# Software Requirements Specification

for

# ALAP\_CHARITA

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## 18.02.2024

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### 1. Introduction

The Software Specification & Requirement Report (SSRR) for the ALAP\_CHARITA chatting application aims to provide a comprehensive overview of the project's policies, scope, references, and a summary of its requirements. This document serves as a guide for the development team, stakeholders, and end-users, facilitating a clear understanding of the objectives and functionalities of the ALAP\_CHARITA application. In today's digital age, communication is paramount, and mobile applications have revolutionized the way people connect and interact. ALAP\_CHARITA is an android-based chatting application designed to streamline group communication and facilitate seamless interactions among users across different networks. By leveraging socket programming and Heroku cloud server technology, ALAP\_CHARITA offers a simple yet powerful platform for users to engage in group conversations in real-time.

The primary purpose of ALAP\_CHARITA is to provide users with a convenient and efficient means of communication, enabling them to exchange messages and stay connected with friends, family, colleagues, or communities. Unlike traditional chatting applications, ALAP\_CHARITA focuses on group chats rather than one-to-one conversations, fostering a sense of community and collaboration among users. Upon installation of the ALAP\_CHARITA application, users are prompted to sign in by entering their name, granting them access to the chat room where they can participate in ongoing conversations. The cloud server infrastructure ensures that users from different networks can join the chat seamlessly, enhancing the inclusivity and accessibility of the platform. Through ALAP\_CHARITA, users can engage in vibrant discussions, share information, collaborate on projects, or simply connect with like-minded individuals. By eliminating the need to scroll through endless message histories, ALAP\_CHARITA offers a fresh and clutter-free chatting experience, focusing solely on the present conversation.

#### 1.1 Problem Statement

In today's digital age, communication has become increasingly vital, with individuals seeking efficient and accessible means to connect with others. While numerous messaging applications exist, many lack the simplicity and accessibility desired by users. Moreover, there's a growing need for secure and seamless group communication platforms that transcend geographical boundaries.

ALAP\_CHARITA, a proposed android-based chatting application, aims to address these challenges by providing a user-friendly platform for group communication. Traditional messaging apps often lack the ability to facilitate group conversations seamlessly, leading to fragmented discussions and difficulties in managing multiple contacts. Additionally, concerns over privacy and data security persist, with users often wary of sharing sensitive information on mainstream platforms. ALAP\_CHARITA seeks to offer a solution by providing a straightforward, android-based application that allows users to quickly sign in and join group chats. By leveraging socket programming and Heroku cloud server technology, ALAP\_CHARITA enables users from different networks to participate in real-time conversations, fostering a sense of inclusivity and connectivity.

### 1.2 Purpose

The purpose of this report is to assess the functionality and usability of the ALAP\_CHARITA chatting application and to identify any potential areas for improvement in its design and implementation. This report will conduct a comprehensive evaluation of ALAP\_CHARITA's signin process, group chat functionality, and integration with Heroku cloud server technology. Additionally, it will examine the user experience and satisfaction levels with the application, highlighting any issues or challenges faced by users during their interaction with the platform. Furthermore, the report will explore the broader landscape of messaging applications and analyze ALAP\_CHARITA's competitive positioning within this market. By providing actionable insights and recommendations, this report aims to guide future development efforts and enhance the overall effectiveness and user satisfaction of the ALAP\_CHARITA chatting application.

