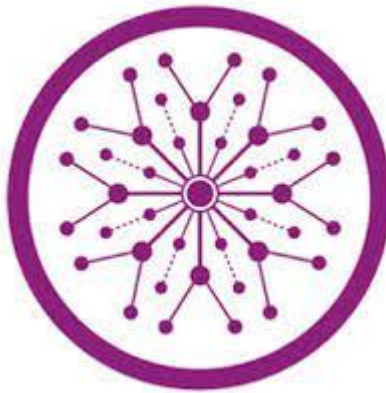


I Connect (Messenger app)

Final Year Project

Session 2019-2021

A project submitted in partial fulfillment of the degree of
Master in Information Technology



Department of Information Technology
Faculty of Computer Science & Information Technology
The Superior University Lahore

Fall 2021

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Plagiarism Free Certificate

This is to certify that, I **Ali Sher** group leader of FYP under registration no **Mitm-s20-013** at Information Technology Department, The Superior University Lahore. I declare that my FYP proposal is checked by my supervisor and the similarity index is _____ that is less than 20%, an acceptable limit by HEC. Report is attached herewith as Appendix D.

Date: _____ Name of Group Leader: **Ali Sher** Signature: _____

Name of Supervisor: **Mr. Rohail Shehzad**

Designation: **Lecturer**

Signature: _____

HoD: Dr. Asad Ali Naqvi

Signature: _____

Project Report

I Connect Application

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
Ali, Hasnain and fakhira	1.0		<Template 1>	
Ali, Hasnain and fakhira	1.1		< Documentation >	
Ali, Hasnain and fakhira	1.2		< Review of layouts >	
Ali, Hasnain and fakhira	1.3		< Review of Coding >	
Ali, Hasnain and fakhira	1.4		<Review to database>	

APPROVAL

PROJECT SUPERVISOR

Comments: _____

Name: _____

Date: _____ Signature: _____

PROJECT MANAGER

Comments: _____

Date: _____ Signature: _____

HEAD OF THE DEPARTMENT

Comments: _____

Date: _____ Signature: _____

Dedication

First of all, we dedicate our project to Allah Almighty

And to whom the world owes its existence

Muhammad (Peace Be upon Him)

This humble effort is dedicated to

Our beloved parents who brought us

To the level of excellence where we

Are studying today looking for most

Promising and gleaming future ahead

For which they scarified most of the

Time of their life

&

To our respected and genius teachers

Who guided us throughout academic career!

And all those people

Who have remembered us in their prayers!

A lot of thanks for all my teachers!

Acknowledgements

I am really thankful to my supervisor who has Above all, I owe much tribute to the Almighty God who gave us a life worth living and i thank Him for giving us the strength to accomplish this project. The success and accomplishment of this project stems from efforts and dedication offered by many individuals whose support was either direct or indirect. I thank all of them for their devotion.

The author would like to express the sincere gratitude to their project advisor **Mr. Rohail Shezad** for his vigilant supervision, intellectual guidance, constructive advice.

In the last but not the least, special gratitude with the deepest sense of respects to our parents whose love and affections kept us steep fast and enabled us to attain targets and goals of academic life. The authors are extremely indebted to their brothers and sisters whose constant encouragement provides us with the impetus that was necessary for attaining academic initiatives.

Executive Summary

SECTOR: IT Software

COMPANY: I Connect Inc.

SUBJECT: Strategy Management

SYNOPSIS

The Project Report is on applying IT strategy on I Connect Inc.

Working on this project introduced us to the IT strategy of I Connect.

I Connect Inc. is an early-stage technology startup founded in the heart of Ali Sher.

Because of better SMS alternative, I Connect is invented. Because we believe we can. Because someday very soon everybody will have a Smartphone.

The study of on this project helped me to know current market scenarios of I Connect Inc. and also the variety of services that it offers to the users.

In today's tough economic climate all organizations need to improve efficiency and, even in midsize firms that usually mean coordinating large quantities of information. However, technology and thinking has progressed and, billions of users nowadays using I Connect Messaging application.

Messaging apps now have more global users than traditional social networks—which means they will play an increasingly important role in the distribution of digital journalism in the future. While chat platforms initially rose to prominence by offering a low-cost, web-based alternative to SMS, over time they evolved into multimedia hubs that support photos, videos, games, payments, and more.

Elsewhere, we conclude that issues around information, privacy, personal security, and mobile data penetration will unfold in different ways around the world; apps like Telegram and Fire Chat are among those at the forefront of addressing and solving these problems.

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Chapter 1

Introduction

Chapter 1: Introduction

I Connect Messenger is a cross-platform mobile messaging app which allows to exchange messages without having to pay for SMS.

I Connect Messenger is the most secure of a widely available messaging app. The most important thing to note here is, there's end-to-end encryption for both text and voice message.

I app support text, image, videos, voice and video calls, share location and document. And just like many other platforms, it supports group message. I Connect app deliver faster than any other application.

Where people wanted staying in touch with their friends and loved ones for as low a price as possible, WhatsApp removed the price aspect from it. It seems this application builders leveraged on the growing population of „Short message service (SMS)“ users.

The features of I Connect Messenger app following below

- Text: Simple, Reliable, Message
- Group Chat: group to keep in touch
- I connect voice and video calls: Speak freely
- End to end encryption: Security By default
- Shared Document that Matter: Photos and videos
- Voice message: say any ting of your mind
- Shared: sharing document made easy

.1. Background

The previous work of this already exists. The similar application can be found on the project either Android market. This project will focus on providing high quality usability experiences to users mainly following Google's user interface guideline. Experiments The application will be tested on a test group to improve the usability quality based on the user's feedback.

What, then, distinguishes WhatsApp from the other free of cost applications? It may be any one of the following –

1. The boom of 3G services followed by a fad for the same.
2. The plethora of cool and funky emoticons offered by WhatsApp.
3. Adding a friend on WhatsApp is simple. Anyone who possesses this application on his/her smartphone and is present in your contact list at the same time is connected to you via WhatsApp.
4. WhatsApp doesn't require any „Sign-in“ or „Log out“.
5. „What's up“, the on-going homonym pun, somehow makes it easier for the youth to connect with WhatsApp (Intelligent naming).
6. WhatsApp connects with its users in more than one ways – Facebook, Blog and Twitter, riding on the success of social networking's popularity

There can be a lot more than these. For some, it's the ease of clicking the I Connect App icon, going to the chat with a friend and seeing when was the last time he/she was seen online on the app. For others, it's the cool way in which one can update his/her status without really bothering everyone on his/her friend list to become aware of the same by a pop-up in their respective profile (A friend's status can be known only by going to „View profile“)

The telecom industry did not take long to realize that „Conference call“ was a much needed value added service. Hence, accepting the customer demands, WhatsApp too added a fascinating feature of „Group Chat“ in Feb 2011. Not only is it easy to create a group on WhatsApp, it is equally easy to quit the group too. WhatsApp has constantly been adding more and more handsets to its kitty over the time and informing users of the same through its website and blog. But fame is a double-edged sword. And so it happens that there has been a rumour taking some rounds; recently there was a hoax about WhatsApp charging a fee for its usage to the users

whose screen logo did not turn red. It was on declared on WhatsApp's blog and everywhere else on the internet that the apparently alarming message was a fake one. Whether this was a marketing gimmick by the parent company or an attempt to kill competition by someone else is for the users to figure out.

