

AcadMap Web Application

Version 1.0

Group 17

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A design specification document of *Acadmap*

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1 Introduction

1.1 Project Overview

AcadMap is an integrated platform consisting of forum, chatroom, and consultation system. It allows users to communicate and seek advice on future paths about their academic careers and allow sharing the experience of their current studies.

1.2 Objective

Some forums have already provided functions for users to communicate about their studies. However, we have noticed that most of the posts in those forums are just gossiping, which not sufficient in seeking constructive advice, especially for higher education. For example, it is rare to see the discussion on pursuing a master's degree and doctorates' degree. According to statistics [1], above 40% of students feel devastated from what they have expected after achieving the actual degree. This stressed the problems of students with lack of understanding before applying for higher education, and they are lacking a channel to have a specific focus on future studies paths for users to get a reference.

Addressing the needs, we aim to provide professional, one-on-one consultation service integrated into a forum for users in seeking professional advice related to their educational issues. The forum allows discussion and sharing of general information on their academics and users can seek specialized consultation by our matching-and-consultation system. We also hope that the platform can corporate with higher education institutions to provide official and updated information to our forum.

1.3 Customers Segments

This project has 2 types of targeted customers, including general users and professional-advice seekers.

For general users, they are able to seek for general information on their future path through the discussions/posts on the forum. By using the forum, they can easily navigate through general academic information. In addition, they can react to the post by commenting and giving "like" if they have registered to our service and search for specific information of different categories using "tags" , which is tagged by users.

For the professional-advice seekers, they are aiming for tailor-made information and advice about their future path. A paid matching-and-consultation system is available for them. By addressing the system, consultees can match with different consultants who meets the requirement of them, and they could ask for more specific information related to the consultant and even request a consultation service in a private chat session.

We have predicted the peak usage of the system is in November and July since of the submission deadline of the Joint University Programmes Admissions System (JUPAS) is in early December and the announcement date of HKDSE results is in July.

These types of customers will be separated into 3 user cases which will be introduced in the below section.

1.4 Value Propositions

We provide a specified focus on the future academic path of our users, and we aim to provide a professional and comfortable platform for users to acquire more in-depth understanding before making the decision in their pursuit of academics. Through the discussion to the people living or studying in the environment that the user may interested in, users can make wiser decisions on their future.

1.5 System Features

The system consists of multiple functions and features. The two main features are introduced below.

1. Online forum

Users are able to create, react and discuss in the post. The forum mainly focus on discussions which is about different academic studies.

2. Matching-and-consultation system

After receiving the requirements of the user, we search for users who have registered for the program and opted in to give consultation through the consultation service. Then, the most suitable consultant would be returned to the consultee. They can chat in a private chat room before the official request of consultation. It is possible for the user not to ask for a consultation request after private chatting. Meanwhile, a score would be given to the consultee after the completing the consultation. The system will then update the score of the consultee to rearrange his/her priority in the matching system.

2 Background

Nowadays, there is a lack of online platforms for students to seek professional advice on their future academic path, especially with higher education in Hong Kong. Although Universities have already conducted certain activities for students, most of them are in physical form, such as talks in open days. Students involved may feel shy to ask questions and attending these events, as attending them may require transportation fee and time. Moreover, most of these meetings do not have recording due to privacy issues. Students cannot access those information easily. It is inconvenient for students to collect information, helping them to choose the correct path.

This project is building an online platform to link up people's intentions to share and acquire the information related to their academic experience and people searching for their future path and willing to seek for more information. The system can be accessed 24/7, which users can conveniently accessing the information. The project will have a more specified focus on future paths with the provision of an open, broader view on the users' future academics path.

3 Specification

3.1 Functions and features

3.1.1 Login page

Login page is the page that enables users to provide the identity for users on the server and provide various functions for users to interact with the server. User can choose to register as a registered user with the ability to join consultation (crowned user), a normal registered user (silver user) or simply unregistered (visitor or general user). A crowned user can be both consultant and consultee.

This page consist of following function:

- **Account registration**

Account registration is for users to register their account. User must input their information, e.g. email, password, username, in order to be registered. User can choose whether they want to join consultation program or not, in the case that the user choose to join the program, they will be granted as crowned user membership, otherwise, they will be silver user. Following that, they will input their interest topics and major. This function will also check if the user input is valid. If the user input is valid, account will be created successfully and a verification email will be sent to user's email. Otherwise, the system will request the user to input their information again.

- **Account Login**

Account Login captures username/email and password and compare the information from the account database. User will be logged in to the server if the user input is valid. Otherwise, the page will request the user to input the information again. After 5 failed attempt, the system will send a message to the user and recommend them to use the forget password function.

- **Forget password**

Forget password will checks the username/email and sends a verification email to the user email. After clicking the verified link in the email,the user can change their password.

- **Visit as visitor**

Visit as visitor will enables the visitor mode to get into the main page without providing any information. Visitors will be provided with limited function in the homepage and only allowed to browse the home page and not be able to join consultation nor leave comments in the forum.

