance information exchange. Users can opt to share their posts through their personal account, making them visible only to their followers, or they can post anonymously or using their real names via the tree hole platform, making the information visible to all users. Additionally, the platform features hot topics and tagging, providing users with real-time trending tags and the ability to search for posts based on tags or keywords. CUHub provides a valuable communication and information-sharing platform for CUHK students.

1.2 System Features

Feature I : Almost everything you have on other social media platforms, you have it here.

CUHub is designed to be user-friendly and responsive. The platform integrates popular social software functionalities and offers unique features to enhance the user experience. Key functions, including searching, post labeling, posting, following, private messaging and so on, will be further explored in later sections. Additionally, CUHub employs the use of local device data caching, ensuring a seamless user experience.

Feature II : Treehole

The CUHub offers users the freedom to choose how they want to share their life. If you prefer to keep your posts limited to your friends, the platform features a traditional posting system, enabling you to share your happy moments only with your followers and keep up with your followers' posts. Want to ask for a course review or share your feelings across the platform? No problem, you can switch to the Treeholes page at any time, to post anonymously or using your real account and reach out to individuals you may not know through private messaging or by commenting on their posts.

Feature III : Trending and Recommendation

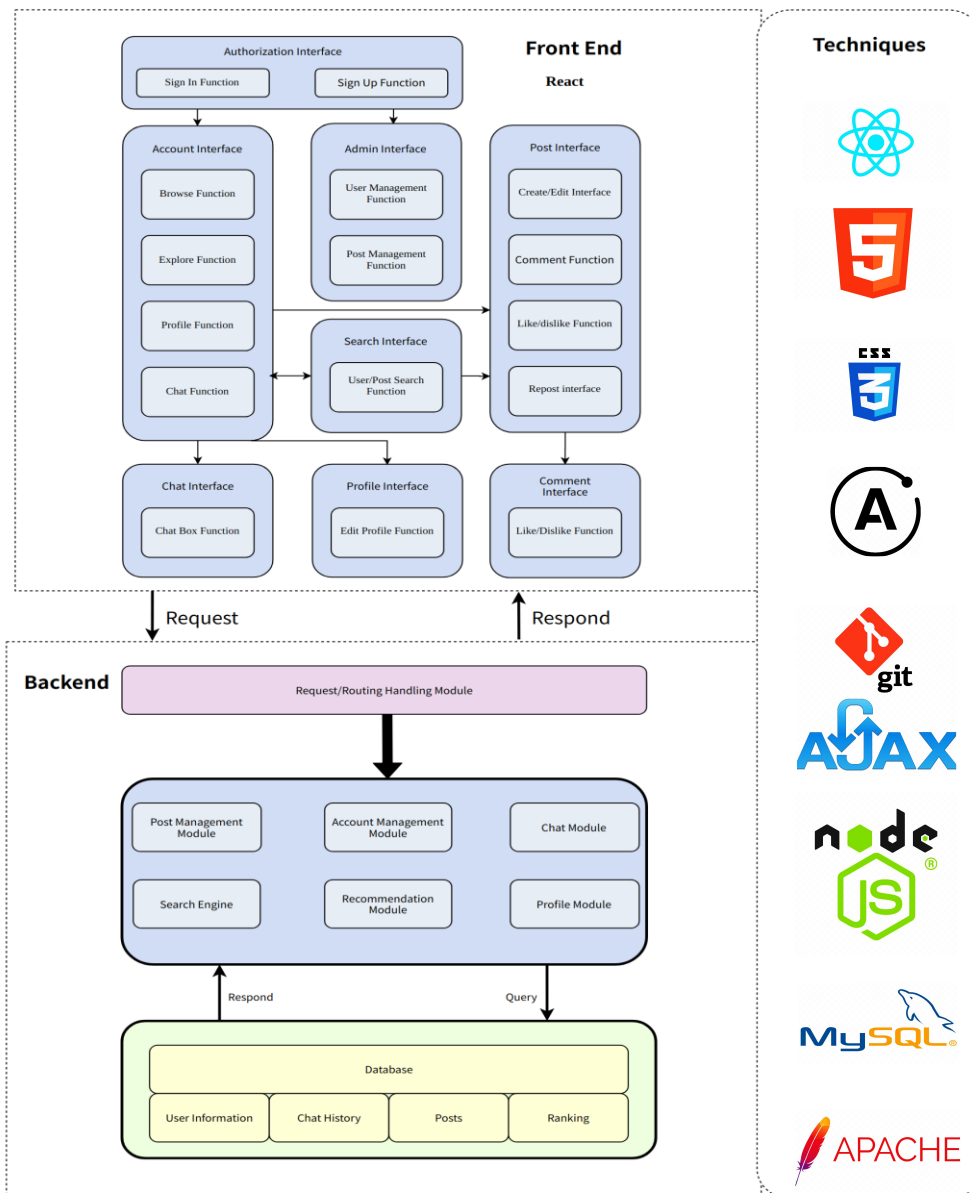
With an abundance of information available, it can become overwhelming to keep up with everything. To assist users in staying informed and finding content of interest, CUHub has implemented the trending and recommendations features. The trending feature displays the hottest posts and tags in real-time, ensuring users never miss out on the most popular topics. Meanwhile, the recommendations feature provides personalized suggestions for posts based on users' preferences, making it easier for them to find content that aligns with their interests.