### 1.3 Project Scope

This report will focus on evaluating the functionality and effectiveness of the ALAP\_CHARITA chat application, aiming to identify areas for improvement and refinement within its operational model. The analysis will encompass the following key aspects:

- User Experience and Interface Design: This section will delve into the usability and intuitiveness of the ALAP\_CHARITA application's user interface. It will evaluate the ease of navigation, clarity of instructions, and overall user experience during the sign-in process and while engaging in group chats. Additionally, this section will assess the visual design elements and responsiveness of the application across different Android devices.
- Security Measures: The report will examine the robustness of the security features implemented within the ALAP\_CHARITA application to safeguard user data and communication channels. It will assess encryption protocols, authentication mechanisms, and data protection measures to ensure user privacy and confidentiality.
- Functionality and Performance: This section will analyze the reliability and performance of the ALAP\_CHARITA application in facilitating real-time group communication. It will evaluate the speed of message delivery, system responsiveness under varying network conditions, and overall stability of the application during peak usage periods. Additionally, the report will assess the scalability of the application to accommodate an increasing number of users without compromising performance.
- User Feedback and Satisfaction: The report will gather feedback from ALAP\_CHARITA users to gauge their satisfaction levels and identify any pain points or areas for improvement. It will conduct surveys or interviews to capture user perceptions regarding the application's features, usability, and overall experience. Insights from user feedback will inform recommendations for enhancing the application's functionality and addressing user needs effectively.
- Competitive Analysis: This section will provide a comparative analysis of ALAP\_CHARITA against other android-based messaging applications available in the market. It will assess ALAP\_CHARITA's unique features, competitive advantages, and areas where it can differentiate itself to attract and retain users. Additionally, the report will identify emerging trends in the messaging app landscape and potential opportunities for innovation within the ALAP\_CHARITA platform

# 1.4 Glossary

This section provides definitions for all document names, acronyms, and abbreviations. The application domain's terms and concepts are defined.

GUI - Graphical User Interface
API – Application Programming Interface
SRS – Software Requirement Specification
UI – User Interface
SDLC – Software Development Life Cycle
MB – Megabytes
XML – Extensible Markup Language
RESTful – Representational State Transfer

HTML – Hyper Text Markup Language

#### 1.5 Overview

This report evaluates the functionality and effectiveness of the ALAP\_CHARITA chat application, a simple android-based messaging platform designed for group communication. ALAP\_CHARITA aims to provide users with a seamless and secure means of connecting with others in real-time, irrespective of geographical constraints.

The report assesses various aspects of the ALAP\_CHARITA application, including its user interface, security measures, functionality, performance, and user satisfaction. By examining these key areas, the report aims to identify opportunities for improvement and refinement within the application's operational model.

ALAP\_CHARITA offers users a straightforward sign-in process, enabling them to quickly join group chats upon installation of the application. Leveraging socket programming and Heroku cloud server technology, ALAP\_CHARITA facilitates real-time communication among users from different networks, fostering inclusivity and accessibility. The report will delve into the user experience provided by the ALAP\_CHARITA application, evaluating factors such as ease of navigation, clarity of instructions, and overall usability. Additionally, it will assess the security features implemented within the application to safeguard user data and communication channels, ensuring privacy and confidentiality.

Furthermore, the report will analyze the functionality and performance of the ALAP\_CHARITA application, including message delivery speed, system responsiveness, and scalability under varying network conditions. Insights from user feedback will be gathered to gauge satisfaction levels and identify areas for enhancement. The project overview outlines the structure of the report, which includes sections covering the project scope, introduction, purpose, methodology, findings, and recommendations. The report serves as a valuable resource for the development team behind ALAP\_CHARITA, as well as stakeholders interested in exploring alternative messaging solutions that prioritize simplicity, security, and user satisfaction.