3.1.2 Main forum

The forum allows users to browse posts that other users have posted. It will also provides a function for users to filter or sort the post according to their interest. Different users are able to access different functions.

This page consist of following function:

- **Posts filtering**

Posts filtering allows users to filter between undergraduate posts and postgraduate posts. User can choose between `undergraduate` and `postgraduate` to filter posts that they want to access.

- **Posts sorting**

Posts sorting system allows users to sort the posts according to different criteria,

- by popularity which is according to the amount of ‘likes’ and ‘dislikes’;
- by the posting time (from the latest posts or from the oldest posts);
- by using different majors, different years of study, and more.

- **Posting and editing posts**

Posting and editing posts allows users to post and edit their post. It also enables users to comment, edit and delete comments.

Only registered users (Silver and Crown users) can create new posts and edit the old post that they have created.

- **Like and dislike**

Like and dislike enables users to like the posts that they are interested in. Posts with more likes will have a higher popularity such that the posts will be recommended to more users.

Only registered (Silver and Crown users) users can like or dislike posts.

- **Reply and comment**

Reply and comment allows users to reply and comment in posts.

Only registered users (Silver and Crown users) can reply and comment.

- **Tagging**

Tagging allows users to browse posts by category. In the forum, the system will categorize the post by their tags, e.g. `#academic`, `#fun`, different university etc. User can browse the category which they are interested in.

This is different from the filtering as filter only filter the forum posts in a fixed range of category but not customized tags, which is created by the user.

3.1.3 Consultation choosing System(CCS)

CCS is for a user to set up a consultation. Consultee can choose different consultant to carry out the consultation. After both parties agree to carry out the consultation, a payment verification email will be sent to the consultee, which will provide a link to confirm their payment and direct the consultee to the payment Page. Consultee can choose their consultant by using different functions. This system consist of following function:

- **Private Direct Message (DM) in forum**

Consultee can choose to DM other users in the forum. If both users are crowned users, they can set up the consultation easily. Otherwise, they can message (with limited word count) to each other first before deciding whether they agree to carry out the consultation and change their membership to crowned user.

- **Matching System**

Our matching system is based on user preferences. Consultee can either actively persuade a consultation or ask for system recommendation. Our matching system will be based on the information displayed on the user profile, e.g. Years of study, major, etc, to recommend a consultation for users.

Apart from asking for system recommendations, consultee can actively set up a consultation by clicking on consultant's profile in the forum. User can decide which consultant they want to choose based on the consultant's profile. We predict most consultee found their consultant in the forum post.

3.1.4 Payment system

Payment System allows users to pay for consultation by their preferred online payment system like Apple Pay, Samsung Pay, PayPal and more. After the Matching System recommended a consultant to the user, or users find a suitable candidate in the forum. Users can decide whether they are satisfied with the consultant (Through reviewing consultant profile or chat messages in DM) and want to start the consultation or not. If the user decided to start the consultation and pay the consultation fee, user can make an official request for the consultation in chatroom with consultant or on the consultant's profile. Users will pay the consultant to our system first, then after deducting the handling fee, we will pay the consultant through our system. Only crowned users can access the payment system.

3.1.5 Chatroom

We have chatroom to accommodate to our services. This service is to create a private place for users to do normal chat. Moreover, it can also be used for the consultation service with the availability of payment function. Text messages as well as documents are allowed to be transferred inside chatroom.

3.1.6 User Profiles

As a user in the system, user profiles can be separated into two views, My User profile and Other User profile.

- **My User profile**

This is like the profile function in most of the forums. In the profile, users can view their basic information, and in the options panel, users are able to change nickname, password, and other security options. In addition, users can choose to opt in to our consultation service, in which the user needs to provide necessary information to us for matching purposes. The status of conducting consultation will also be displayed on the user's self profile.

- **Other Users' profile**

Users are able to view others' basic information, and there will be a way for a user to start a conversation with another user, if the user is a participant of the consultation program, the user can also rank his/her performance after the consultation.

3.2 Database

In this application, we need to store a large amount of data, including:

- **User database**

This database stores the data of the users, including their username, name, email, consultation status, personal description, etc.

- **Posts database**

This database stores the content of the posts, as well as comment and the tags of the posts.

