**Design and Implement Chat Application**

Mini project created in course of Software engineering part II

in

Third-Year Computer Engineering.

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**CHAPTER 1: INTRODUCTION**

1. **Problem Statement**

Design and implement a Chat Application where user can use functionalities like direct messages, group message, profile setting with proper encryption and the proper security features for the users of the application. Along with that implement UML diagrams for chat Application Mini-Project. Starting any application or service has many problems but one of the main problems is which tool, language, stack or framework to build one’s service or application on. As building a real time application has to do with slow latency message delivery which in turn means latency, data transfer size over the network must be as low as possible.

1. **OBJECTIVE**
2. **Messaging**

One of the primary uses of our My Chat is messaging. Just like other social apps, you have a list of conversations that you’re engaged in. This feature is pivotal as you can add people in a variety of ways aside the conventional way of details collection. Users of MyChat will use a phone number to add a person to their contact list and even search for people nearby. It also has group chat or you can say that chat room where you can chat with large number of the people at the same time and will also increase productivity.

MyChat has social power will be let loosed as it will translate to become one of the main ways people will have to communicate in from any point of world to another. MyChat also help to break the barrier of physical distance and it will help them to communicate with their friends and families.

1. **MOTIVATION**

A MyChat application is one which make communication between people in any part of the world easy and help them to reduces their distance from each other’s. It makes easy for them to interact in real time. With MyChat many people can talk, express themselves, make new friends and a lot of stuff. We are trying to provide a interface to them which make them feel exactly like when they feel when they are in person. They just have to open our app and they will be open to world.

**CHAPTER 2: OVERALL DESCRIPTION**

**1. PRODUCT PERSPECTIVE**

* The system can simultaneously use for chat type application where user will send a real time text-based messages to each other along with user also can send the attachments.
* create groups and an enterprise also able to use our application for communication media
* Provide privacy and security with help of encryption and encoding to our users

**2. USER CLASSES AND CHARACTERISTICS**

**a) User Classes**

* Users who want to communicate with their friends and relatives.

**b) User Characteristics**

* User should be familiar to use internet facilities.
* User should be aware with the terms such as create account, log in, create groups, attach files send emojis or stickers, create chat rooms, create groups etc.

**c) OPERATING ENVIRONMENT**

- Intel x86 or compatible processor

- Minimum of 2GB RAM

- Minimum of 25GB hard drive space

- TCP/IP protocol support

- Compatible operating systems:

- An x86 Linux operating system.

- A 64-bit Windows operating system such as Windows 7, Windows 8, Windows 10, Windows Server 2008 or Windows Server 2012.

- Mac OS X operating system x64.

**e) USER DOCUMENTATION**

While our app will be relatively simple to use, it introduces new technologies, new concepts, and new functionalities which users will need to learn

Online Help:

- Tutorial Videos

- Step-by-step guides for using the app

- FAQs and answers

**e) ASSUMPTIONS AND DEPENDENCIES**

Working Of Android Chat Application need Internet Connection

The user needs to have sufficient knowledge of using internet

**3. EXTERNAL INTERFACE REQUIREMENTS**

**a) User Interfaces**

* A GUI provided for sign up and login also other task related to app using java and JavaScript

**b) Hardware Interfaces**

- Intel x86 or compatible processor

- Minimum of 2GB RAM

- Minimum of 25GB hard drive space

- TCP/IP protocol support

**c) Software Interfaces**

- Compatible operating systems:

- An x86 Linux operating system.

- A 64-bit Windows operating system such as Windows 7, Windows 8, Windows 10, Windows Server 2008 or Windows Server 2012.

- Mac OS X operating system x64.

**d) COMMUNICATION INTERFACES**

-Direct messaging as well as sharing media including voice messages, videos and photos

**4.SYSTEM FEATURES**

Here shows a Features of a system

1. **Account Creation**

* The User can sign in or create an account with mobile number verification
* The User can login through login\_id and password

1. **Add Contact**

* User can add contact number of friends to chat with them
* User can also able to accept the request from the user who send request to user

1. **Create Chat Room**

* The User can create chat room where he/she can talk with multiple number of the people at same time

1. **Group chats**

* User can be able to create group of people having something in common and it can also help to build a community.

1. **Direct Messages**

* User can chat in a one-to-one with someone and will have full security and full encryption in our app so that no personal data is being leaked by external source

1. **Update profile**

* User can also be able to change his/her profile setting as many times as possible.

1. **OTHER NONFUNCTIONAL REQUIREMENTS**

Following Non-functional Requirements will be there

1. **Safety Requirements**

* The Users data should be stored in private so that it will maintain privacy

1. **Security Requirements**

* Chat app should be secure from hackers
* All data must be backed up

1. **Software Quality Attributes**

* Reliability
* Reusability

1. **Business Rule**

* This application will help peoples to interact with each other without coming together
* And will help in many business ideas to share important data and files

**CHAPTER 3: DIAGRAMS**

1. **ER DIAGRAM**

Diagram

Description automatically generated

**2. UML DIAGRAMS**

1. **Use-Case Diagram**

Diagram

Description automatically generated

1. **Class Diagram**

Graphical user interface, application, Teams

Description automatically generated

1. **Sequence Diagrams for Registration**

Diagram

Description automatically generated

1. **Sequence Diagrams for Chat**

Diagram

Description automatically generated

1. **State Diagram**

Diagram

Description automatically generated

1. **Activity Diagram**

Graphical user interface, application

Description automatically generated

1. **Component Diagram**

Graphical user interface, application, Teams

Description automatically generated

**CHAPTER 4: Coding Screenshots with Results**

1. **Coding Screenshots**

Graphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

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Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, application

Description automatically generatedGraphical user interface, text, application

Description automatically generatedGraphical user interface, text, application

Description automatically generated

1. **Results**

* **Starting page**

Graphical user interface

Description automatically generated with medium confidence

* **Page to enter mobile number**

Graphical user interface, application, Teams

Description automatically generated

* **Select Country of orgin page**

Graphical user interface, application

Description automatically generated

* **Verification that is there a robot or human in other end**

Graphical user interface, application

Description automatically generated

* **Otp Verification process**

Graphical user interface, application, website

Description automatically generated A screenshot of a cell phone

Description automatically generated with medium confidence

* **Profile Settings**

A screenshot of a phone

Description automatically generated with medium confidence Graphical user interface, application, website, Teams

Description automatically generated

A screenshot of a computer

Description automatically generated with low confidence

* **App Interface**

Graphical user interface, application

Description automatically generated Chart, treemap chart

Description automatically generated

**CHAPTER 5: CONCLUSION OF REPORT**

1. **Conclusion**

As you seen our project and if you read it carefully you will come to know a lot of information about our project that is MyChat application. we tried make a simple but secure system of a chat for our users. we did all things possible in the project and hopes so you also feel the same while reading it.

For these project i summarise the report from start we take and overview in the start in chapter 1 then in chapter 2 we focused on the more of the technical things like software recognition then along with that we also know functional and non-functional things about the project. In chapter

3 we seen a brief overview from both static and the dynamic view over our system with ERD and UML diagrams which provide a large info about the system.

In chapter we seen the testing and implementation part of the project where we see how and which functions are running along with that then we see the bug resolution and approach toward the implementation part of MyChat Application

1. **Future Scope**

**•** Video calls will be added

• Voice recording can be added

• Enhancing different text style and font size

• Introduction of animations

• Instant document attachment

1. **GitHub Project URL**

https://github.com/Bharat-N-Karle/CHAT\_APP