Team5

Android Instant Messenger(AIM)

Fangyuan hou, Junyu Chen, Yayang Ding, Deen Liu, Jiazhi Lu, Haoyang Yuan

1. Problem Statement

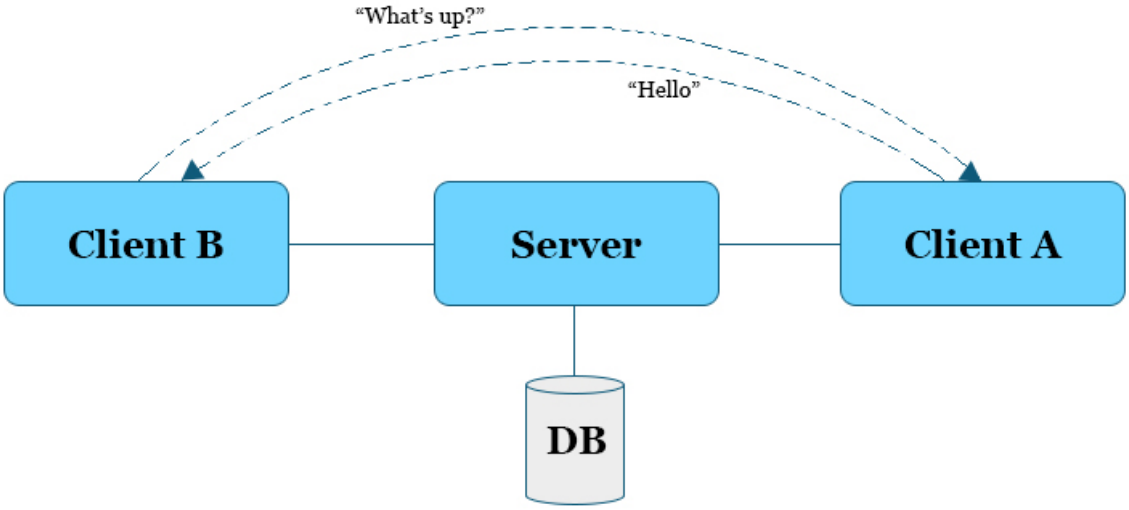
Nowadays, smartphones have played increasingly important roles in people's daily life, calling another one's cell phone number is not the only way to communicate, lots of mobile applications featuring instant messaging have shown their popularities. to make a reliable, easy to use software that can send instant message is needed to further facilitate communications between people.

2. Background Information

There are times when it is inconvenient for people to pick up cell phone calls, or there is no cell signal nearby but Wi-fi is available. At that time, an instant message application will be very helpful. And also using the application can get the latest information about the friend. Nowaday, Android is sharing nearly 80% in the smartphone market.

3. Environment and System Models

Based on Android platform, the system consists of two subcomponents: the client side and the server side. one mobile user, as a client, sign up and sign in from his or her android mobile device. then the user connects to the server and sends his or her request to the server and waits for response. Information of a user will be stored in a database in which information can be accessed and retrieved whenever it's needed.



4. Functional Requirements

4.1 Interaction between Client and Web Server

- ○ Client can send post data to the web server and store in the Web Server
- ○ Client application can receive a response from the server and display the results
- ○ Client can send the instant message to other Client through Web Server

4.2 Interaction between User and Client

- ○ User can enter in a name, gender, birthday and other personal information into the client application and click an upload button to send to Server
- ○ User can find other Users and add them as friends by entering the ID of other Users
- ○ User can search some relevant Users through some personal information
- ○ User can send verbal message to other User by entering the sentence into the textbox and clicking the SEND button
- ○ User is able to look over the chatting record with his/her friends in the Client
- ○ User is able to check the personal information of his/her friends in the Client

5. Non-functional requirements

Platform

Our project will be built on Android platform, therefore we can make use of rich Android API.

Performance

Since server plays an important role in the communicate between two clients and need to deal with other operations, the server should be able to handle an abundant amount of requests from clients at the same time.

Response time

The web server will give the real time of the message sent while the message is sent from the Client. Web server will send the message to the target Client immediately. The data transfer via server is intensive and the response time spent on the translate in the internet.

Reliability

Since our software is for instant messaging, we want to keep our communication reliable. Therefore, we should make sure that there is no disconnection given that user's access to 3G and wifi is good.

Usability

This software is user oriented, so it is important that its user interface is simple and easy to use. we are going to have one panel in which it has all user's friends listed. there will not be unnecessary images or buttons.

Security

The system is used to transfer sensitive data among server and clients, which include the personal information and the private chatting message between Users. So we are going to us acceptable cryptographic protocols in order to ensure the transmission safe while the client is connected to the server.

6. User cases

Case: User wants to sign up for a new account

1. User enters his or her valid username, choose an invalid password.

2. User will enter his or her personal information, some of which are optional, for password retrieval, also personal information can be used in friend search so that this user can be searched and added to other people.

3. as soon as there is no duplicate information in the database, a new account is generated successfully. User will receive a unique ID.

Case: User wants to add a new friend to his or her friend list

1. User login his or her account by entering email address and corresponding password.

2. once the user login successfully, a panel pops up, in which there is a button, on which it's clicked, a new window pops up so that user can perform friend searching functionality by entering correct information of the person user wants to add as friend. Otherwise, user can simply enter the person's email address if it's available to user. In each case, a friend request will be sent to the person user wants to add.

3. Then user waits for response of the request. if the person accepts request, user adds the personal successfully to his or her friends list, otherwise user fails to add the person as a friend.

Case: User wants to send message to one of his or her friends

1. once user successfully add a person to his or her friend list, user can click on the person on his or her list, a dialog box pop up.

2. user can type in whatever message he or she wants to send and click on "send message" button in dialog box, then the message is delivered to the person and will show in the person's dialog box once the person has logged in.

Case: User wants to change his/her profile information

1. user click on his/her profile picture to edit his/her information.
2. user edits his/her information.
3. user clicks on “OK” button.