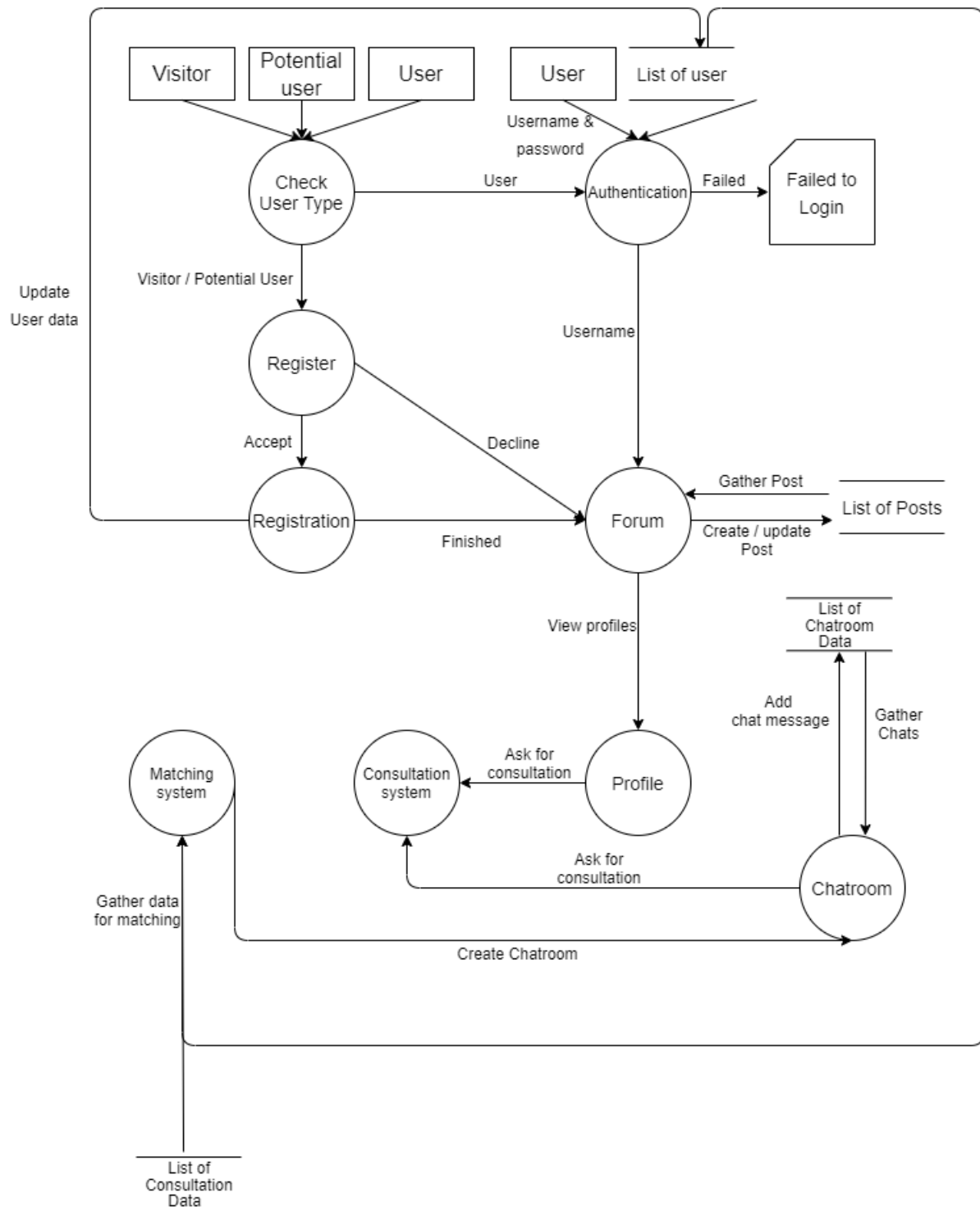
- **Consultation data**

This database stores consultation status of all users and the acceptance and decline of matching suggestion for the consultation service (for the optimization of recommendation in consultant).