.2. Motivations and Challenges

Now a day people use more mobiles for internet for different purpose. It is very easy to use for everyone. It is app only for I Connect (Messenger app). A great new idea to help people through mobile app. The close gap between fortune and unfortunate people in the society.

The challenges of my application I Connect.

Below are the top 10 I Connect competitors:

1. **Viber**
2. **WeChat**
3. **Line**
4. **Skype**
5. Telegram
6. **Facebook**
7. **Instagram**
8. Snapchat
9. **Twitter**
10. WhatsApp

.3. Goals and Objectives

The purpose of the chat application is to allow users be able to the chat with each other, like a normal chat application. The users will be able to chat with each other, most likely only from user to user, no group chatting will be developed, unless there is time to do so. The chat application will be written in java, but due to the lack of experience in java, while developing the application, practicing techniques with java and working on it as much as possible will help hone some java skills and be more ready to develop the application.

Today, WhatsApp messages often live on our phones forever. While it's great to hold onto memories from friends and family, most of what we send doesn't need to be everlasting.

Our goal is make conversations on WhatsApp feel as close to in-person as possible, which means they shouldn't have to stick around forever.

.4. Literature Review/Existing Solutions

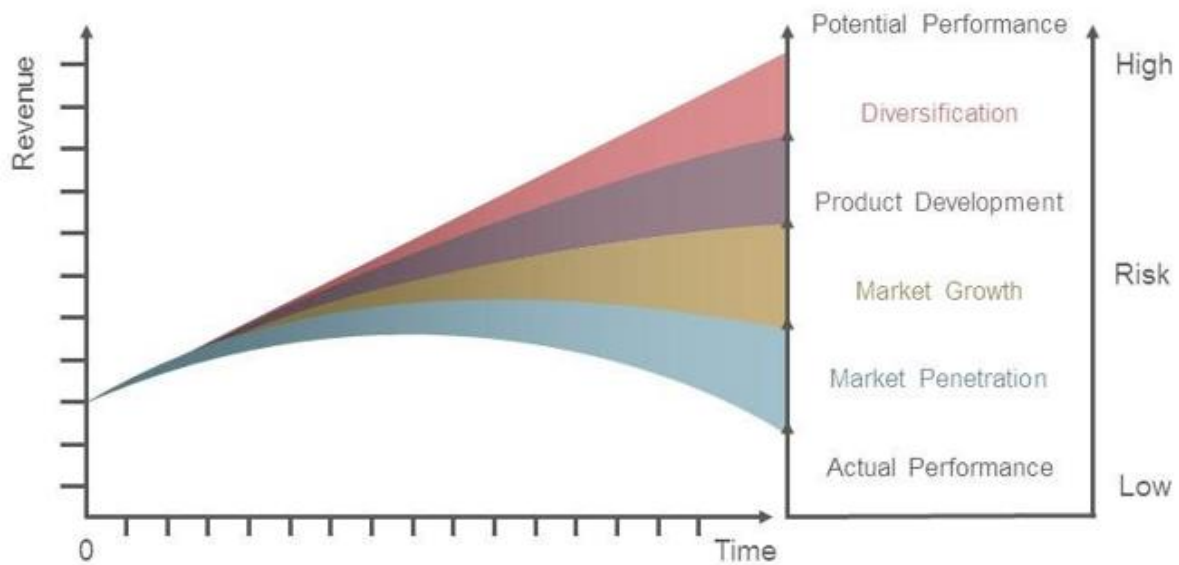
- Facebook messenger
- Telegram
- Whatsapp

We create a social app which is easy in use for everyone. The architectures and retrieval processes of these bots take advantage of advances in machine learning to provide advanced “information retrieval” processes, in which responses are generated based on analysis of the results of web searches.

Nowadays it is the era of intelligent machine. With the advancement of artificial intelligent, machine learning and deep learning, machines have started to impersonate as human. Conversational software agents activated by natural language processing is known as chatbot, are an excellent example of such machine. This paper presents a survey on existing chatbots and techniques applied into it. It discusses the similarities, differences and limitations of the existing chatbots.

.5. Gap Analysis

Gap analysis is used to compare where you are against where you would like to be. This helps you identify the gaps between these two states, and come up with an action plan to close them.



.6. Proposed Solution

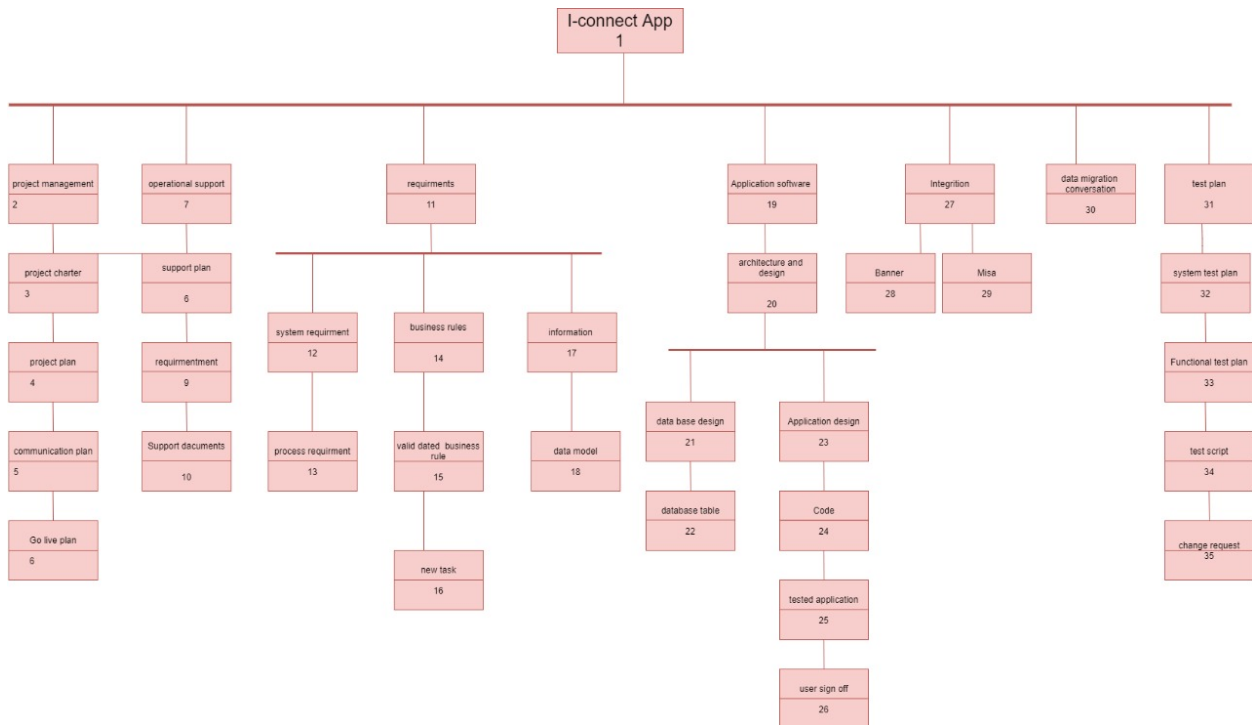
I Connect bot project is built using java language that analyzes user's queries and understand user's message and revert back to give answers. Students can chat using any format there is no specific format the user has to follow. The answers are appropriate what the user queries. If the answer found to invalid, user just need to select the invalid answer button which will notify the admin about the incorrect answer. The User can search and our algorithm will run in background to find the best possible answers for his question.