### 2. Stakeholders and Characteristics

- **2.1 Users:** Users are the primary stakeholders of the ALAP\_CHARITA chat application. They engage with the platform to communicate with others in group chats. The key characteristics of users are:
  - They seek simplicity and ease of use in the application interface.
  - They prioritize privacy and security in their communications.
  - They may come from diverse backgrounds and technical expertise levels.
  - They value real-time and seamless communication experiences.
- **2.2 Developers:** Developers are responsible for designing, building, and maintaining the ALAP CHARITA application. The key characteristics of developers are:
  - They possess technical expertise in android development and socket programming.
  - They prioritize reliability, scalability, and performance in the application architecture.
  - They require access to relevant development tools and resources.
  - They may collaborate with cloud service providers for server management and maintenance.
- **2.3 Cloud Service Providers**: Cloud service providers host the ALAP\_CHARITA application's server infrastructure. The key characteristics of cloud service providers are:
  - They offer scalable and reliable cloud computing services.
  - They prioritize security and compliance with data protection regulations.
  - They provide technical support and maintenance for the server infrastructure.
  - They ensure high availability and uptime for the ALAP CHARITA application.
- **2.4 Regulatory Authorities**: Regulatory authorities oversee compliance with legal and regulatory requirements related to data privacy and communication services. The key characteristics of regulatory authorities are:
  - They enforce laws and regulations governing data protection and privacy.
  - They conduct audits and inspections to ensure compliance with regulatory standards.
  - They provide guidelines and recommendations for secure communication platforms.
  - They may collaborate with stakeholders to address emerging regulatory challenges.
- **2.5Advertisers:** Advertisers may utilize the ALAP\_CHARITA platform to reach users through targeted advertising campaigns. The key characteristics of advertisers are:
  - They seek opportunities to promote their products or services to a relevant audience.
  - They value insights and analytics to measure the effectiveness of advertising campaigns.
  - They may require ad placement options and targeting features within the application.
  - They prioritize transparency and accountability in advertising practices.
- **2.6 Feedback Providers**: Feedback providers offer insights and suggestions for improving the ALAP\_CHARITA application based on their user experience. The key characteristics of feedback providers are:
  - They provide constructive feedback on usability, features, and overall experience.
  - They may participate in beta testing and user research activities.
  - They value responsiveness and acknowledgment from the development team.
  - They contribute to the continuous improvement and refinement of the application.

# 3. Design and Implementation Constrains

Design and implementation constraints are crucial factors that shape the development and deployment of the ALAP CHARITA chat application. These constraints ensure the successful

execution of the project and guide the development team throughout the process. The following constraints have been identified for the ALAP\_CHARITA chat application:

- 1. Scalability: The ALAP\_CHARITA chat application must be designed to handle a potentially large user base and high volumes of concurrent messages. It should be scalable to accommodate growth in user traffic without compromising performance or reliability.
- 2. Security: Security is paramount in the ALAP\_CHARITA chat application to protect user data and communication channels from unauthorized access or breaches. Measures such as encryption, secure authentication, and data privacy protocols must be implemented to ensure the confidentiality and integrity of user information.
- **3. Availability**: The ALAP\_CHARITA chat application should be highly available and reliable, ensuring users can access the platform and engage in real-time communication without interruptions. Measures such as redundancy, load balancing, and disaster recovery plans should be in place to minimize downtime and ensure continuous service availability.
- **4. User Experience**: The user experience is a critical aspect of the ALAP\_CHARITA chat application, requiring intuitive design, responsive interfaces, and seamless navigation. The application should prioritize ease of use and accessibility for users from diverse backgrounds and technical expertise levels.
- **5. Data Management**: Effective data management is essential for the ALAP\_CHARITA chat application to store and manage user profiles, chat histories, and other relevant information securely. Robust database design, data encryption, and backup mechanisms should be implemented to ensure data integrity and availability.
- **6. Integration**: The ALAP\_CHARITA chat application may require integration with third-party services such as cloud platforms, payment gateways, and analytics tools. An API-based architecture should be adopted to facilitate seamless integration with external systems and services.
- 7. **Technology Stack**: The technology stack for the ALAP\_CHARITA chat application includes Java for Android development, Node.js for server-side scripting, and Heroku cloud platform for hosting. These technologies offer robust frameworks and tools for building scalable and reliable applications.

# 4. Hardware and Software Requirements The hardware and software requirements for developing and deploying the ALAP CHARITA chat application are as follows:

#### 1. Hardware Requirements:

- Android device with a minimum version of Android 7 (Nougat) for testing and deployment.
- Development machine (e.g., laptop or desktop) with adequate processing power and memory for software development and testing.