- **Chatroom Data**

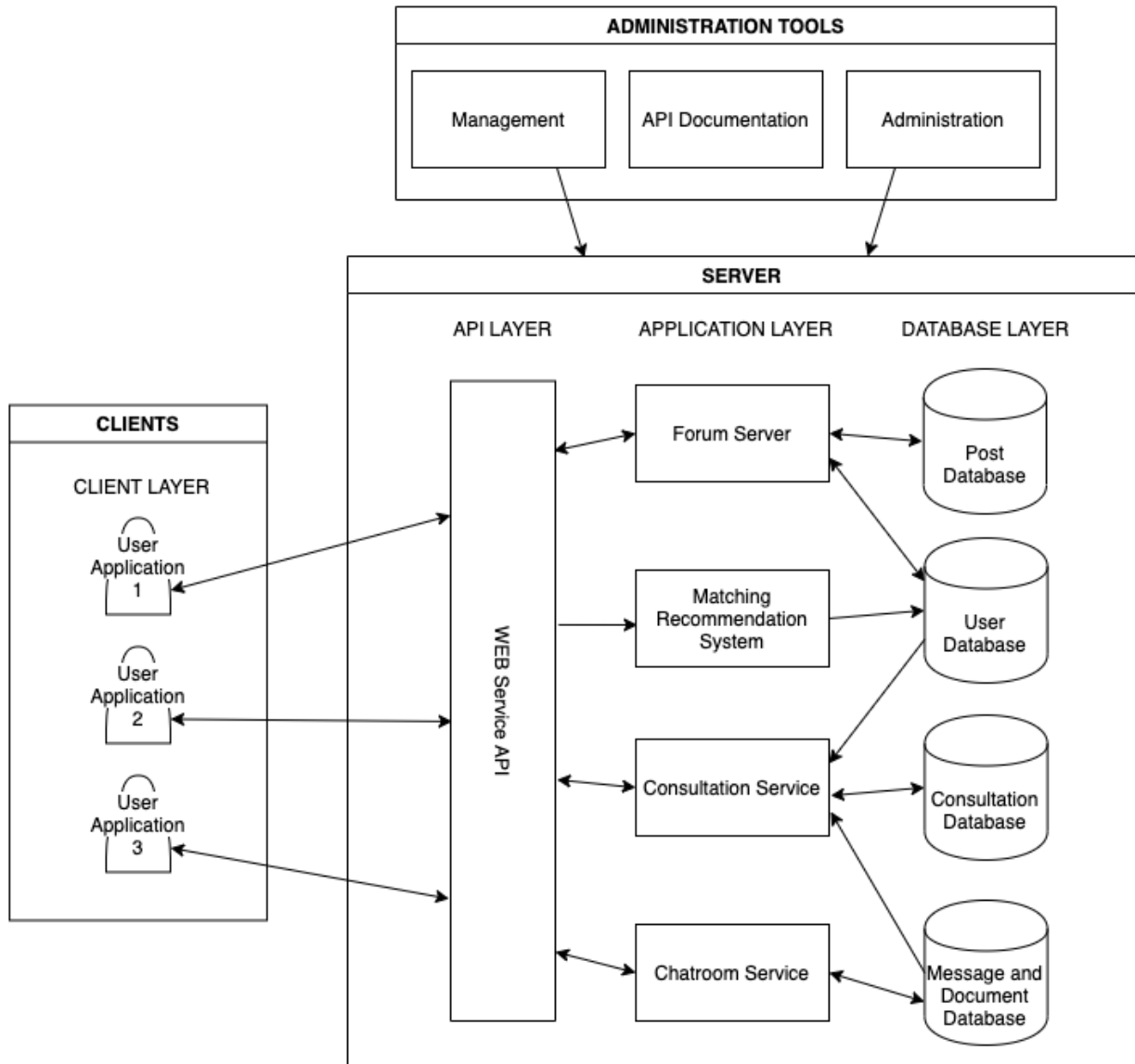
This database stores the message content and document transfer between different users.

3.3 Data flow diagram



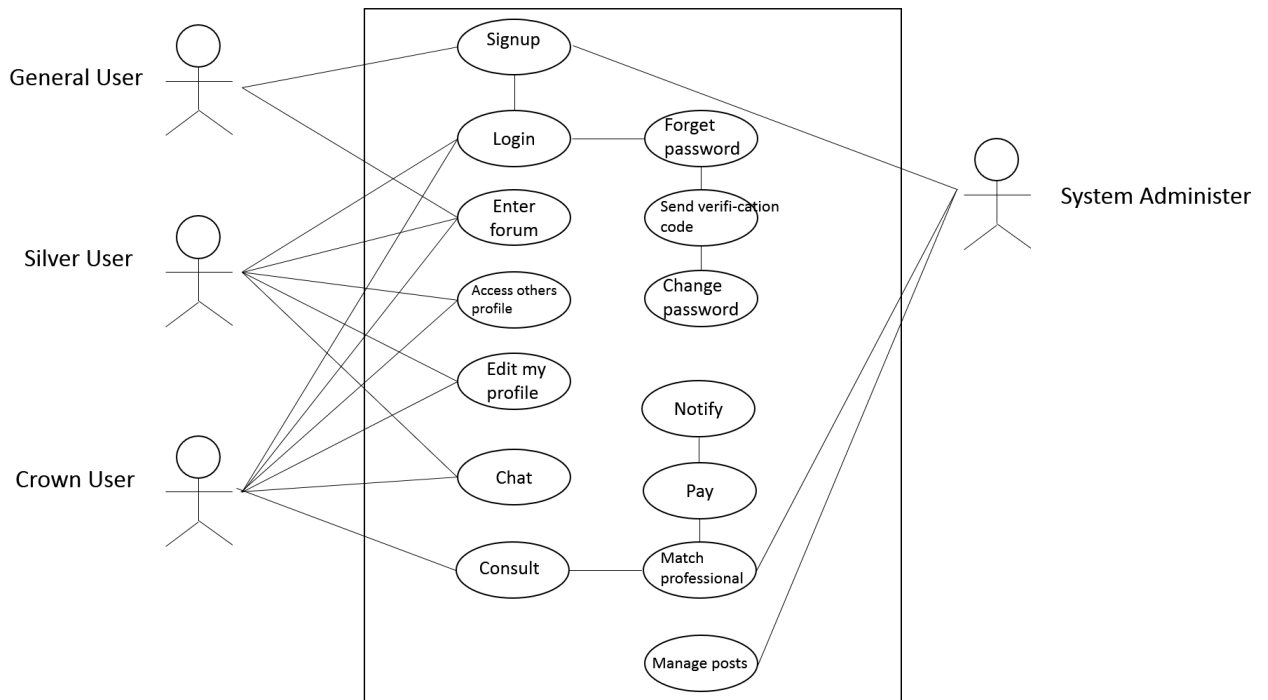
4 System Architecture

4.1 Architectural design



4.2 System Components

4.2.1 Use-case Diagram



- **General users**

General users can choose to sign up. Before signing up, they are only allowed to view posts in the forum. After signing up, they can log in to their accounts and become either one of the two use cases below.

