CSCI3100 Software Engineering

INITIAL DESIGN OF

JusTeam

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OUTLINE

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Sequence Diagram of System Component

1 INTRODUCTION

1.1 Project Overview

This project aims at providing users a platform to team up finding travel companions, seeking project members, forming study groups… JusTeam provides an integrated procedure to help users finding the desired team-mates. Its searching feature can help you locate those already initiated activities around you easily and accurately. If you haven't made up your mind yet, the recommending system powered by machine learning may give you some advice. After you decided to join a team, the in-team communication, and a planning system can greatly ease the difficulty of preparing for the activity. Worried that you may encounter free-riders? No concerns. Using the anonymous rating system, you can view all team-mates' rating before joining, and you may rate your team-mates after the activity. Finally, the experience posting system will enable you to see others' experience and use it as a guide to set up your own exciting activities.

1.2 Objective

This project is designed to behave like a bridge connecting those who need teammates with the same interest and need to finish a task or enjoy an activity in the group. It aims at providing a solution to organizing a group activity and sharing the experience. During the activity, the application would prompt the schedule and the progress both textually and visually. Meanwhile, it allows users to share experience with each other. The rating system can prevent the loss of trust between teammates. We could also help users find their groups by providing smart recommendation tailored to the users' appetite.

1.3 Expected Customers and Market

Nowadays, increasing number of students in Chinese University of Hong Kong (CUHK) encounter the problem of forming a project team because of the diverse cultural backgrounds and social circles. Students with a relatively smaller social circle (such as exchange students) even have fewer friends to have fun. To solve this problem, we come up with this project.

Our project is to benefit following groups of customers:

Undergraduate/postgraduate students of CUHK who a) encounter problems with forming a project team during their academic life b) want to find mates to spend an enjoyable time (e.g. organizing outdoor activities) c) want to make the whole schedule

of the project/entertainment activity nicely ordered.

It aims to be a professional assistant to students, make them feel convenient whenever grouping a project team or organizing an activity. Besides, it can also be a more specialized platform to arrange a schedule of the team, contact with teammates when comparing with traditional social media applications such as WeChat and Facebook.

It has a large potential market. We can provide entertainment information, which is useful to arrange their activities, to customers, then collect an agency fee from business companies. In addition, expected customers cannot just limit to CUHK students, it can be students in other institutions.

1.4 System Features

JusTeam mainly consists of three functions: team launching and joining, account rating, and experience posting. Team launching and joining is the main function of Justeam which enables its customers to find someone with the same idea online whenever they want to hike, join some academic matches, or just eat outside by launching a team or just joining a team created by others. Account rating is a system which will give each account a score according to the performance of each customer to give the users who have already been in a team an idea whether to prove someone's application to join the team. Experience posting allows users to post pictures and words to share their experience with the team. People can see experience posted on the main website as well.

2 BACKGROUND

Speaking of teamwork, one can always think of "one plus one is more than two". However, many university students have annoying experience with free riders and incapable leaders. To maximize the benefit of collaboration, suitable partners, and efficient communication is a must. Whatever academic or for leisure, groups with mindlessly picked members and ill-organized plan often leads to free riders and schedule failure. JusTeam, created for different teaming purposes, aims at pairing up the suitable teammates, strengthening planning and execution, and building communities to share the experience.

Though teaming can be realized by existing social network services like WeChat and Facebook, JusTeam is cleaner and more efficient. It categorizes activities into general types and offers comprehensive templates for teaming and schedule planning. With the help of team-based notifications, teamwork digests can be delivered smoothly without garbage information.