Feature IV : Feedback System

CUHub values the user experience and welcomes feedback on the features they would like to see and the problems they encounter. Users can always give feedback to the development team via the internal feedback system.

2 System Architecture

2.1 Architecture Diagram



2.2 System Component

2.2.1 Authorization Component

Sign In/Log In

New users can use their personal email to sign up for their accounts by verifying a registered email. Registered users can log in with their account and password. Password could be changed while the email

varify is required for password changes.

2.2.2 Post Component

CUHub will have two separate posting modes: the normal mode and the tree hole mode. The normal mode will be no different from the discovery page of a traditional social media app like twitter, where you can share your daily routine for your followers to see. The Tree Hole Page, on the other hand, implements the functionality of the treehole platform, where you can choose to post anonymously and your posts will be visible to everyone, and where you can also see everyone's posts in chronological order. The Tree Hole Page will have most of the features of the normal mode post page.

Labeled Post

This component allows users to post their experience. Users can choose to attach the experience to either a team or an event. When creating a new post, there is a label choice prepared for the user. The label is a mandatory part and the post will be allocated to the related blank. This can help users to browse posts in a more efficient way. After a post is created, the owner has the right to change the content, visibility of the post without deleting it and create a new one. In Tree Hole Page, post is set to be globally accessible and can be posted in an anonymous way.

Repost

For each post, the owner can set whether it can be reposted by other users or a particular group of users. The users with this access will be able to forward this post to their posts or chats. To protect the rights of the owner, a reminder will be given to the creator if the post is reposted by others. This function is forbidden under Tree Hole Page as all posts are globally visulizable.

Delete Post

The owner of the post have the right to delete their post. After the post is deleted, all the links related to this post such as forward history or original content will be unavailable. There will be no recycling place for deleted post, so a double check will show up before the post is permanently deleted. There is no difference between normal and Tree Hole Page for this function.

See trending

In the search bar and main page, trending info will be given to the user to help them get in touch with the hottest topic so that the user will get the latest information and join the discussion actively. There is no difference between normal and Tree Hole Page for this function.

Like/Dislike a post

This component allows users to like or dislike other's posts. The like and dislike information of a post can be viewed by the post owner. This function will mainly interact with post database. There is no difference between normal and Tree Hole Page for this function.

Liked Post History

The system will save the like history of users, which allows users to find those posts they liked quickly and conveniently. This component involves both account database and post database. There is no difference between normal and Tree Hole Page for this function.