#### 2. Software Requirements:

• Android Studio: Integrated development environment (IDE) for Android app development using Java.

- Node.js: JavaScript runtime environment for server-side scripting and application logic.
- Heroku: Cloud platform-as-a-service (PaaS) for hosting and deploying the ALAP\_CHARITA chat application.
- PostgreSQL: Advanced open-source relational database for storing user data and chat messages securely.
- React Native: JavaScript framework for building native mobile apps, if cross-platform development is desired.
- Git: Version control system for tracking changes to the application codebase and collaborating with team members.

#### 3. Dependencies

```
"dependencies": {

"ejs": "^3.1.9",

"express": "^4.15.2",

"socket.io": "^1.7.2"

},
```

# 5. Requirement Specification

All the requirements based on the elicitation process are described in this section.

### 5.1 Functional Requirement

Functional requirements are those requirements that are used to illustrate the internal working nature of the system, the description of the system, and explanation of each subsystem. It consists of what task the system should perform, the processes involved, which data the system should hold and the interfaces with the user.

Requirement ID	Description	Stakeholders	Priority
FR-1	User Sign In	Users	High
	Users should be able to sign in to		
	their accounts upon launching the app.		
FR-2	<b>Group Chat Creation</b>	Users	High
	Users can create group chats and		
	invite others to join the conversation.		
FR-3	Real-time Messaging	Users	High
	Users can send and receive messages		
	in real-time within the group chat.		
FR-4	Cloud Server Integration	Development Team	Medium

	Integration with Heroku cloud server		
	to facilitate real-time communication		
	across different networks.		
FR-5	<b>User Authentication</b>	Users	High
	Users must authenticate their identity		

# **5.2** Non-Functional Requirements

Non-functional requirements specify the system's qualities and constraints, such as performance, security, and usability.

Requirement ID	Description	Stakeholders	Priority
NFR-1	Security	Users, Development Team	High
	The application must implement robust		
	security measures to protect user data		
	and communication channels.		
NFR-2	Performance	Users, Development Team	High
	The application must be responsive and		
	perform efficiently, even under high		
	user loads and network congestion.		
NFR-3	Compatibility	Users, Development Team	Medium
	The application should be compatible		
	with Android version 7 and above.		
NFR-4	Usability	Users	High
	The application should have an intuitive		
	and user-friendly interface, allowing		
	users to navigate and use the app		
	effortlessly.		

# **6.** Requirement Engineering Process

Requirements Engineering (RE) determines software requirements according to customer requirements or needs. Requirements engineering process includes requirements elicitation, needs modeling, requirements analysis, requirements assurance & validation, and requirements management.

### **6.1** Requirement Elicitation Techniques

Requirements elicitation is the practice of researching and finding system requirements for users, customers, and other stakeholders, also referred to as "requirement gathering". Requirement elicitation can be done by contacting participants directly or by doing some research, analysis and testing.

#### **6.1.1 Hold Interviews**

We hold discussions that can be held individually or with a small group of participants. They are an effective way to access services without spending a lot of time with participants because we meet with people to discuss only certain important requirements of this program. Negotiations are useful for obtaining individual requirements for members in organizing workshops where those members of the program come together to resolve any issues or conflicts. We mainly perform our interview based on some specific criteria.

- Short description about goals and objectives
- Registration process
- Searching Audio Files
- Storage system of each account
- Compression size of audio files

#### **6.1.2** Perform Document Analysis

Existing documentation can help to show how systems are currently operating or what they are what I should do. Documents include written information about current programs, business processes, needs specifications, and competitor research. Review once textual analysis can help determine which performance should remain and functionality that isn't in use. After existing document

In analysis, we found several problems with the existing system.

- Existing systems cannot perform file compression.
- A user cannot share a file with others.
- No cloud storage system is provided by the existing systems.