Moreover, JusTeam optimizes teaming process by expanding users' social network. Besides sending invitations to friends, potential partners can be found via team/user searching, even if they have completely different backgrounds. By adding friends, users can follow the new activities of trustworthy leaders and get inspired. After team formation, the precious experience can be shared by posting to team timeline, and all teammates will be rated, which prevents freeriding and promotes cooperation. Personal profiles can be enriched by users and automatically updated with teaming history, making active users more likely to be chosen as team members. With such profile, JusTeam provides team starters with lists of recommended teammates, making the teaming process easeful and personally tailored.
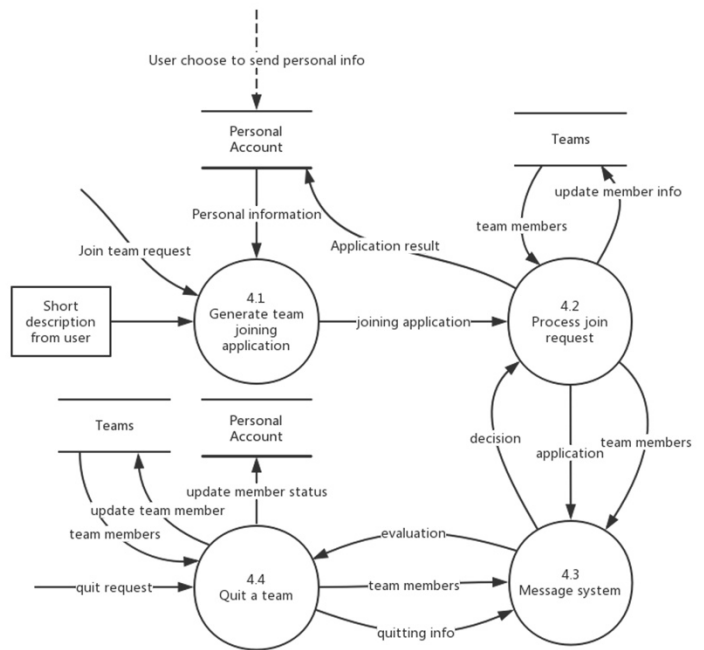
3 SPECIFICATION
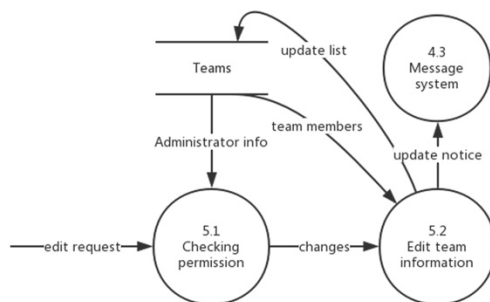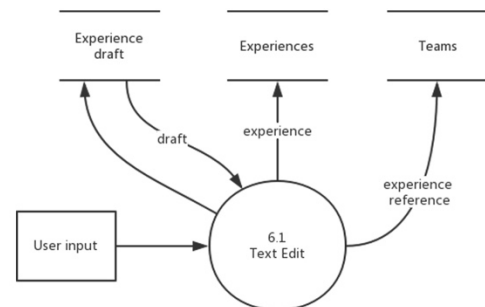
3.1 Data Flow Diagram (DFD)
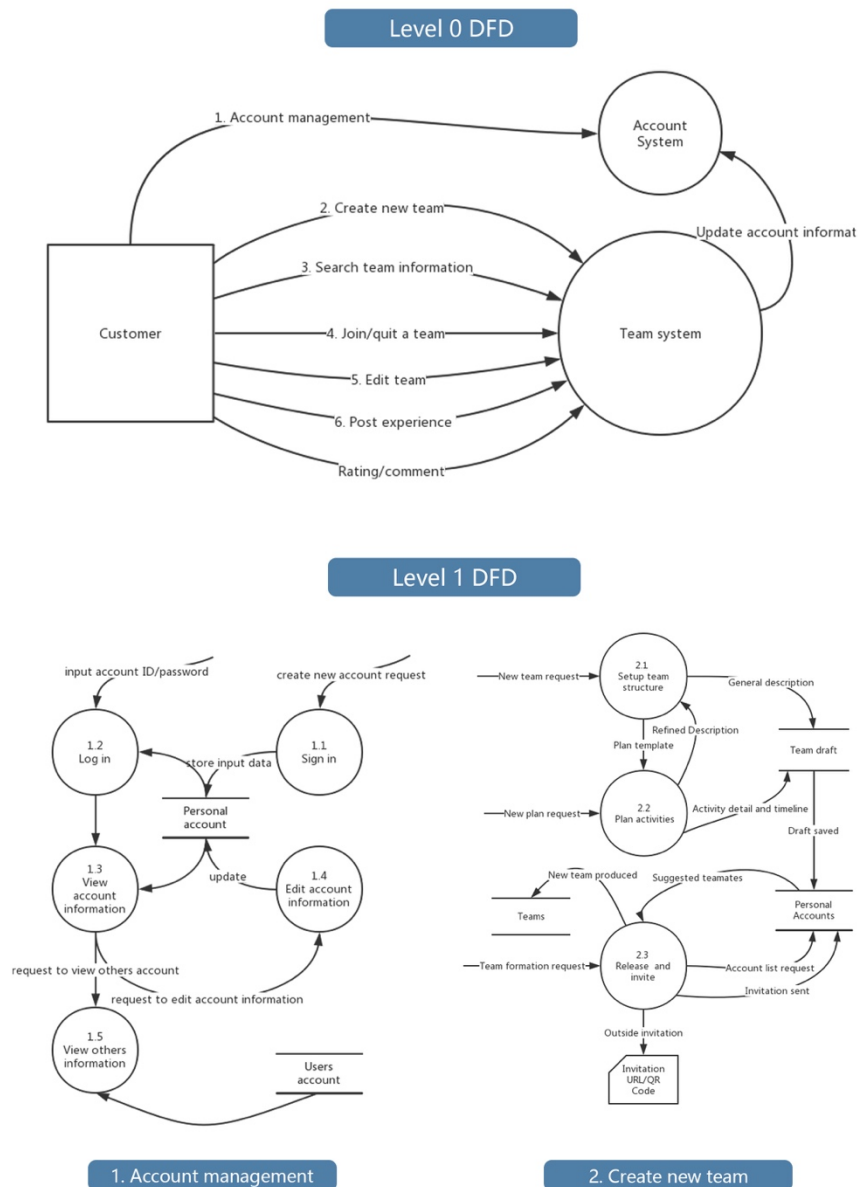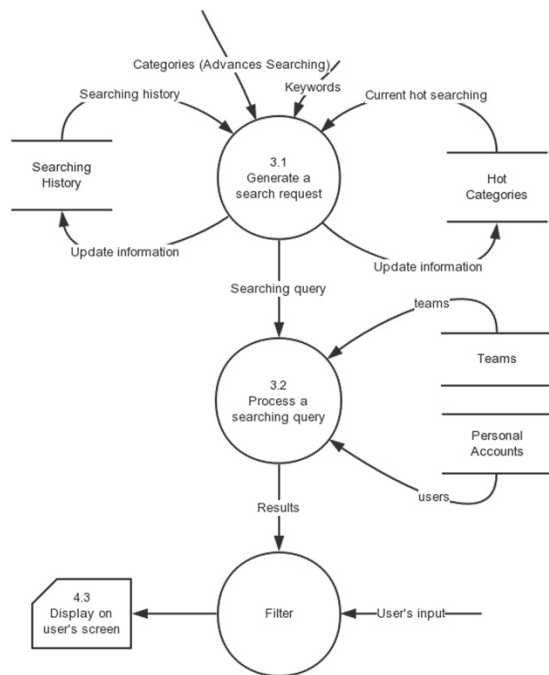
3. Search team information