- As we Known that people are facing issue security and privacy (like privacy and account) the WhatsApp sharing data with Facebook. My application ensure app security and privacy data is very high. And doesn't share data. Safeguard your identity.
- The most important issue people facing audio and video call issue. I messenger app doesn't facing issue audio and video.

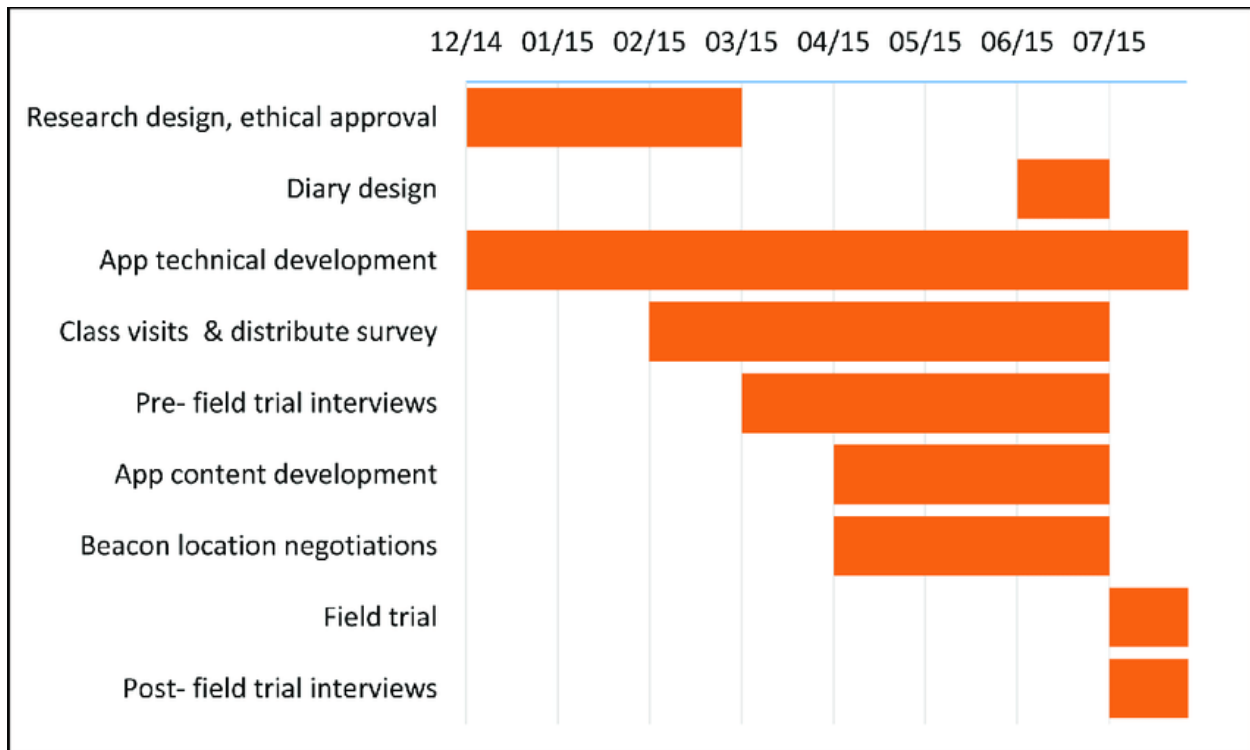
.7. Project Plan

The main purpose of the project is to design a complete I Connect App to solve the problems of the students. We have designed breakdown structure in which we distributed our work in different stages, Also we have planned Gantt chart divided.

.7.1. Work Breakdown Structure



.7.2. Gantt Chart



.8. Report Outline

- The Requirement was gathered in about 15 Days.
- The Documentation was made in a whole year.
- The coding and data were implanted in almost 4 months.
- The Test were made, and errors were debugged after and through the coding period.
- Validation and finalization in added golden days.
- Report for all Chat user
- Report of all Chat profile
- Report of all Chat History
- Report of all smiles Chats

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

.1. Introduction

.1.1. Purpose

However, the purpose of this project is to develop a java chat application. The objective of this process is as follows;

- To develop an instant messaging solution to enable users to seamlessly communicate with each other.
- The project should be very easy to use enabling even a novice person to use it.

From being a multi-purpose, user-friendly, connectivity application to allowing sharing of not only messages but also images, audio files and videos, WhatsApp is a rage. The reason is pretty obvious – From downloading it to using it, I Connect is free!

.1.2. Document Conventions

Font style used in this document is Calibri. The font size is 12 for description of each title or topic while sub -titles are in bold letters with font size 14. Headings or main titles having font size 18 with bold letters. Paragraph settings are justified and line spacing is 1.5

.1.3. Intended Audience and Reading Suggestions

This SRS document contains use case diagram and description about all use case have been included in this document. It also gives the functional and nonfunctional requirement. Product features, System features are also specified.

Developers who can review project's capabilities and more easily understand where their efforts should be targeted to improve or add more features to it (design and code the application – it sets the guidelines for future development). –

Project testers can use this document as a base for their testing strategy as some bugs are easier to find using a requirements document. This way testing becomes more methodically organized.

End users of this application who wish to read about what this project can do.

.1.4. Product Scope

.1.5. This project is to create a chat application with a server and users to enable the users to chat with each other's. To develop an instant messaging solution to enable users to seamlessly communicate with each other. The project should be very easy to use enabling even a novice person to use it.

For the scope of the project, the project will be tested as the program is being developed. A database for the users registered will be developed and tested, a menu will be developed and tested, a client/server interface will be developed and tested, and GUI's will be developed and tested, for the users' benefits. When the chat application is near completion, more testing will be done in order to make it less buggy or more user friendly.

Overall Description

.1.6. Product Perspective

The chat process solution provided allows the the messenger application.

.1.7. Product Functions

- I Connect chat application developed by Us has following features:
- **1. Personalize window behavior:** Define how the Live Chat button appears. Decide if you want the chat to open automatically and after how long.
- **2. Create custom welcome messages:** Configure automatic welcome messages for each channel and personalize the button's layout.
- **3. Answer from everywhere:** Live chat is accessible from within any module, in the front-end and backend, to keep track of every conversation.
- **4. Use fun smileys:** Add a personalized human touch to your communication with fun smileys.
- **5. Create canned responses:** Create shortcuts to use pre-written template answers for common questions.
- **6. Chat in groups:** Add multiple users to a conversation to make a group chat. The user interacts with the tool using GUI. The GUI Operates in two forms, Contacts Forms and Chat forms. The contacts forms contain list of all friend and the Chat form will be used to chat with friends

.1.1. User Classes and Characteristics

There is always a room for improvements in any apps. Right now, we are just dealing with text communication. There are several android apps which serve similar purpose as this project, but these apps were rather dicot to use and provide confusing interfaces. A positive first impression

is essential in human relationship as well as in human computer interaction. This project hopes to develop a chat service Android app with high quality user interface. In future we may be extended to include features such as:

1. File Transfer
2. Voice Message
3. Video Message
4. Audio Call
5. Video Call
6. Group Call

.1.2. Operating Environment

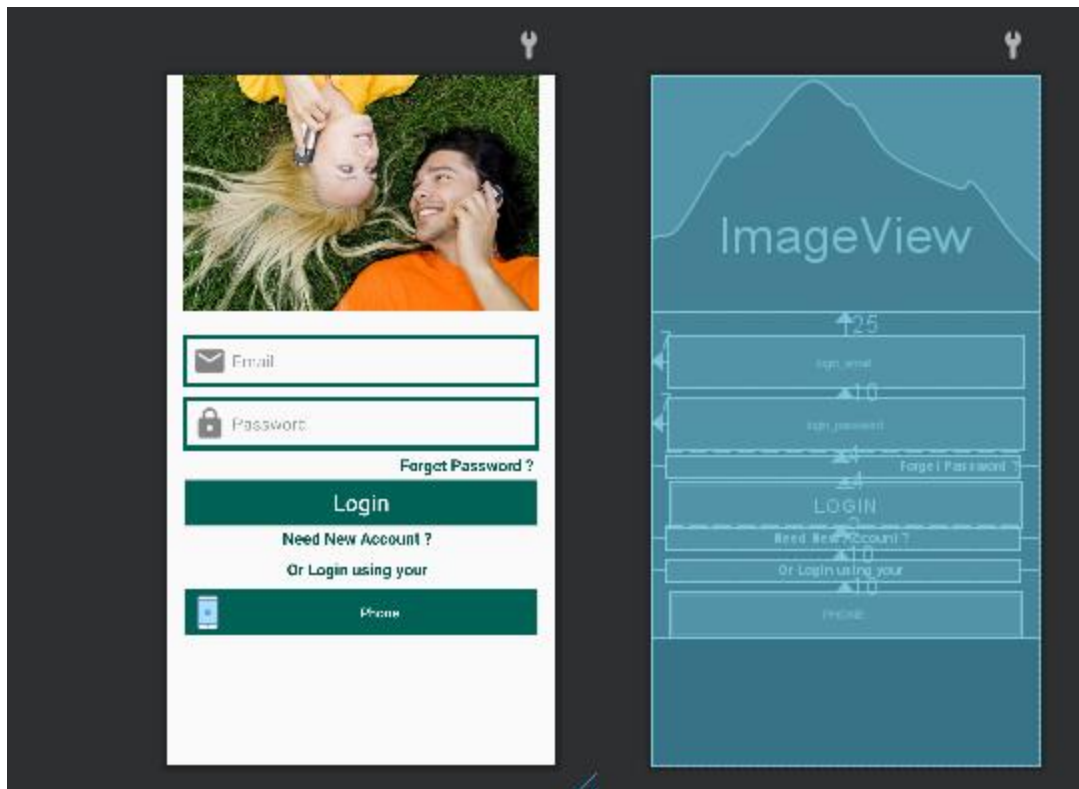
➤ The software is supposed to be provided with enough memory to store the data..

- It can be open on android.
- The processor should be core 2 duo or above.
- The processor's speed should be 2.8 GHz or greater.
- Ram should be or greater than 512 MB.

.1.1. Design and Implementation Constraints

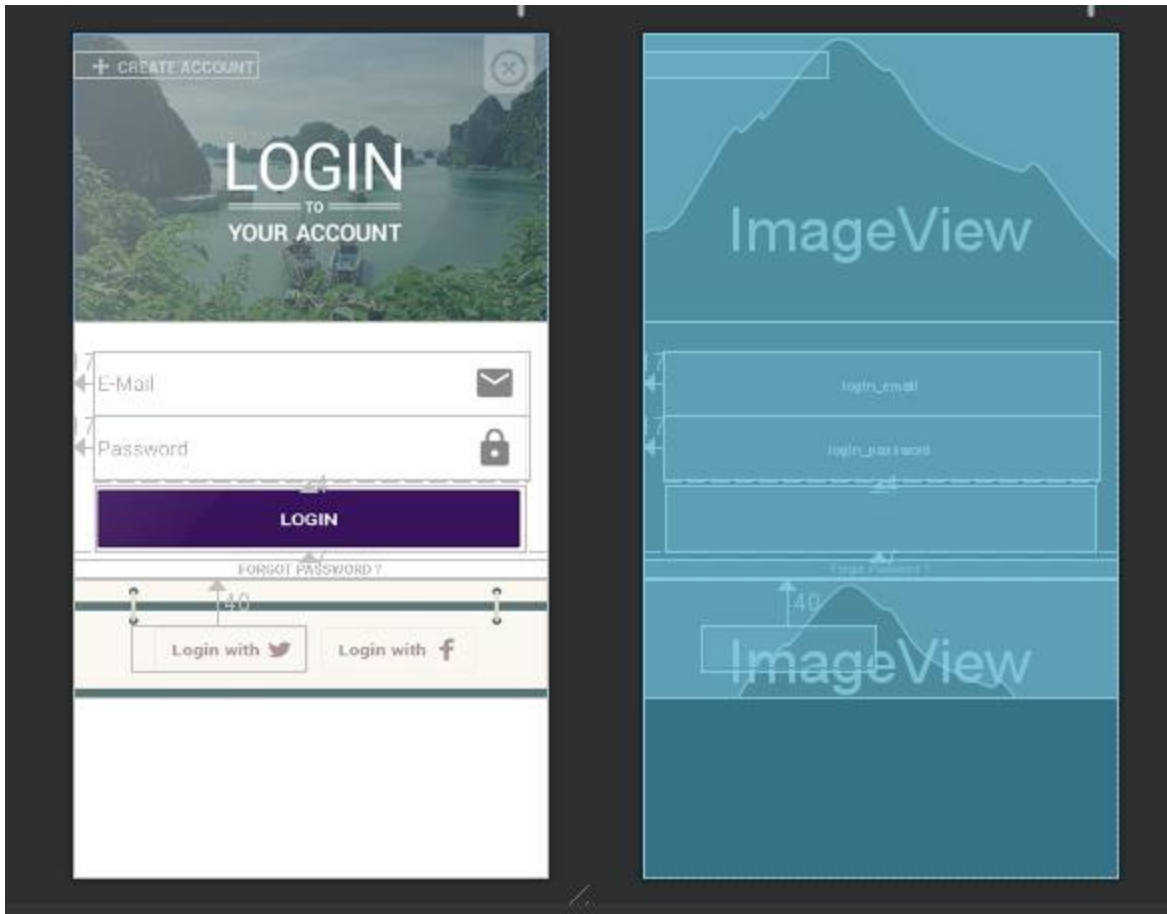
Registration

for new Member Open Chat Application & Click on Sign Up. Then This will pop up. Then You have to submit valid info to Successfully register.