- **Silver users**

Silver users are users who have signed up but do not intend to join the consultation service. They can log in their accounts, view forums, access others' profiles, edit their own profiles and also use the chat function to send private messages to other users. In the forum, they can leave comments, give reactions to different posts. If they forget their login details, they can request to change their password. They can change the password after receiving the verification code.

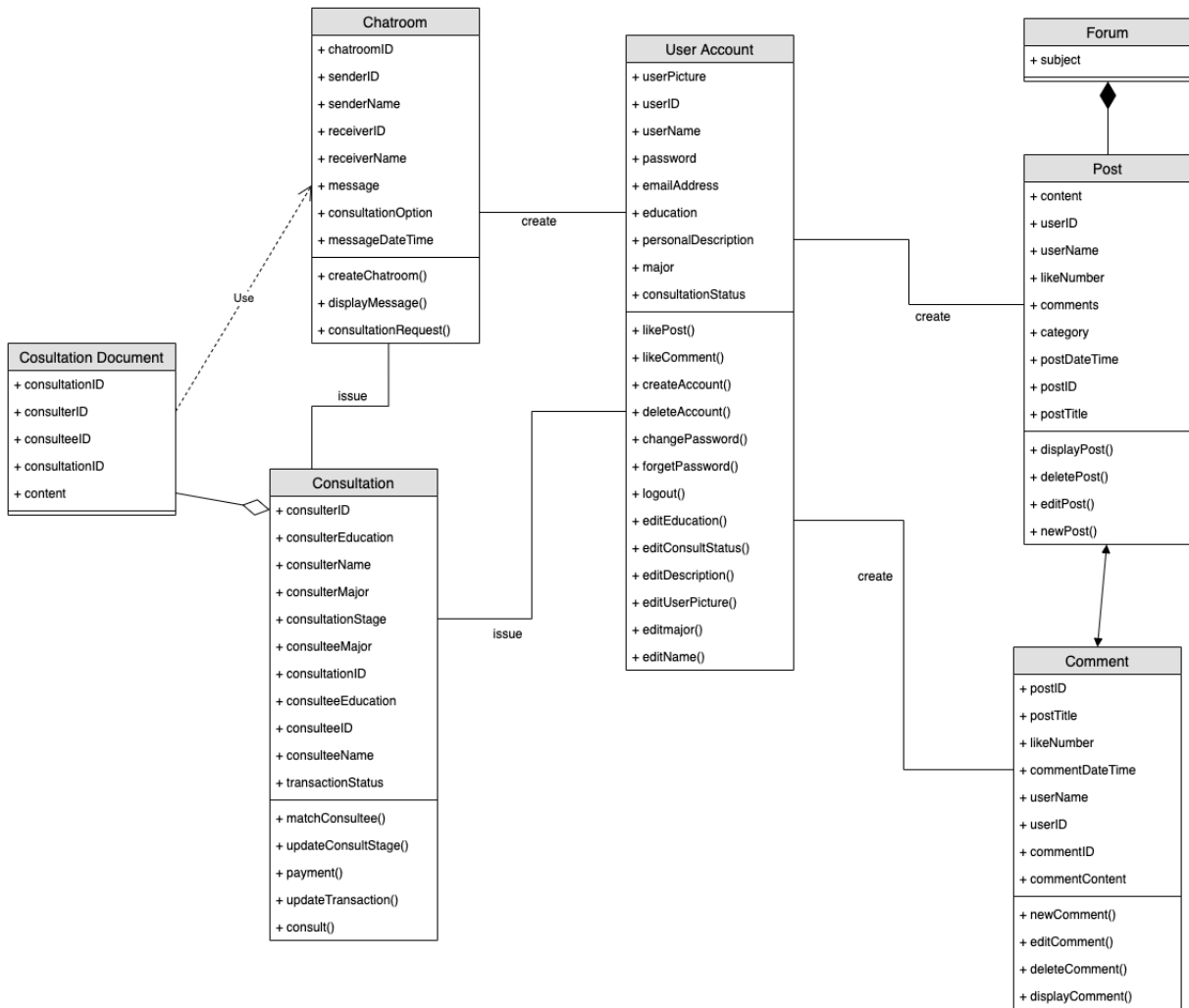
- **Crown users**

Crown users can do all the things silver users can do. Additionally, they can join the consultation. If they request to consult professionals, the system will match a professional, who is also a crown user. If the user started an official request of consultation and completed the process, he/she need to pay the price that is agreed upon by them previously. After the payment is finished, a notification will be sent to the user.