#### **6.1.3** System Interface Analysis

The first thing to do is to identify which systems the system-to-be shall communicate with. It could be a server on the Internet, a piece of software on the same host as the system-to-be, some hardware or something completely different.

#### **6.1.4** Distribute Questionnaires

The questionnaire is a useful way to investigate styles, changes in attitudes and users' ideas, and user satisfaction with priorities and preferences. Our lists of questions were as short as possible. The respondent may be tired or frustrated. Had a basic reason for all the questions as well as group the topic areas together for the respondent to focus on. The main advantage of this survey responses

was that they were collected in the usual way. Information was summarized by a large number of people.

#### **6.2** Requirement Validation

Requirement validation ensures that the requirements are correct and reflect the quality you want from this program. In the beginning, our requirements looked good but when we read them and tried to work with them they came out having ambiguities and gaps.

#### **6.2.1** Review the Requirements

Negative peer review, especially the type of rigorous review called evaluation, is unique among the highest quality software processes available. We had a team of reviewers representing different perspectives and carefully examined written needs, analysis models, and related information on disability.

#### **6.2.2** Test the Requirements

The test creates another view of the requirements. We also performed writing tests regarding assurance of whether the expected performance was found or not. Getting tested by the user needs to document the expected product behavior under specified conditions.

#### **6.2.3** Simulate the requirements

To stimulate requirements, trading tools are available that we have used to simulate a proposed system in place or to add details of written requirements. The simulation takes prototyping to the next level.

# 7. Project Scenario

Mithun, a college student, recently downloaded the ALAP\_CHARITA Chat Application to stay connected with his friends and classmates. Here's how he navigates through the application:

#### Sign In:

Mithun launches the ALAP\_CHARITA app on his Android device. He enters his name in the provided field and clicks on the "Sign In" button. The application validates his credentials, and upon successful authentication, Mithun enters the main interface of the app.

#### **Explore Group Chats:**

In the main interface, Mithun sees a list of available group chats. He selects a chat group related to his college course and clicks on it to join the conversation. Upon entering the group chat, Mithun sees messages exchanged by other users in real-time.

#### **Send Messages:**

Excited to participate, Mithun types a message in the text input field. He hits the send button, and his message instantly appears in the group chat for others to see. Mithun engages in discussions with his peers, asking questions and sharing study resources seamlessly.

#### **Receive Notifications:**

While studying for an exam, Mithun receives a notification from the ALAP\_CHARITA app.He checks the notification and sees that his friends have started a new discussion in the group chat.Mithun clicks on the notification and joins the conversation without delay.

#### **Explore Additional Features:**

Curious about other features, Mithun explores the menu options within the ALAP\_CHARITA app. He discovers functionalities such as creating custom chat groups, inviting friends to join, and setting notification preferences. Mithun also explores the app settings to customize his profile, including adding a profile picture and updating his status.

#### Log Out:

After spending time chatting with friends, Mithun decides to log out of the ALAP\_CHARITA app.He navigates to the settings menu and selects the "Log Out" option.The application confirms his action, and Mithun successfully logs out, ending his session.