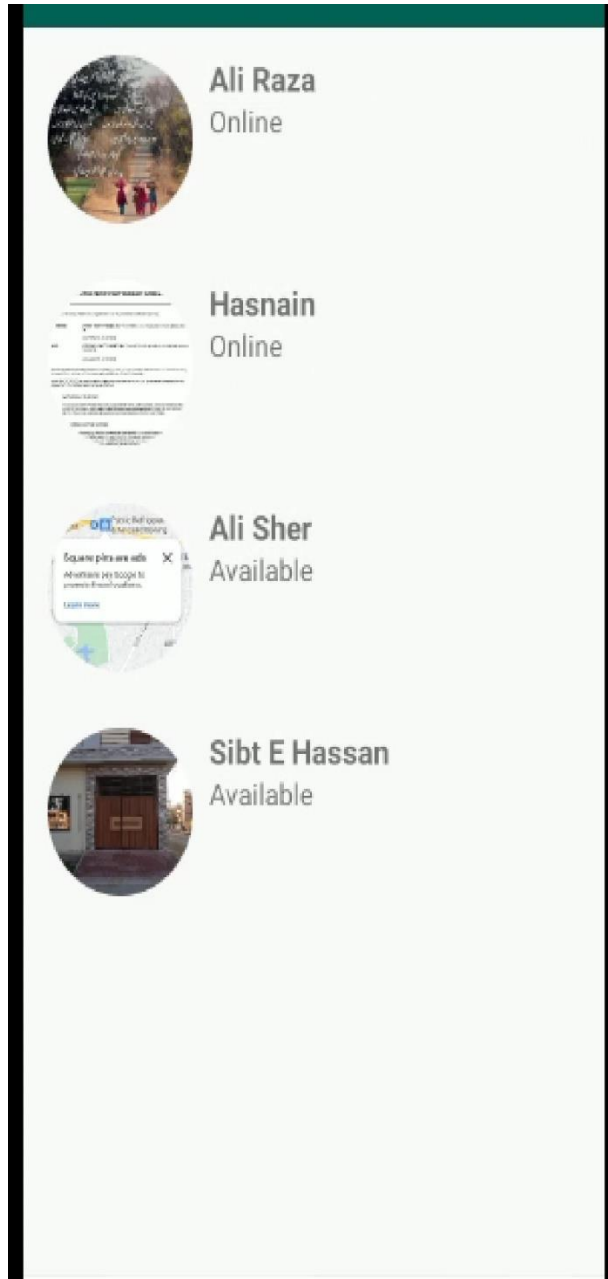


Login Features

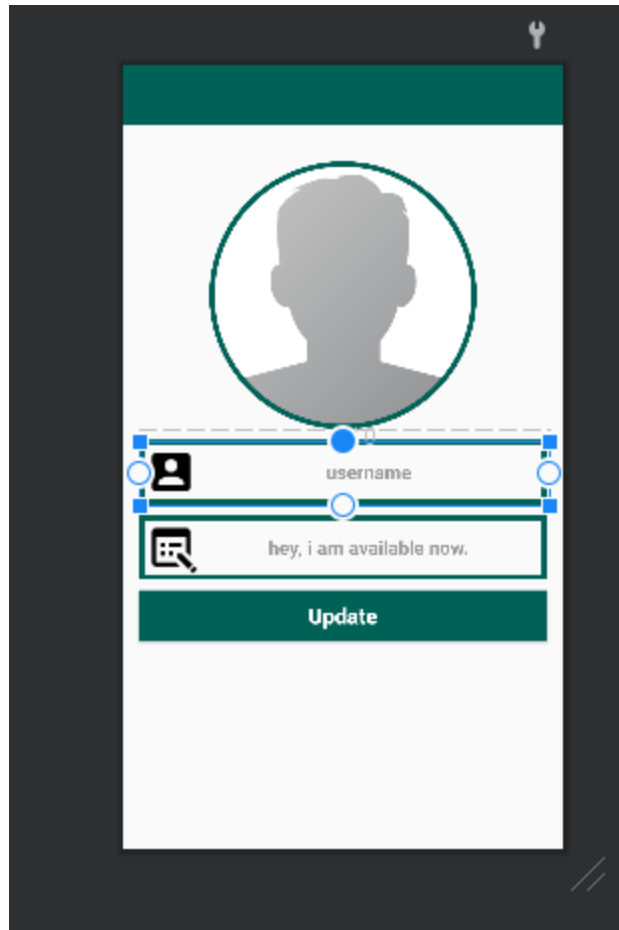
Open Chat App then click on Log In Button. Then Submit Valid Info to access your account.