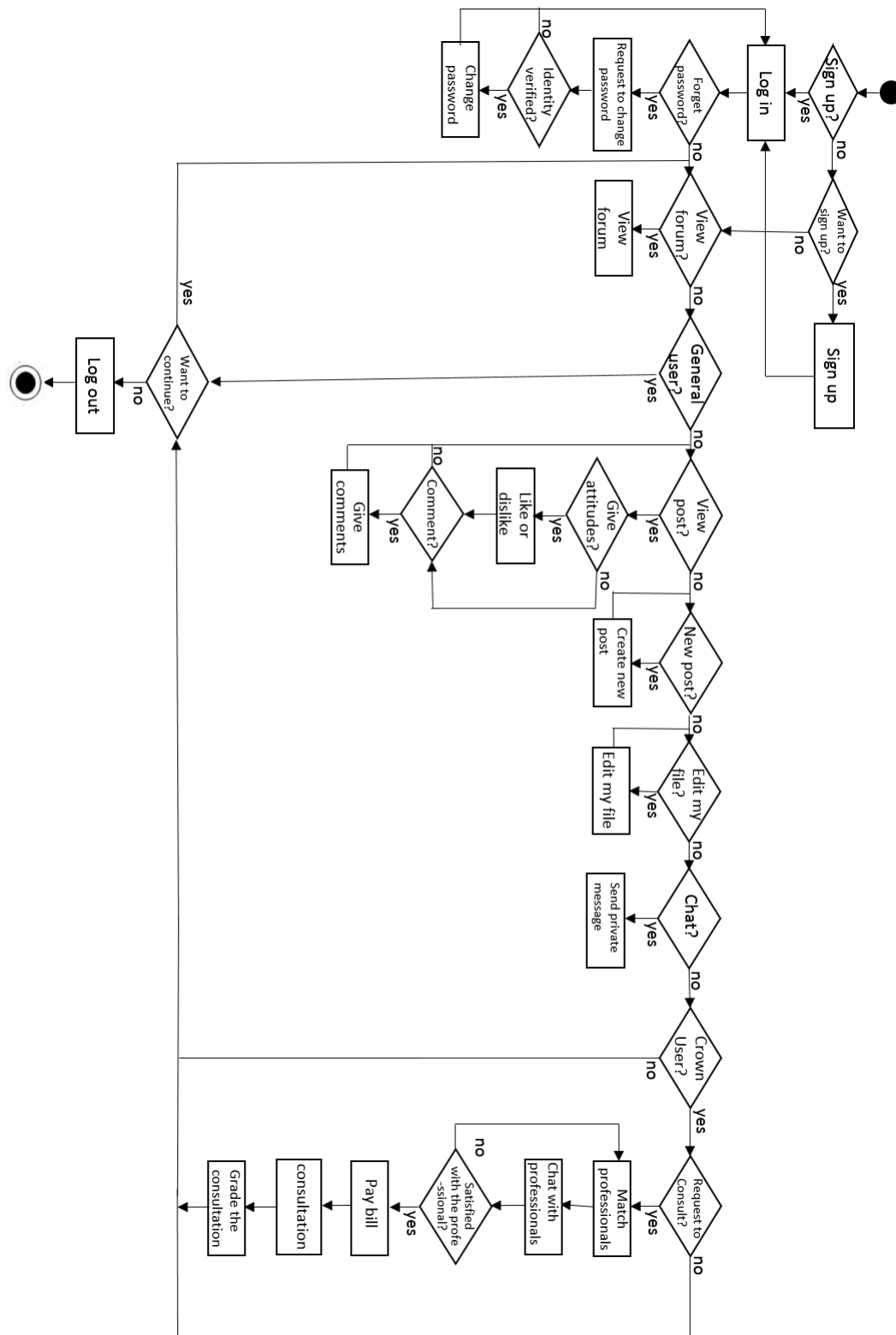
- **System Administrator**

When general users sign up and create a new account, system administrator can store their information into the database and manage their accounts. In the forum, system administrator will help monitor the posts. Posts that are regarded as inappropriate, i.e. hate speech, racial discrimination, insulting words and etc., will be removed. If the crown users request to consult professionals, the system administrator will match a professional for him/her based on the built-in matching algorithm.