4. Join/quit a team

5. Edit team

6. Post experience

3.2 Complete Features in Detail

3.2.1 account management

Users can sign in his/her new account by inputting email addresses, which can be used for verification of changing a password or getting further notifications about the team activities. After signing in and logging in the personal account, users can view their personal account information (including personal information and information about the teams they have joined in), manage their own account by updating personal information and managing teams which were initiated by themselves.

3.2.2 user interface（UI）

Our software has a user-friendly interface. For non-login users, we just allow them to view the public part of team information and personal information of others. Users can make easy choices by clicking buttons on the top bar and icons or contents below. Besides, users can view it on different devices, responsible UI displays suitable on different display ratios by changing the CSS format style. What's more, modelized experience posts and teams' information placements, make an arrangement of information aligned, which shows a neatly and user-friendly UI to users.

3.2.3 search

The search function will return a content list according to the keyword and requirement typed in by the users. Related teams, accounts and posts can be filtered by the will of users.

3.2.4 create a team

With JusTeam, people can find teammates by launching a team. Users need to type in some pre-requisite information such as the maximum number of teammates, the category of the activity and the title of the team the time they create a new team. Users are also allowed to type in detailed information such as the description of the activity and the request for the applicant. They can also edit such information later.

3.2.5 join a team

This function allows users to join an existing team activity. The users are required to send an application with a short description to authorized team members. After being approved, the users can access in-team communication and team editing functions.

3.2.6 post system

This function allows users to share their experience. The posted experience can be attached to a specific activity's timeline and be viewed by the public. The experience can also include pictures and videos. Posted experiences will be shown on other users' dashboard and can be accessed via team or personal information page.

3.2.7 account rating system

In order to prevent some individuals breaking their promise and deviating from their responsibility, also enhancing the trust among group members, we design a rating system which is a strict regulation. Each account will always hold a "Credit Rate",

which is exposed to the public. It can affect the users' reputation. At the same time, any activity has a baseline on the rate, which leads to rejection of some applicants. There are some factors dominate this rate. Everybody can rate their teammates anonymously after the activity finish. Meanwhile, some behavior violating the regulation (for instance, force quit of a formed group and comment with inappropriate words) can also lead credit deduction.