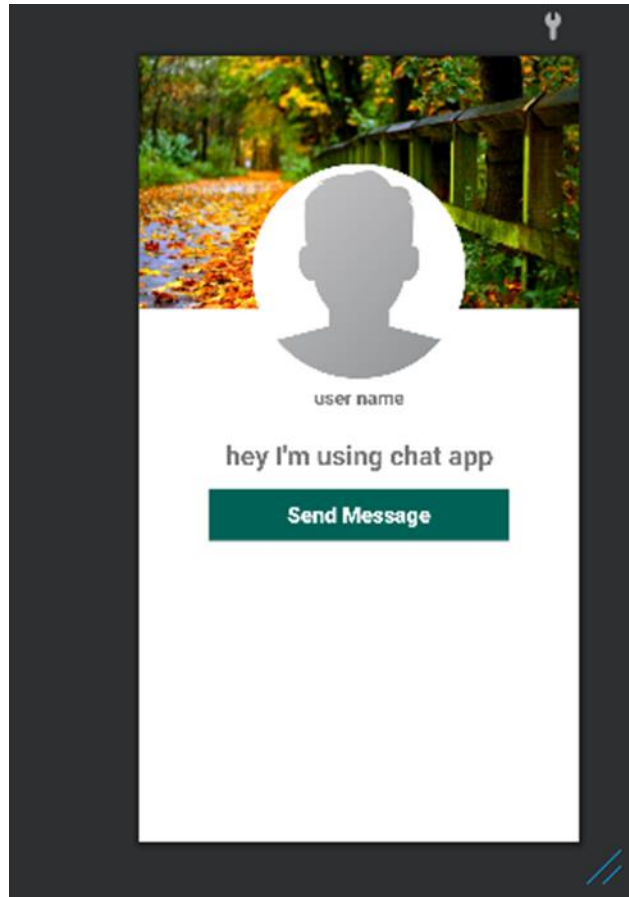


Chat

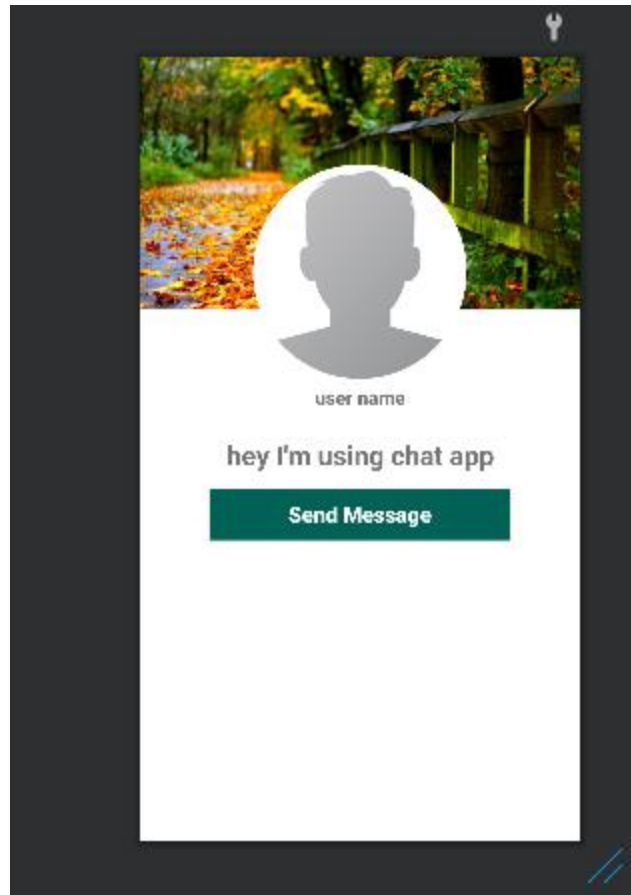


Setting

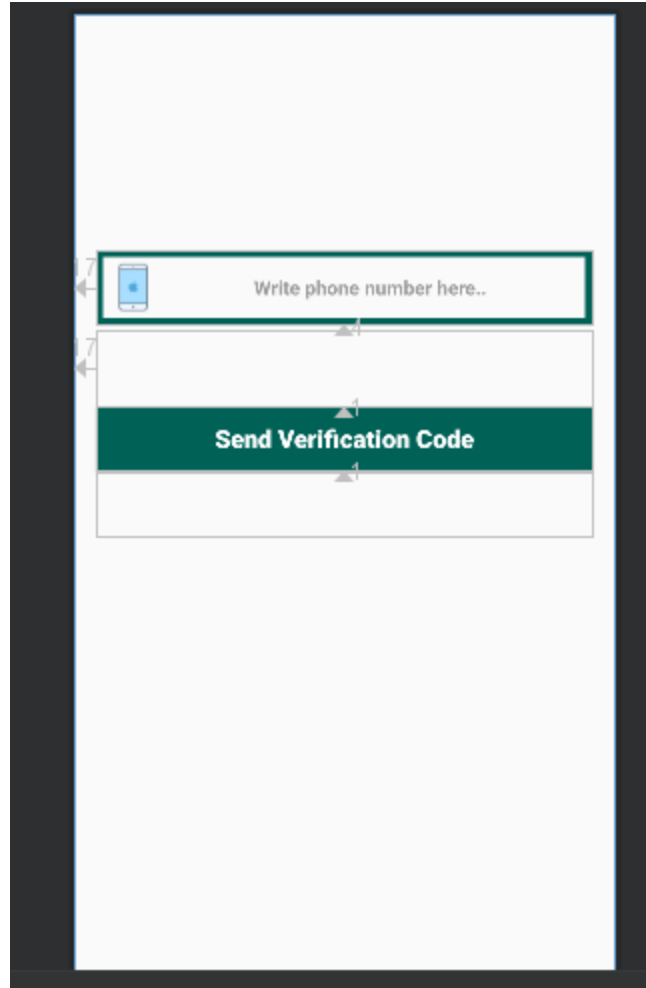




Profile

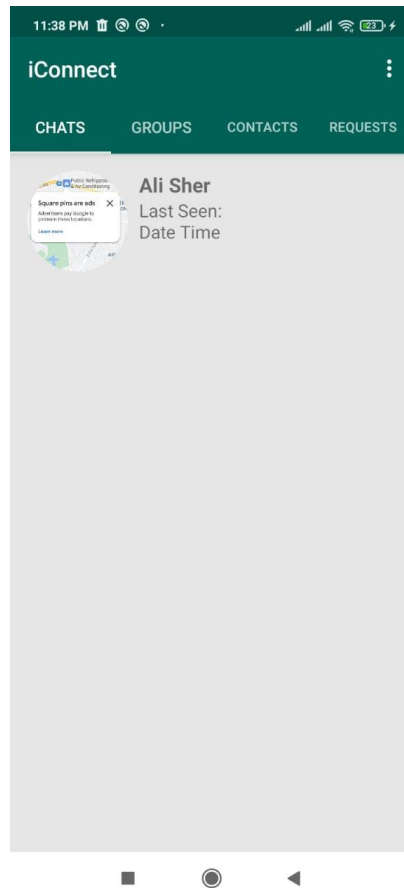


Phone Login

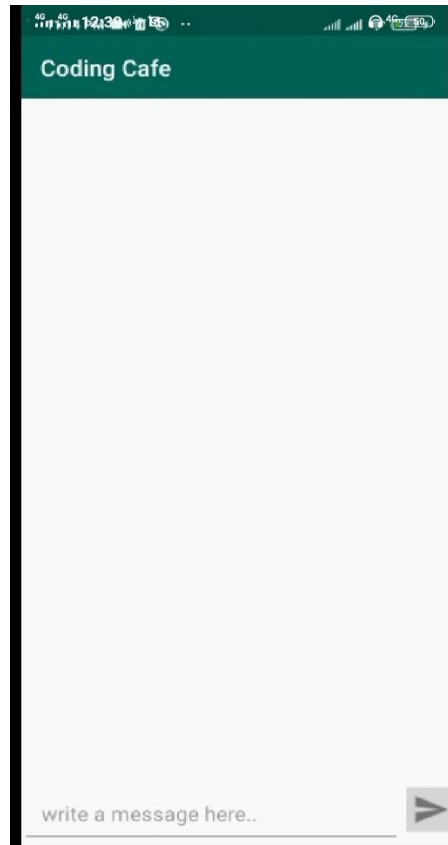


Custom chat bar





Group



.1.2. User Documentation

- Along with this project the documentation is provided to the users which will explain the user how to handle the android on the system. On the demand of users when a new user first time accesses the system the training videos or detail explanation of each component is provided to users. It must provide information about the database and various backend components. The system should provide a help system that describes and illustrates all system functions.

.1.1. Assumptions and Dependencies

- This application is developed on the basis of candidate must know communication.
- Every user should be comfortable working with computer and net browsing.
- User must have comfortable knowledge of English language.

.1. External Interface Requirements

.1.1. User Interfaces

The System shall provide a help link from each displayed web page to explain how to use that page

- Software should provide easy way to communicate and display that live chat on android.
- System should give notification for arrival of each message.
- System should display the total number of messages received on portal.
- User interface should provide the reports for the comparison of application from different applicant

.1.2. Hardware Interfaces

- Operating system: Linux, Windows, UNIX, MAC OS X.
- RAM: 256 Mb or more
- Hard drive: 2 GB or more
- Internet or LAN Connections Software Interfaces

.1.3. Communications Interfaces

- This application will not communicate with other users using the same application. This app however will communicate with the android device in ways like the time.
- The communication between the different parts of the system is important since they depend on each other. However, in what way the communication is achieved is not important for the system and is therefore handled by the underlying operating systems for the app portal.

.1. System Features

- The system is going to consist of multiple modules, each separately developed with their own features.

System features are as follows as

.1.1. System Feature 1

Login

.1.2. Description and Priority

- Login priority is matter in case if a user to want to take something from Portal. If it is login module then without login the login module is useless.

.1.1.1. Stimulus/Response Sequences

- System will display login form.
- System will validate and verify the details.
- System will display the dashboard.

.1.1.2. Functional Requirements

1. User Registration

User must be able to register for the application through a valid phone number. On installing the application, user must be prompted to register their phone number. If user skips this step, application should close. The users phone number will be the unique identifier of his/her account on Chat Application.

2. Adding New Contacts

The application should detect all contacts from the users phone book. If any of the contacts have user accounts with Chat Application, those contacts must automatically be added to the users contact list on Chat Application. If any of the contacts have not yet registered on Chat Application, user should be provided with an invite option that sends those contacts a regular text message asking them to join Chat Application along with a link to the Chat Application on Google Playstore.

3. Send Message

User should be able to send instant message to any contact on his/her Chat Application contact list. User should be notified when message is successfully delivered to the recipient by displaying a tick sign next to the message sent.

4. Broadcast Message

User should be able to create groups of contacts. User should be able to broadcast messages to these groups.

5. Message Status

User must be able to get information on whether the message sent has been read by the intended recipient. If recipient reads the message, 2 ticks must appear next to the message read.

6. Exit (Login Menu aspect)

This aspect will close the chat application.