4.2.2 Class Diagram

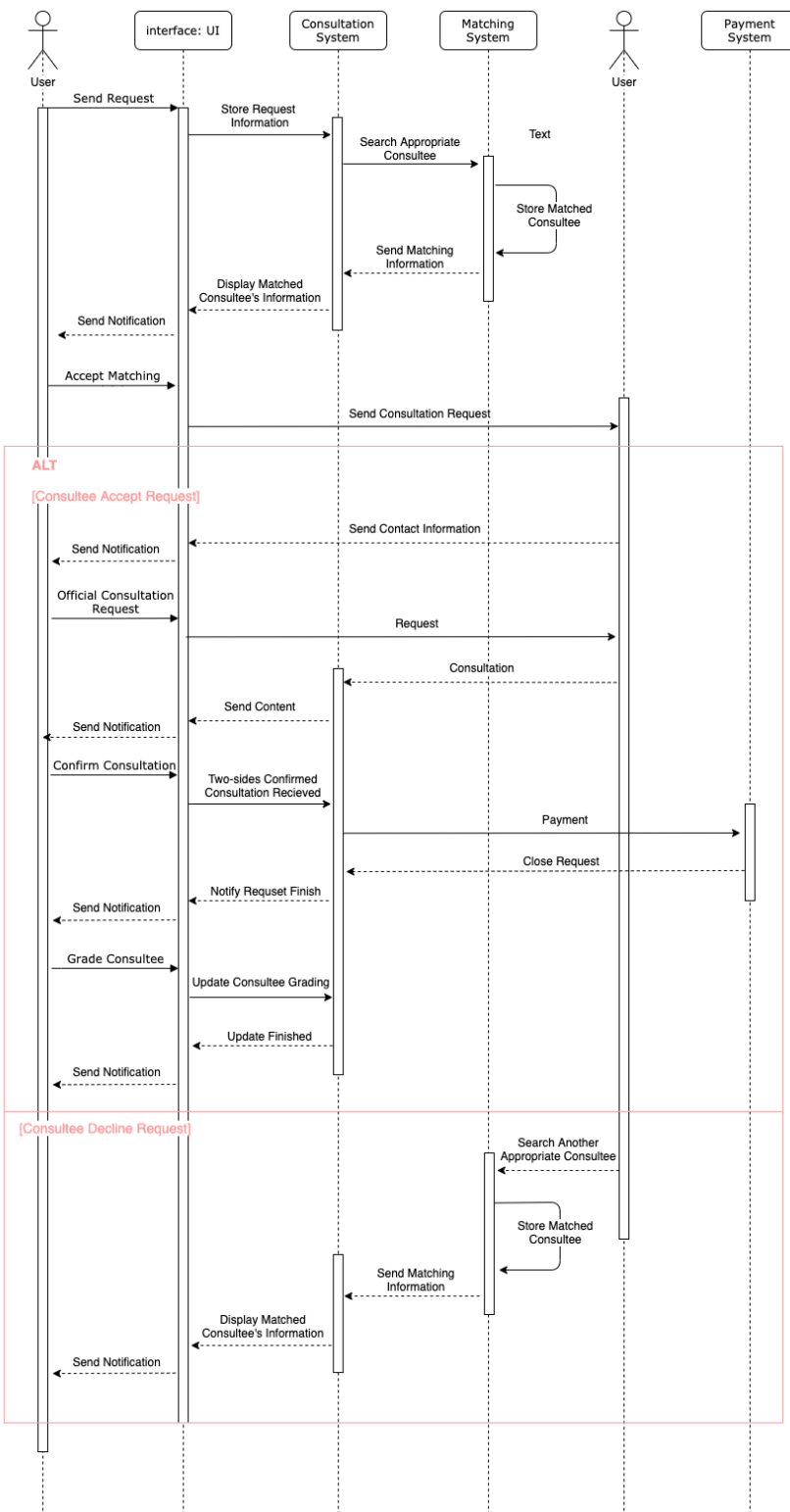


4.2.3 Activity Diagram

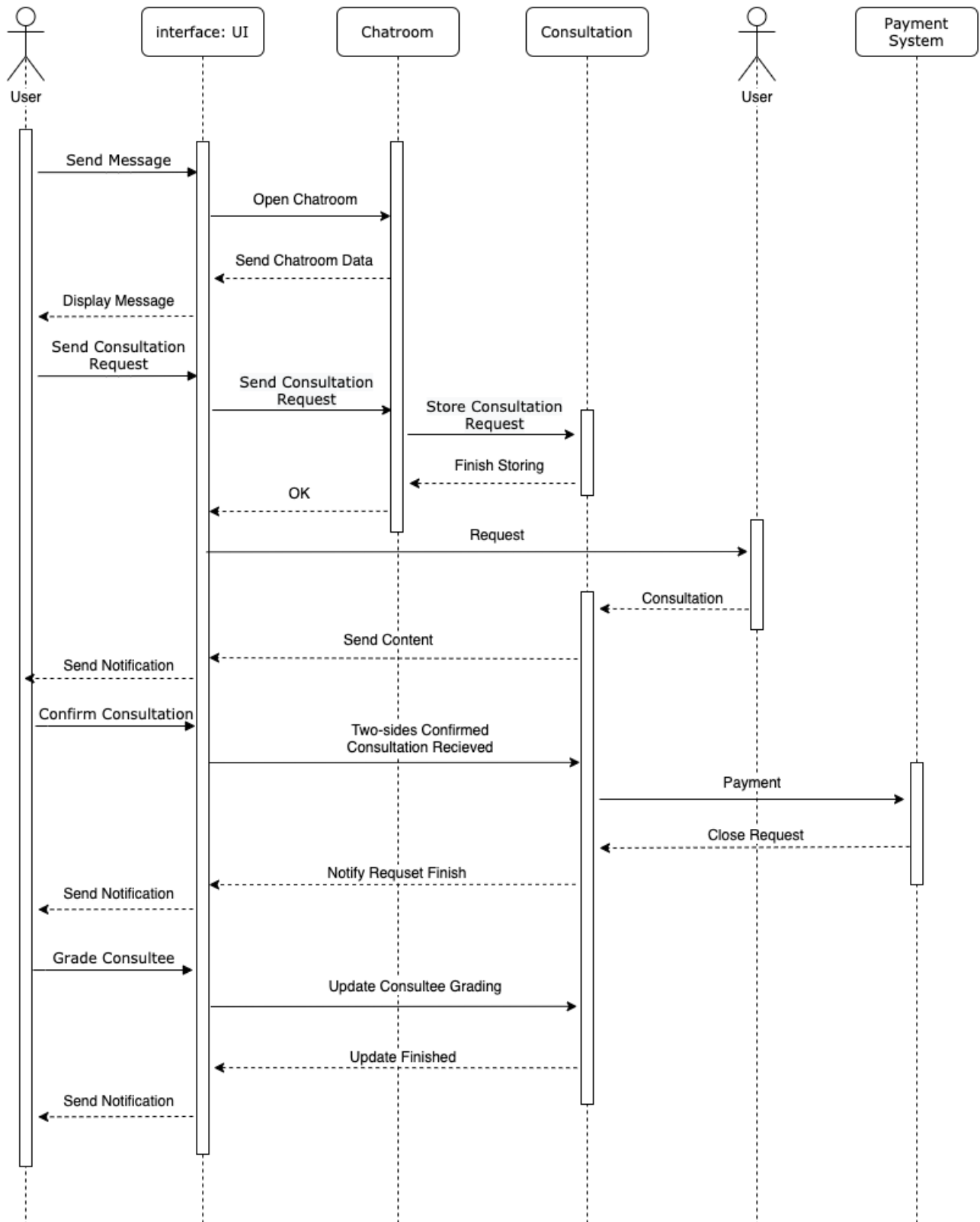


4.2.4 Sequence Diagram

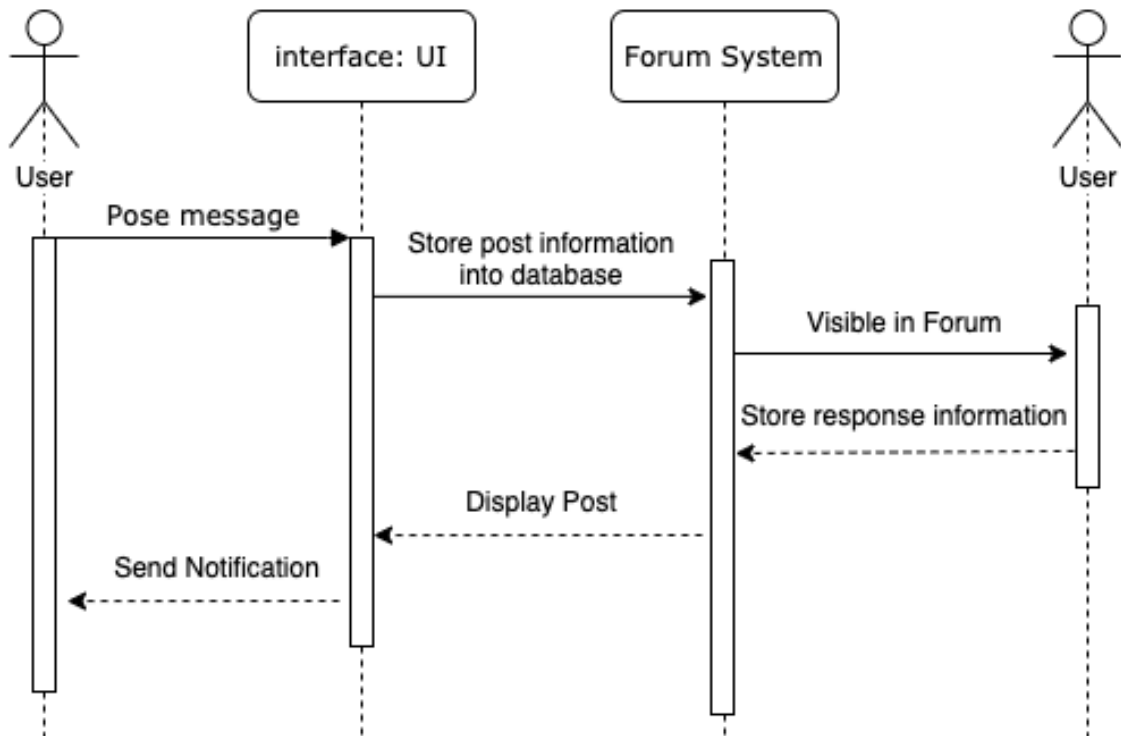
4.2.4.1 Matching to Consultation Service



4.2.4.2 Matching to Consultation Service



4.2.4.3 Forum



5 References

[1] “大專生選科與升學資訊調查”, Upload.breakthrough.org.hk, 2020. [Online]. Available: https://upload.breakthrough.org.hk/ir/Research/45_Further_study_information/. [Accessed: 12 - Mar - 2020].