# 8. Use Case Diagram

## Use Case Diagram of KOTHA

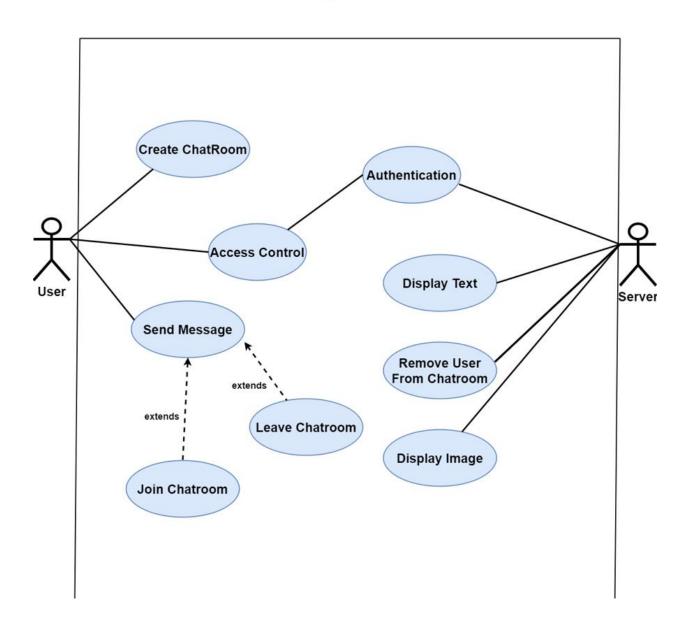


Figure 1: Usecase Diagram

# 9. Use Case Description

# Table-01

# 9.1 UC-01

Use Case	Access Control
Goal	Allow users to sign in and access the chat application
Precondition	User has installed the ALAP_CHARITA Chat Application
Success End	User successfully signs in and gains access to the app
Condition	
Failed End	1) Incorrect username or password entered
Conditions	
	2) User fails to authenticate due to network issues
<b>Primary Actor</b>	User
Secondary Actor	N/A
Trigger	User launches the ALAP_CHARITA Chat Application
<b>Main Success Flow</b>	1) User enters their username and password in the provided fields
	2) System verifies the user's credentials and authenticates the user
<b>Alternative Flow</b>	1a) If the user enters incorrect credentials, the system displays an error message
Quality	1) The authentication process should be secure and resistant to brute force
Requirements	attacks
	2) The app should provide appropriate error messages to guide users in case of
	authentication failures

# Table-02

# 9.2 UC-02

Use Case	Create Chatroom
Goal	Allow users to create a new chatroom
Precondition	User is authenticated and logged in to the app
Success End	New chatroom is successfully created
Condition	
Failed End	1) User lacks necessary permissions to create a chatroom
Conditions	
	2) System encounters an error while creating the chatroom
<b>Primary Actor</b>	User
Secondary Actor	N/A
Trigger	User selects the option to create a new chatroom
<b>Main Success Flow</b>	1) User provides a name for the new chatroom
	2) User selects the members to invite to the chatroom
	3) System creates the chatroom and adds the selected members

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<b>Alternative Flow</b>	2a) If the user decides not to invite any members, the chatroom is created	
	without any members	
Quality	1) The creation process should be fast and seamless, even for users with slower	
Requirements	internet connections	
	2) The system should prevent the creation of duplicate chatroom names	

# Table-03

# 9.3 UC-03

Use Case	Send Message	
Goal	Allow users to send messages in a chatroom	
<b>Precondition</b> User is authenticated and has joined a chatroom		
Success End Message is successfully sent and displayed in the chatroom		
Condition		
Failed End	1) User loses network connection while sending the message	
Conditions		
	2) System encounters an error while sending the message	
<b>Primary Actor</b>	User	
<b>Secondary Actor</b>	N/A	
Trigger	User types a message and selects the send button	
<b>Main Success Flow</b>	1) User types the message in the text input field	
	2) User clicks on the send button to send the message	
	3) System sends the message to the chatroom members	
<b>Alternative Flow</b>	1a) If the user loses network connection, the message is queued for sending once	
	connection is restored	
Quality	1) Messages should be sent and displayed in real-time to provide a seamless	
Requirements	chatting experience	
	2) The system should handle message delivery failures gracefully and provide	
	appropriate error messages	

# Table-04

# 9.4 UC-04

Use Case	Join Chatroom	
Goal	Allow users to join an existing chatroom	
Precondition	Precondition User is authenticated and has access to available chatrooms	
Success End	User successfully joins the selected chatroom	
Condition		
Failed End	1) User attempts to join a private chatroom without invitation	
Conditions		
	2) System encounters an error while processing the join request	
Primary Actor	User	