3.2.8 invitation sending system

The application is also able to satisfy the need with some users to group with familiar people. It provides an "invite" button, by clicking which the invitation is sent. To improve the efficiency, the receiver will take attention not only when logging into our system. The notification will be sent to his binding services (for instance, email and social media like Facebook) as well. Meanwhile, we also provide a function to invite potential users through the medium as above.

3.2.9 notification

The notification module on the dashboard interface keeps users informed of team activity digest and information updates, invitations from other users, and new posts sent by friends. Reminders can be set to ensure well-executed schedules.

4 SYSTEM ARCHITECTURE

4.1 Architecture Diagram
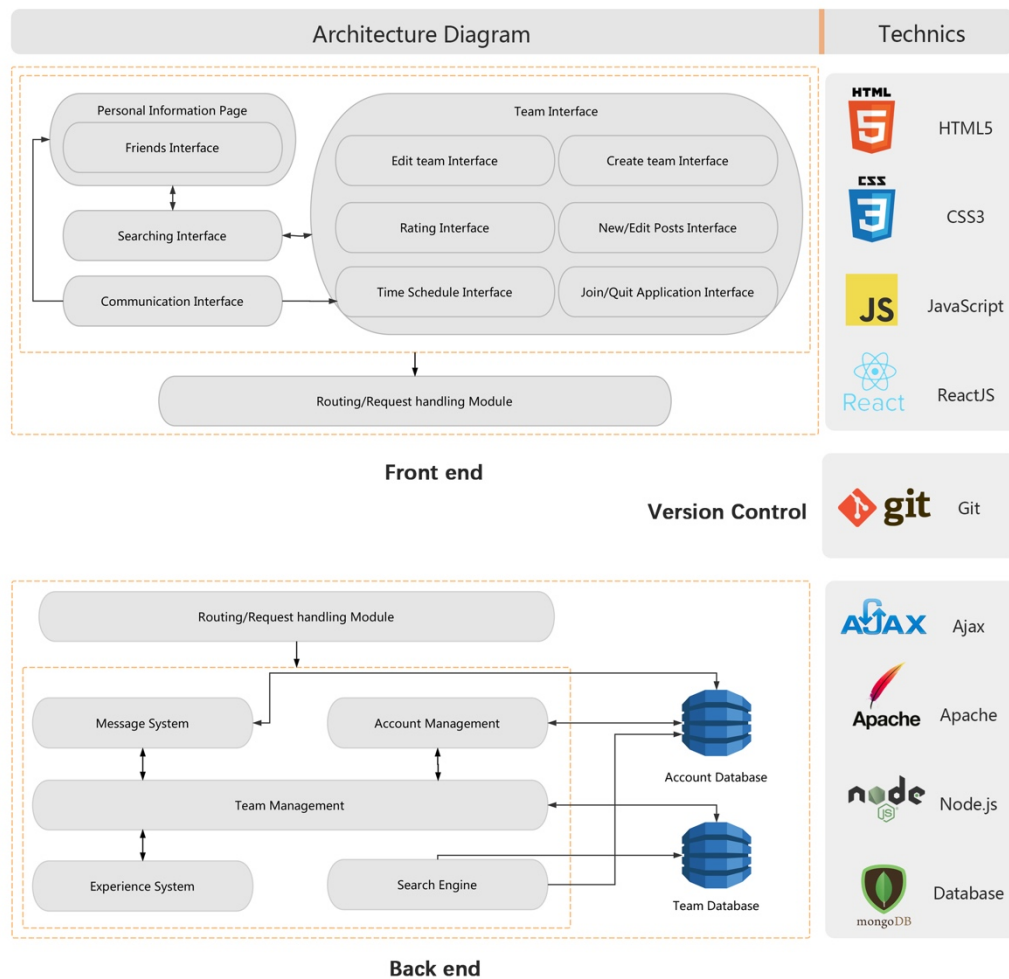
4.2 System Components

4.2.1 notification

All team information updates, invitations, activity digests and reminders will be shown to users in this module. Users can view the notifications on the dashboard after login. This module directly interacts with account database, team database, edit team information system, join/quit a team system, and experience posting system.

4.2.2 search for information

The application provides a powerful function for information searching. The searching engine support keyword input, searching history and current hot category as well, to satisfy the need of users. It connects to nearly the whole database, including team information, personal account and experience post/comment.

4.2.3 create a team

This component will allow users to create a new team while required information is provided. This component will mainly interact with the team database, searching engine and etc.