.1.2. System Feature 3 (and so on)

.2. Other Nonfunctional Requirements

.2.1. Performance Requirements

- **Privacy:** Messages shared between users should be encrypted to maintain privacy.
- **Robustness:** In case users device crashes, a backup of their chat history must be stored on remote database servers to enable recoverability.
- **Performance:** Application must be lightweight and must send messages instantly. ticks must appear next to the message read.
- **Response time:** The home page loaded in 3-5 seconds.
- **Availability:** The site will available 99.99% of the time.
- **Throughput:** Page hits per second or orders per hour.
- **Capacity:** Maximum throughput that can be achieved with acceptable response time and availability.
- **Maintainability:**

System should be user friendly and easy to maintain

.1.1. Safety Requirements

System should not result into the damage or loss of the stored data. Each application and its attachments related to particular communication should be placed at one place. Software product should have antivirus facility.

.1.2. Security Requirements

Software is very deeply required with the security because the software stores all the important information of the users. Security for stored data should be provided. Security for user accessed should be provided by giving some login action like user name and password. It should prevent from unauthorized access to the applicant's application. The main security requirement is the validation used. Without proper validation the system does not allow to enter that value into database. All the required validation controls are kept to keep the system secure.

.1.3. Software Quality Attributes

- **Adaptability:** The software should be adaptable for all latest operating systems.
- **Availability:** The system is available 100% for the user and is used 24 hours a day.
- **Correctness:** All the data stored should be correct. Free from error, accurate. System should not allow incorrect and incomplete data to be entered.
- **Flexibility:** Flexibility means further changes in the software should be accepted.
- **Portability:** Product must be portable from one system to another system.
- **Maintainability:** Software must maintain all data properly without any ambiguity, loss with back- up files.
- **Reliability:** The system has to be very reliable due to the importance of data and damages incorrect or incomplete data can do.

.1.4. Business Rules

If we do some work and start our business market have some rule and regulation in this Software.

There are mostly two kinds of users utilizing the framework, for example, User

- Administrator

Chapter 3

Use Case Analysis

Chapter 3: System Analysis

A use case diagram describes how a system interacts with outside actors. It is a graphical representation of the interaction among the elements and system. Each use case representation a piece of functionality that a system provides to its user. Use case identifies the functionality of a system.

3.1. Use Case Model

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. A use case diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well. The use cases are represented by either circles or ellipses.

Authentication System

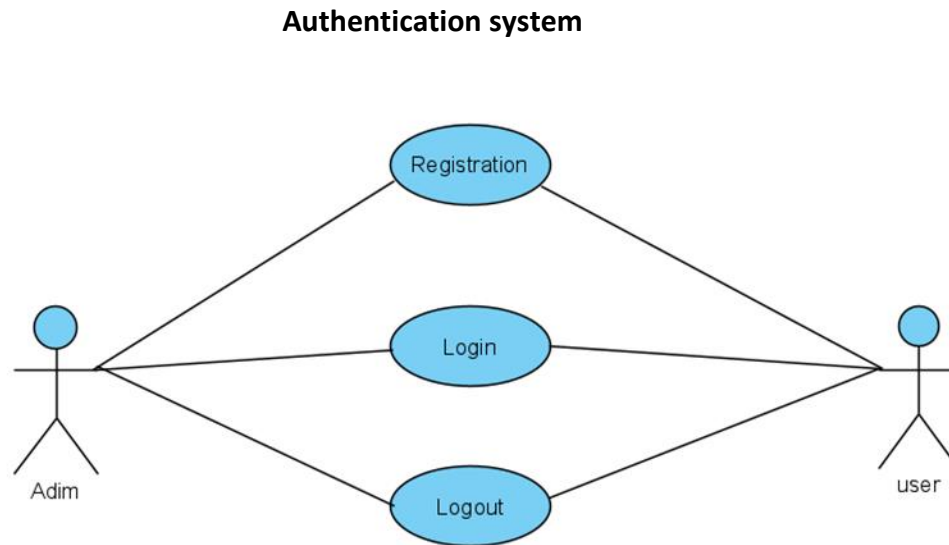


Fig 1 : use case authentication system

Contacts Form

Contact Form

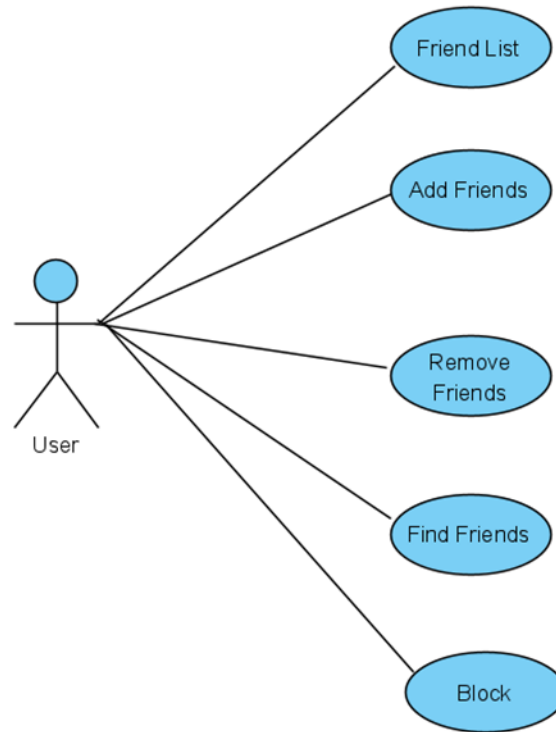


Fig 2: use case diagram Contact form

Chat Form

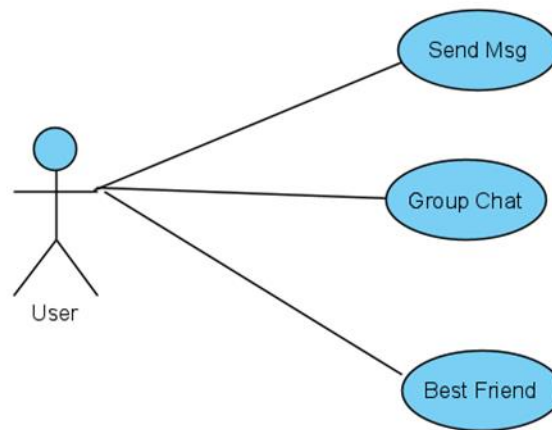


Fig 3: Use Case Diagram Chat Form

Maintenance

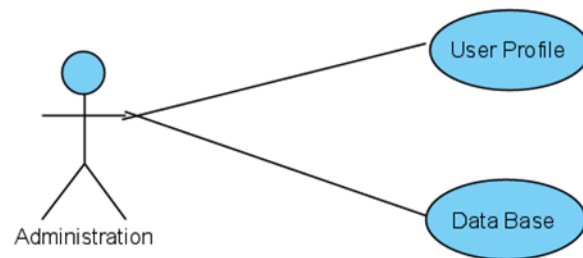









Fig 4: Use Case Diagram of Maintenance

Use Case Table

Level 0	Level 1	Level 2	Actor
Chat Application	Authentication System	Registrar Login Logout	  User Admin
	Contacts Form	Friend List Find Friend Add Friend Remove Friend Block Friend	 User
	Chat Form	Send Message Group Chat Best Friend	 User
	Maintenance	User's Profile Database	 Admin
	Monitor	Check History Feedback	  Admin User

Use case table of I Connect (Chat application)

3.2. Fully Dressed Use Cases

UC #	01	Ref:	
UC Name	Registration		
Description	User register in this app		
Actor (s)	User/Admin		
Stakeholders & interest	user/Admin: uses it to register on the site.		
Preconditions	N/A		
Post conditions	After Register Admin/User is able to view Home page		
Main Success Scenario	Action	Response	
	Customer opens Portal.		
	Customer selects Sign up option		
	Customer enters all required information		
	Customer Signup themselves into the system		
Alternative Case	If the functionality fails it would be due to network problem.		
Frequency of Occurrence	If discussed per day, Customer can use this functionality only once in a lifetime.		

