***Software requirement specification***

**CHAT SERVICE**

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**Problem Statement**

We are planning to build an online reliable chat service that will be used to send messages over a secured channel by the encryption method. The system software of the chat software consists of a three password authentication system along with a secure and a reliable link for the transfer of messages.

Every user will have a login which has to be done at three levels using passwords, Uid and image recognition. The user can only send messages to those who have been added in that user’s account . Every two users will have different encryption keys. This chat will take place over a reliable link.

**Background information**

The system software is based on the issues of security and setting up of reliable chat link between two users using encryption. The problem of security breaching and hacking has become so common these days. Sometimes the companies need to send a reliable piece of information from one user to another. Due to this reason the companies spend a huge amount in order to make their transmission reliable and free from cyber-threats. Our system software aims at all the users (not any particular age group or type). Our software reaches a wide variety of users. It can be used by any user to send a vital piece of information to his/her friend. This software can be used by the government officials, private companies or daily users. Thus the domain of this software is vast.

Prior systems:

Many chat services have been developed in the past like Nimbuzz messenger, AOL messenger but due to their complex algorithms and designs they were not very popular. In these chat services the users got spam messages and any user could send a message to another without knowing him/her. Due to this many spam messages were received by every user and their accounts got hacked if they accidently clicked on that link.

Our system software aims to eliminate this problem by sending or receiving the messages from/to only those users who have been added as friends in their account.

**Stakeholders**

A stakeholder in an organisation can be defined as any group or individual who can affect or is affected bythe achievement of the organisation’s objectives.

Stakeholder can be any person either an individual or a group who can be affected by the particular project or has an interest in the project i.e. the development of the system software.

The various stakeholders involved in our project are:

* Project team members (2 members in our team)
* Software developer and designer
* Project tester
* Project customers (clients)
* End users: Our software reaches a wide variety of users. It can be used by any user to send a vital piece of information to his/her friend. This software can be used by the government officials, private companies or daily users.

**Requirements**

1. **Functional Requirements**:

As we know that functional requirements are the statement of services the system should provide, how the system should react to particular inputs and how the system should behave in particular situations. The various functional requirements of our software are listed below:

* The system requires the user to first create an account on the website in order to access the chat service.
* The user needs to provide a password as well as an image taken by the web camera at that instant. This would enhance the security.
* The user must login into his account after creating an account in order to send messages.
* The user needs to know the user id of a particular user in order to send a request to him and add him as his friend.
* Using the user id the user can search for the particular user and send him a request.
* The other user needs to approve the request for the communication to take place.
* The user can now send a message to the users in his friend list. (The message will be sent in a secured manner using encryption algorithm.) He will also be able to view his message history.
* We would also like to provide a facility for the user to add new friends, view friend list and delete friends.
* We would also like to include a ‘settings’ option for the user in which he can change his password, change the image provided and also delete his account whenever he wishes to.
* Finally the user will be able to log out from his account after sending or receiving the messages.

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| Priority id | Requirement |
| 1. | **Login using user id** |
| 2. | **Capturing the image using the webcam** |
| 3. | **Providing the encryption technique** |
| 4. | **Searching mechanism** |
| 5. | **Adding or removing friends** |
| 6. | **Sending messages** |
| 7. | **Changing the passwords or image** |
| 8. | **Deleting the account** |
| 9. | **Logout mechanism** |

1. **Non-functional Requirements:**

These comprise of the constraints on the services or functions offered by the system such as timing constraints, constraints on the development process, standards, performance and platform requirements such as response time, scalability, usability, security, etc. The various non-functional requirements of our project are listed below:

**Performance:**

The system must be interactive and the delays involved must be less .So in every action-response of the system, there are no immediate delays. In case of opening windows forms, of popping error messages and saving the settings or sessions there is delay much below 2 seconds.

 Also when connecting to the server the delay is based editing on the distance of the 2 systems and the configuration between them so there is high probability that there will be or not a successful connection in less than 20 seconds for sake of good communication.

**Safety:**

Information transmission should be securely transmitted to server without any changes in information.

**Reliability:**

As the system provide the right tools for discussion, problem solving it will be made sure that the system is reliable in its operations and for securing the sensitive details.