Star Post/Label

This component allows users to collect posts/labels they like so that they can find those posts/labels quickly next time in their personal page. And when first sign up, users can select several labels they are interested in and add them to their favorite, thus they could see updating posts with these labels afterwards. This component involves both account database and post database. There is no difference between normal and Tree Hole Page for this function.

Recommendation

This component is used to fulfill the user requirements. The software will recommend posts that users are properly willing to read based on their reading history. This component mainly interacts with post database, account database and so on. There is no difference between normal and Tree Hole Page models for this function.

Draft of post

This component allows users to save their draft of posts in the system for one time, which will appear next time when they want to write posts. There is no difference between normal and Tree Hole Page models for this function.

Random Post

This component is used to randomly choose some posts to display for users. These posts are not related to users' preference. This component interacts with post database. In addition, this is not available in Tree Hole Page.

2.2.3 Search Component

Search account

The search function could be used to find another user, like one's friends or famous users, by typing in one's ID or name. This interacts with account database.

Search Post(or labeled)

This component allows users to search posts using keywords and labels, the software will display posts based on correlations with keyword or all posts belongs to given labels. It also memorizes search history. This component mainly interacts with post database.

2.2.4 Comment Component

Comment

All other users that are allowed to interact with a post will be able to leave a comment or view the comment history of the post. They can also give a like or dislike. The history of comments can be sorted by time or by the number of likes.

2.2.5 Account Component

View others ' profile

This component directs users to one's homepage, where they may find the user's name, avatar, background, the intro fulfilled by others, others' following and follower button leading to lists, which may be invisible, and the past posts. This could draw a sketch for users to decide whether to follow another user. And it mainly interacts with account database.

Follow and unfollow

When finding that some users often post in concerned fields, one may follow these users. After following, one may find them in the following list in his or her own profile. On the users' home page, the unread post from the person they followed will be shown up. If there are no such posts, the system will recommend some posts to the users corresponding to the users' preference. If the user has no preference for recommendation, some hottest post will be recommended in a random way. But when they no longer post attractive things, one may choose to unfollow. And this also interacts with account database.

Remove followers

This component allows users to remove followers, like strangers, advertisers and nuisances, from their follower list. It interacts with account database.

Block follower

This prevents users from removing unwanted followers from time to time, and it works by sending requests to users when one wants to follow them, and they can decide whether to pass the requests. This interacts with account database.

2.2.6 Chat Component

Chat

Users could start a conversation with others where they could send text messages, share photos, videos or posts. Also, they could form a group to have group chat. This interacts with account database.

2.2.7 Admin Component

View all posts

Admins have access to view all users' posts in certain cases, no matter if the user has set the visibility of the post. This component will mainly interact with post database.

Delete posts

Admins can delete any post with inappropriate content. This component will mainly interact with post database.

Block accounts

Admins can block a user account with inappropriate behavior. Blocking a user account means the user cannot log into the account and other users cannot view the user's posts during the blocking time. This component will mainly interact with user database and post database.

Unblock accounts

Admins can unblock a blocked account that is still in the blocking time. Then the user account can be used as usual. The visibility of the user's posts is also restored. This component will mainly interact with user database and post database.

Delete accounts

Admins can delete a user account with inappropriate behavior. When a user account is deleted, all the user's posts, followers, and other data associated with the account are also removed from the platform. This component will mainly interact with user database and post database.

View all accounts

Admins can view all users' information. This component will mainly interact with user database.

2.2.8 Profile Component

Design profile

One's profile contains name, avatar, background, intro, following and follower button to check the lists of corresponding users. And one could design his/her profile according to their aesthetics by choosing a nice name, beautiful avatar and background. This interacts with account database.

View profile

Similar to viewing others ' profile, one could see his/her own name, avatar, background, intro, following and follower button, and the past posts. But they could edit their own profile, design, delete past posts, click into the follower list to remove followers. It interacts with account database.