4.2.4 join/quit a team

This module processes user's request for joining/quitting a team and sends a message to team members. After a decision made by the team, this system handles the application result, updates account and team status, then sends a message to inform the result.

4.2.5 edit team information

With this module, team leaders can use an editor to modify the types, keyword tags, descriptions and schedules of existing teams. This component mainly interacts with team database and notification system.

4.2.6 post experience

This component allows users to post their experience. Users can choose to attach the experience to either a team or an event. The function will directly interact with the post system in the back-end. Access to the team database and account database may be required.

4.2.7 rate your teammates

This component allows users to rate their teammates after the team activities are finished. This function will mainly interact with the account database and the team joining the system.
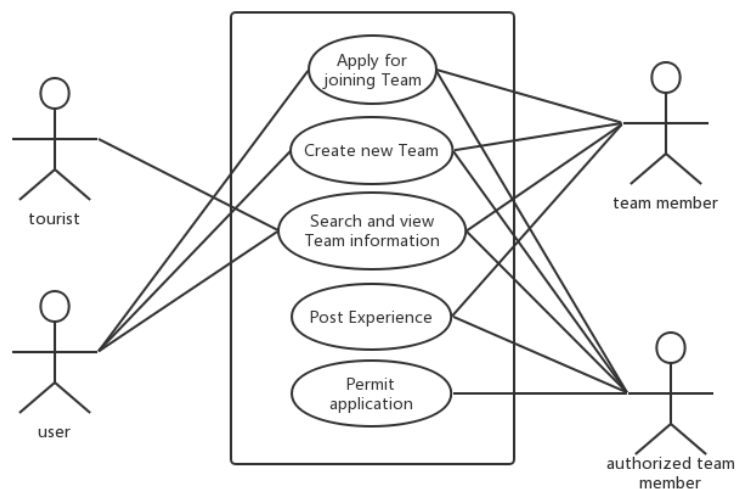
4.2.8 edit personal information

The application allows and encourages users updating and showing their personal information in detail. The information could be modified by the user themselves. It correlated with the personal account information.
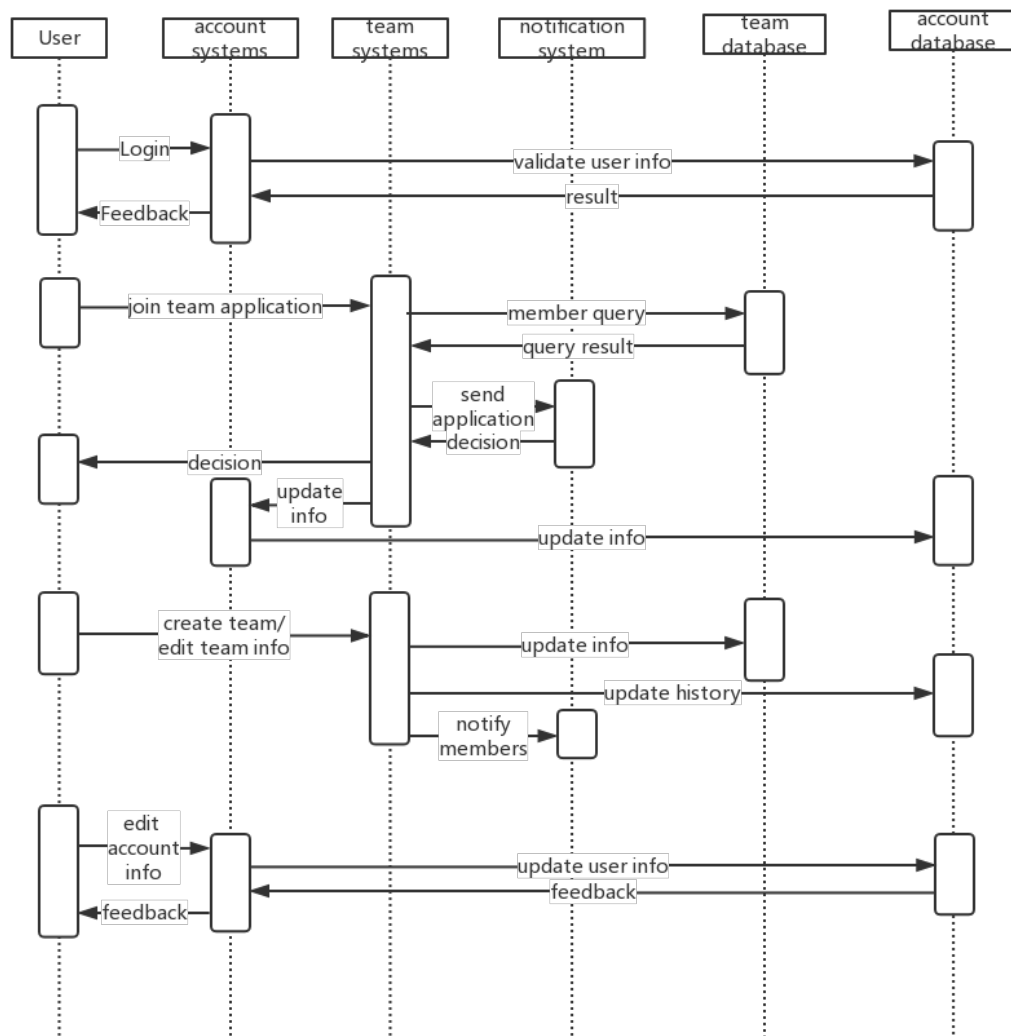
4.3 Description of Major System Components by UML