**Availability:**

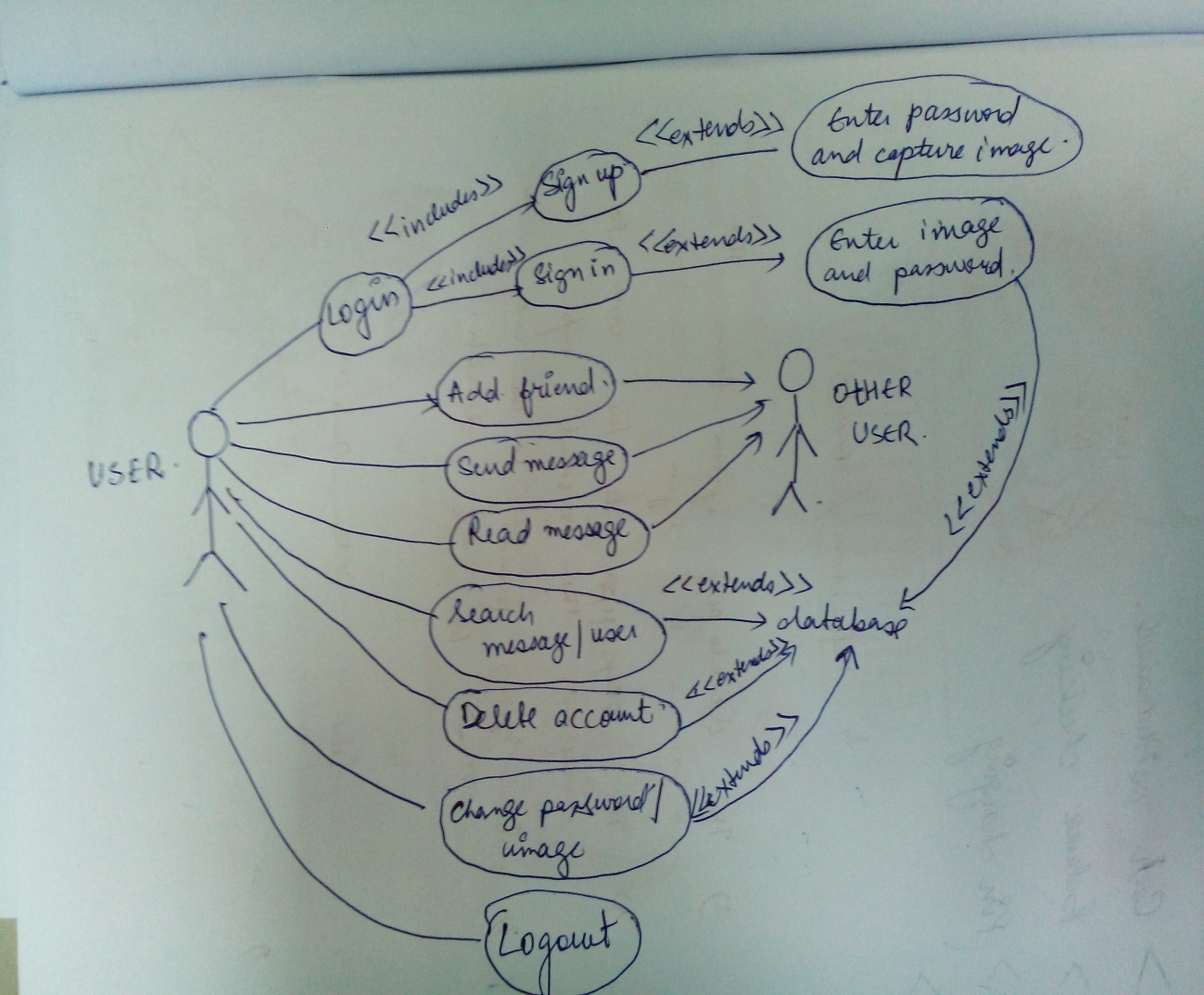
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**Security:**

The main security concern is for users account hence proper login mechanism should be used to avoid hacking. The user id registration is way to spam check for increasing the security. Hence, security is provided from unwanted use of recognition software.

**Usability:**

As the system is easy to handle and navigates in the most expected way with no delays. In that case the system program reacts accordingly and transverses quickly between its states.

**Use case diagram: **