Secondary Actor	N/A					
Trigger	User selects a chatroom to join from the available options					
<b>Main Success Flow</b>	1) User selects the desired chatroom from the list					
	2) System adds the user to the selected chatroom					
<b>Alternative Flow</b>	1a) If the chatroom is private and requires an invitation, the system prompts the					
	user to request an invitation					
Quality	1) The system should display a list of available chatrooms quickly and efficiently					
Requirements						
	2) Joining a chatroom should be a straightforward process for users					

# Table-05

# 9.5 UC-05

Use Case	Leave Chatroom				
Goal	Allow users to leave a chatroom they no longer want to participate in				
Precondition	User is authenticated and has joined the chatroom				
Success End	User successfully leaves the chatroom				
Condition					
Failed End	1) User encounters an error while leaving the chatroom				
Conditions					
<b>Primary Actor</b>	User				
Secondary Actor	N/A				
Trigger	User selects the option to leave the chatroom				
<b>Main Success Flow</b>	1) User selects the option to leave the chatroom				
	2) System removes the user from the chatroom				
Alternative Flow	N/A				
<b>Quality Requirements</b>	1) Leaving a chatroom should be a simple and intuitive process for users				
	2) The system should update the chatroom member list promptly after a user				
	leaves				

# Table-06

# 9.6 UC-06

Use Case	Authenticate User					
Goal	Verify the identity of users accessing the app					
Precondition	User has installed the ALAP_CHARITA Chat Application					
Success End	User successfully authenticates and gains access to the app					
Condition						
Failed End	1) User enters incorrect username or password					
Conditions						
	2) System encounters an error while processing the authentication request					

<b>Primary Actor</b>	User					
Secondary Actor	N/A					
Trigger	User launches the ALAP_CHARITA Chat Application					
<b>Main Success Flow</b>	1) User enters their username and password in the provided fields					
	2) System verifies the user's credentials and authenticates the user					
<b>Alternative Flow</b>	1a) If the user enters incorrect credentials, the system displays an error message					
Quality	1) Authentication process should be secure and resistant to unauthorized access					
Requirements						
	2) The app should provide clear and informative error messages in case of					
	authentication failures					

## Table-07

# 9.7 UC-07

Use Case	Display Text, Image					
Goal	Display text and image messages in the chatroom					
Precondition	User has joined a chatroom and received messages					
Success End	Text and image messages are successfully displayed					
Condition						
<b>Failed End Conditions</b>	1) System encounters an error while loading or displaying messages					
Primary Actor	User					
Secondary Actor	N/A					
Trigger	User accesses the chatroom and scrolls through messages					
<b>Main Success Flow</b>	1) System retrieves text and image messages from the server					
	2) System displays the messages in the chatroom					
Alternative Flow	N/A					
<b>Quality Requirements</b>	1) The system should load and display messages quickly and efficiently					
	2) Text and image messages should be rendered accurately and clearly for					
	users					

# Table-08

# 9.8 UC-08

Use Case	Remove User from Chatroom					
Goal	Allow chatroom administrators to remove users					
Precondition	User is an administrator of the chatroom					
Success End	User is successfully removed from the chatroom					
Condition						
Failed End	1) User lacks necessary permissions to remove other users					
Conditions						
	2) System encounters an error while processing the removal request					

<b>Primary Actor</b>	Administrator					
<b>Secondary Actor</b>	N/A					
Trigger	Administrator selects the option to remove a user					
<b>Main Success Flow</b>	1) Administrator selects the user to be removed from the chatroom					
	2) System removes the selected user from the chatroom					
<b>Alternative Flow</b>	N/A					
Quality	1) The system should provide clear guidelines and restrictions for user removal					
Requirements	to prevent misuse					
	2) Removal of users should be logged and audited for accountability					