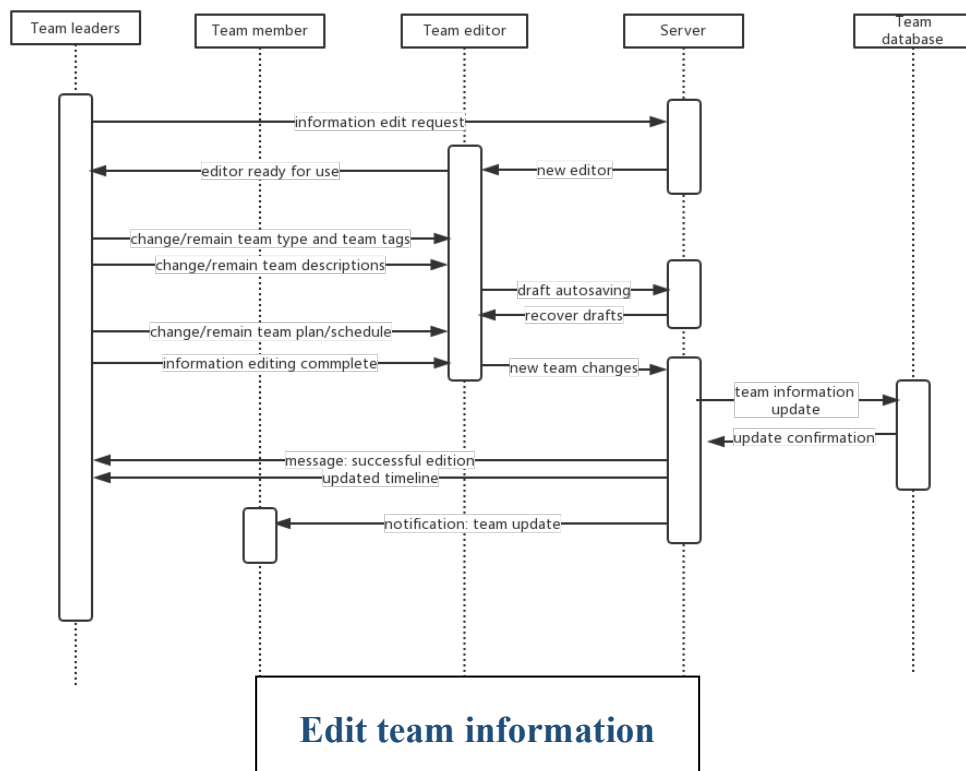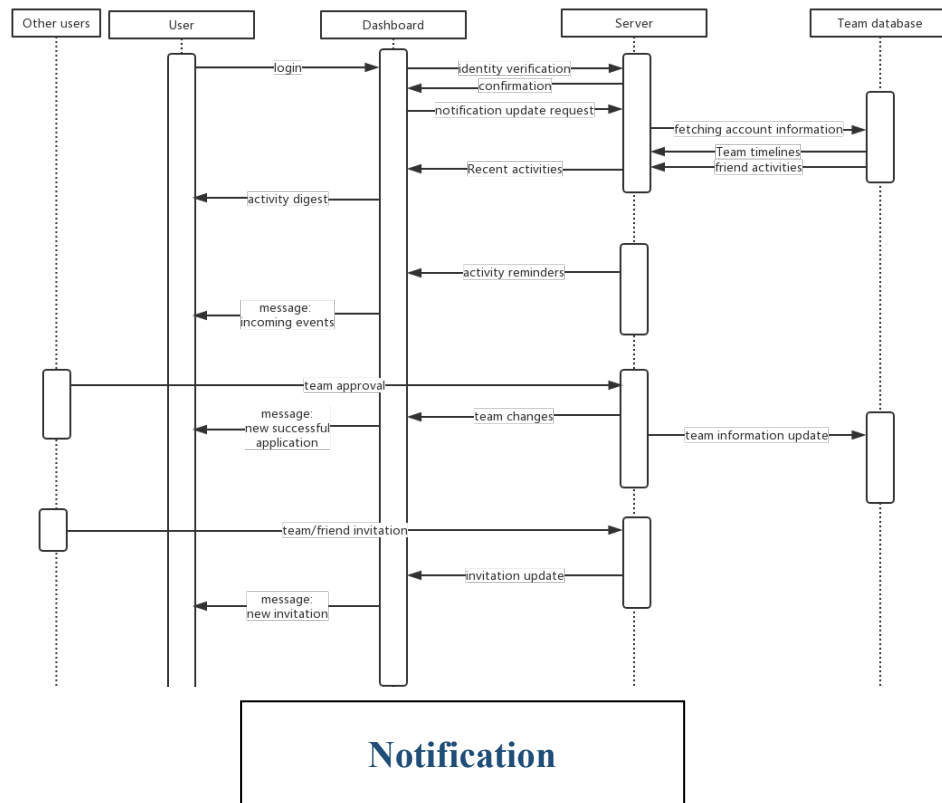### 4.3.1 class diagram