# 10. Sequence Diagram

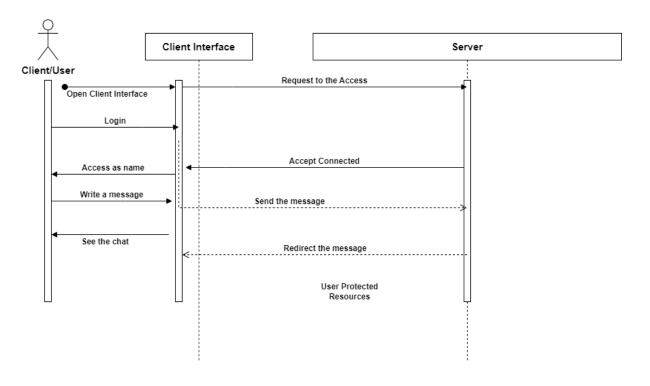


Figure 2: Sequence Diagram

# 11. Activity Diagram

# 11.1 Send Message

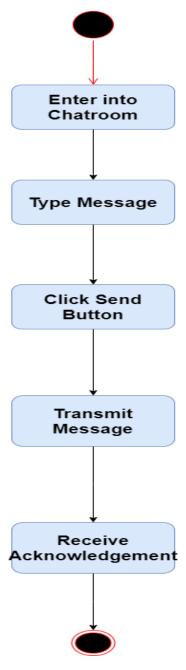


Figure 3:Send Message

## 11.2 Create Chatroom

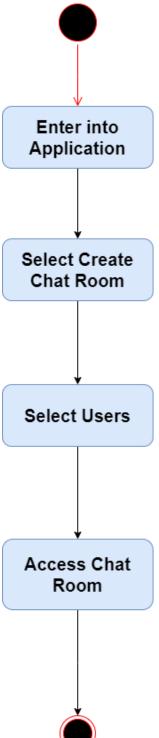


Figure 4: Create Chatroom

# 11.3 Join Chatroom

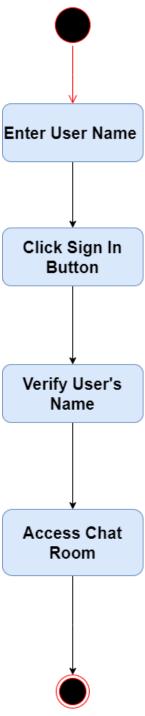


Figure 5:Join Chatroom

# 12. Requirement Traceability Matrix

A traceability matrix is a document, usually in the form of a table, used to assist in determining the completeness of a relationship by correlating any two baselined documents using a many-to-many relationship comparison. It is often used with high-level requirements (these often consist of marketing requirements) and detailed requirements of the product to the matching parts of high-level design, detailed design, test plan, and test cases.

Requirements Traceability Matrix						
Project Name	E-Farm	Business Area		Local		
Function al Activity	Use Case Reference	Design Document Reference	Code Module/ Reference	User Acceptance Validation	Comments	
FR1	UC1			Pass		
FR2	UC2			Pass		
FR3	UC3,UC5			Pass		
FR4	UC4			Verified		
FR5	UC6			Pass		
NFR6	UC7			Verified		
NFR7	UC8			Pass		
NFR8	UC9			Pass		

NFR9	UC5,UC7		Verified	

# 13. Appendix

### **13.1** Prioritization of requirements

We've prioritized the functional requirements by following Three-level Scale technique.

#### 13.1.1 Three-level Scale

When a Business Analyst categorizes the requirements in any of the ordering or ranking scale, it is subject to the analyst's understanding of the business. Many analysts suggest that this method has some drawbacks and advocate methods that have more than one scale.

#### 13.1.2 Prioritization of the requirements of ALAP\_CHARITA

**FR1** – High priority

FR2 – High priority

**FR3** – High priority

**FR4** – Medium priority

**FR5** – High priority

**NFR6** – High priority

**NFR7** – High priority

**NFR8** – Medium priority

**NFR9** – High priority