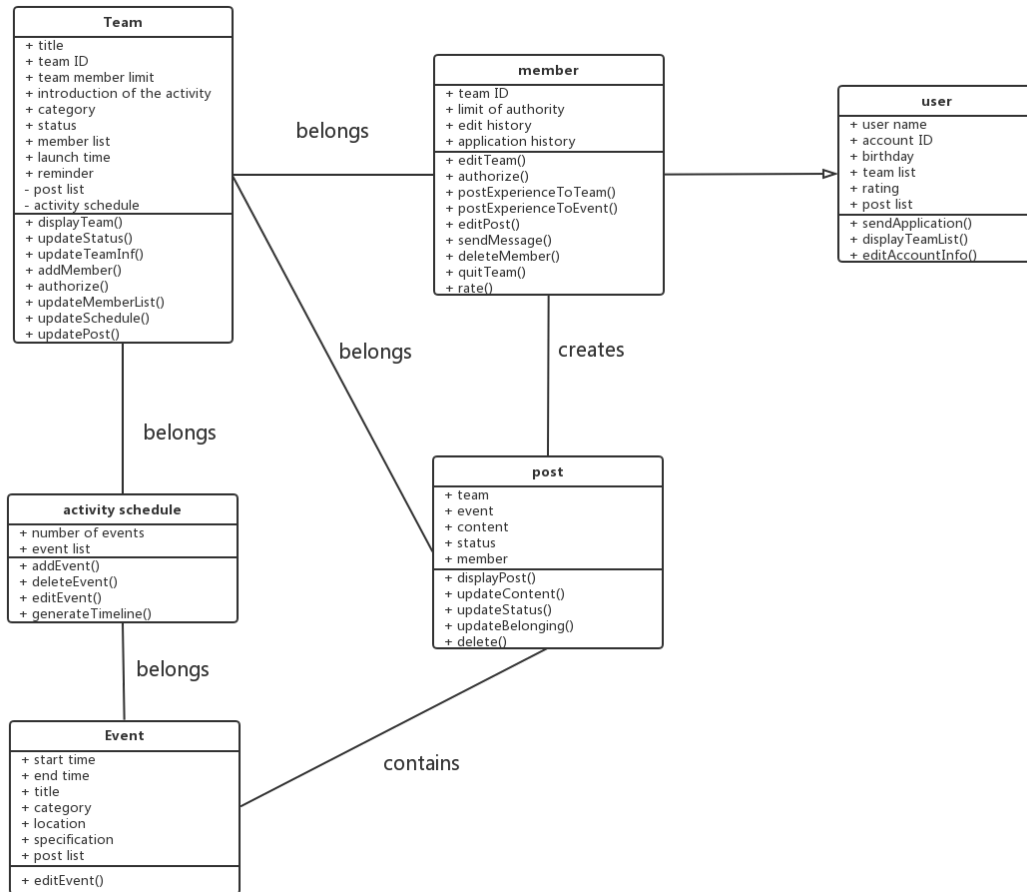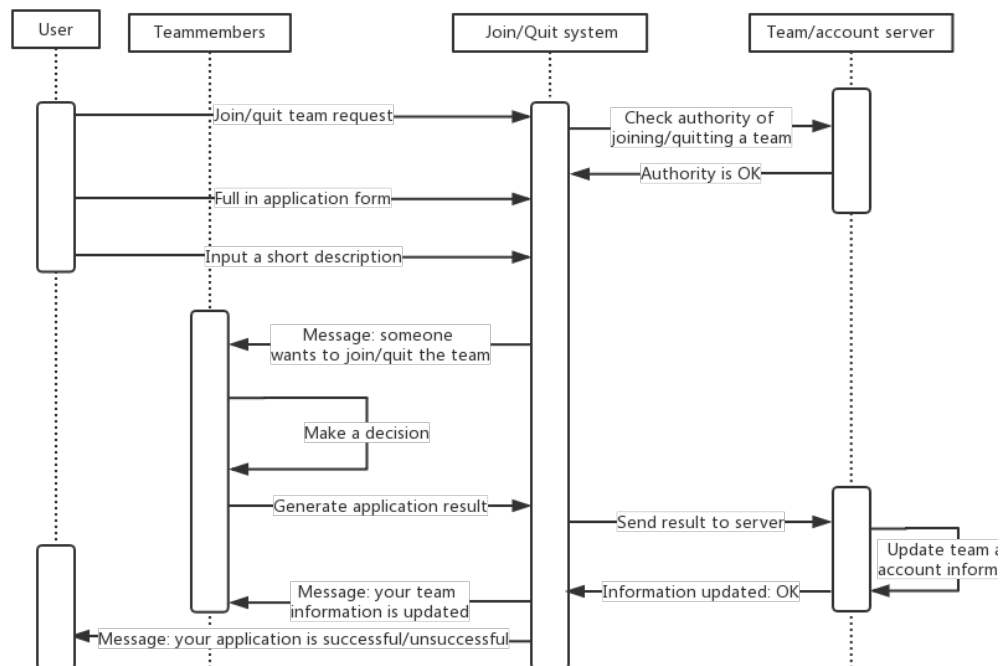

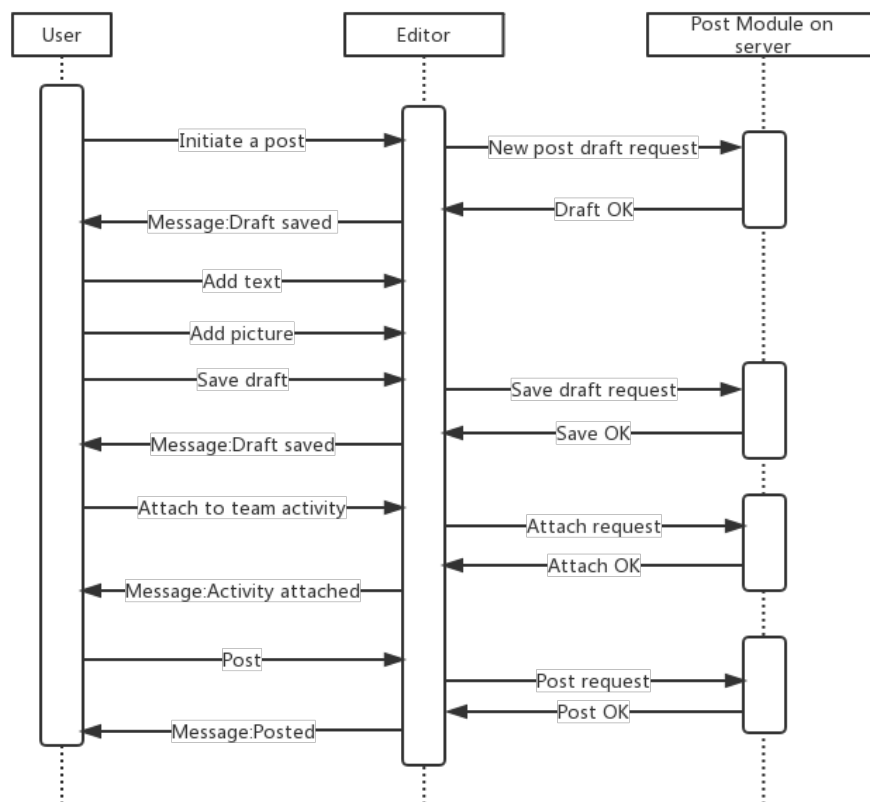### 4.3.2 use-case diagram

4.3.3 sequence diagram

APPENDIX

Sequence Diagram of System Component

Notification

Edit team information

Join/quit a team

Post experience

Create a new team

Account information update

Rating System

Search engine