UC #	02	Ref:	
UC Name	Contact Form		
Description	user can contact the people		
Actor (s)	User/Admin		
Stakeholders & interest	User/Admin: uses it to register on the site.		
Preconditions	N/A		
Post conditions	After Register Admin/User is able to view Home page		
Main Success Scenario	Action	Response	
	User opens Portal.		
	User selects Sign up option		

	User enters all required information	
	User Signup themselves into the system	
Alternative Case	If the functionality fails it would be due to network problem.	
Frequency of Occurrence	If discussed per day, Customer can use this functionality only once in a lifetime.	

UC #	03	Ref:	
UC Name	Chat Form		
Description	User can send message group message and best friend into the Portal		
Actor (s)	User/Admin		
Stakeholders & interest	User/Admin: uses it to register on the site.		
Preconditions	N/A		
Post conditions	After Register Admin/User is able to view Home page		
Main Success Scenario	Action	Response	
	User opens Portal and chat		
	Message txt on his portal		
	User can see the message		
	User can make a call and group call and best friend		
Alternative Case	If the functionality fails it would be due to network problem.		
Frequency of Occurrence	If discussed per day, Customer can use this functionality only once in a lifetime.		

UC #	04	Ref:	
UC Name	Maintenance		
Description	User profile administrator and data base		
Actor (s)	User/Admin		
Stakeholders & interest	User/Admin: edit the profile and make setting		
Preconditions	N/A		
Post conditions	User can se the profile pic and mainrance		
Main Success Scenario	Action	Response	
	User can make change profile		
	User can edit the profile pic		
	User can required all information		
	User maintenance themselves into the system		
Alternative Case	If the functionality fails it would be due to network problem.		
Frequency of Occurrence	If discussed per day, Customer can use this functionality only once in a lifetime.		

Chapter 4

System Design

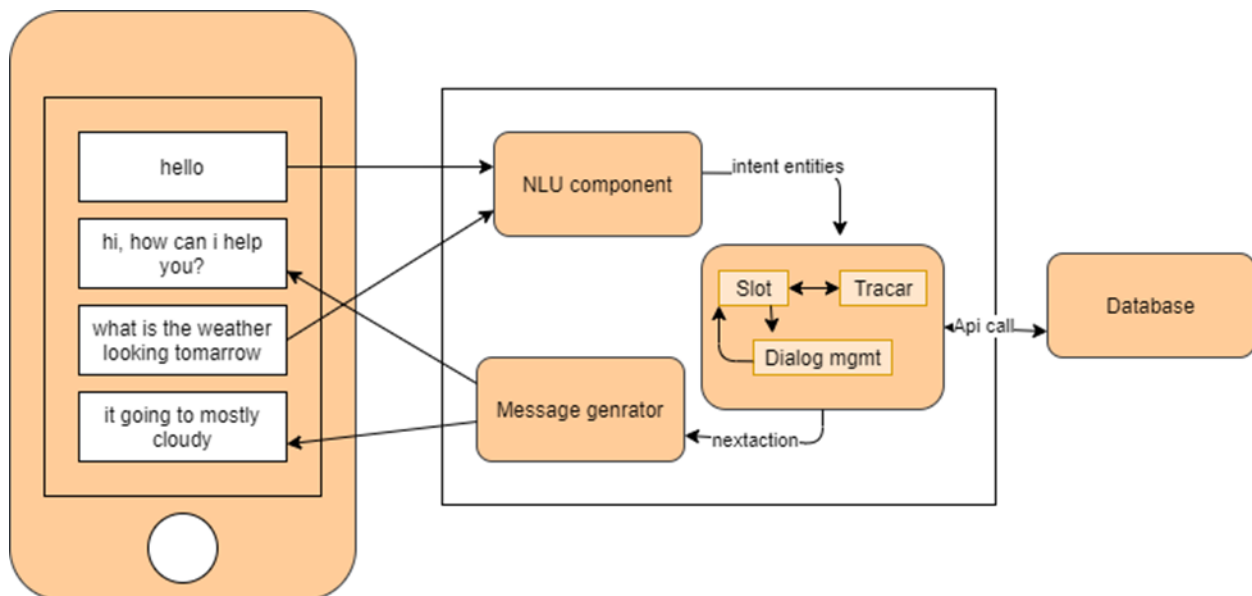
Chapter 4: System Design

System design is the process of **designing** the elements of a **system** such as the architecture, modules and components, the different interfaces of those components and the data that goes through that **system**.

The Chapter is all about how the software is going to work and how will the processes be executed as we see we have several diagrams that shows how really is the system performing and what will be the requirements to perform the operations required tasks as well as the diagrams and data clearly describes the process and shows a great help in understanding the

4.1. Architecture Diagram

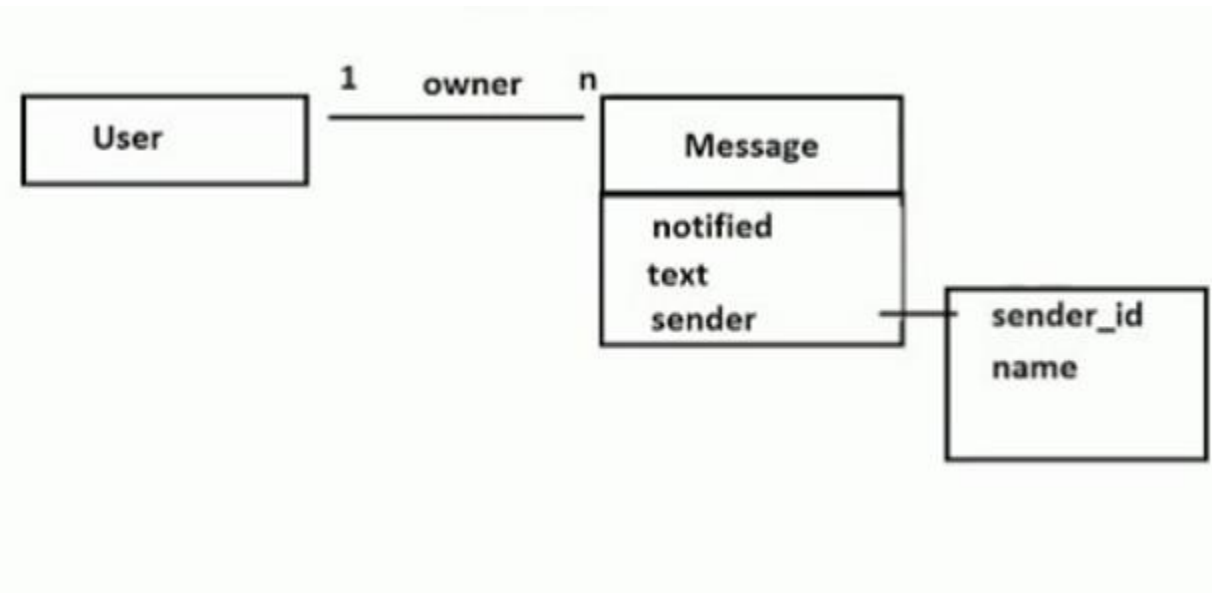
Following Architecture Diagram of e donation is a graphical representation to understand, clarify, and communicate ideas about the game structure and the user requirements that the game must support



Architecture Of I connect Application

4.2. Domain Model

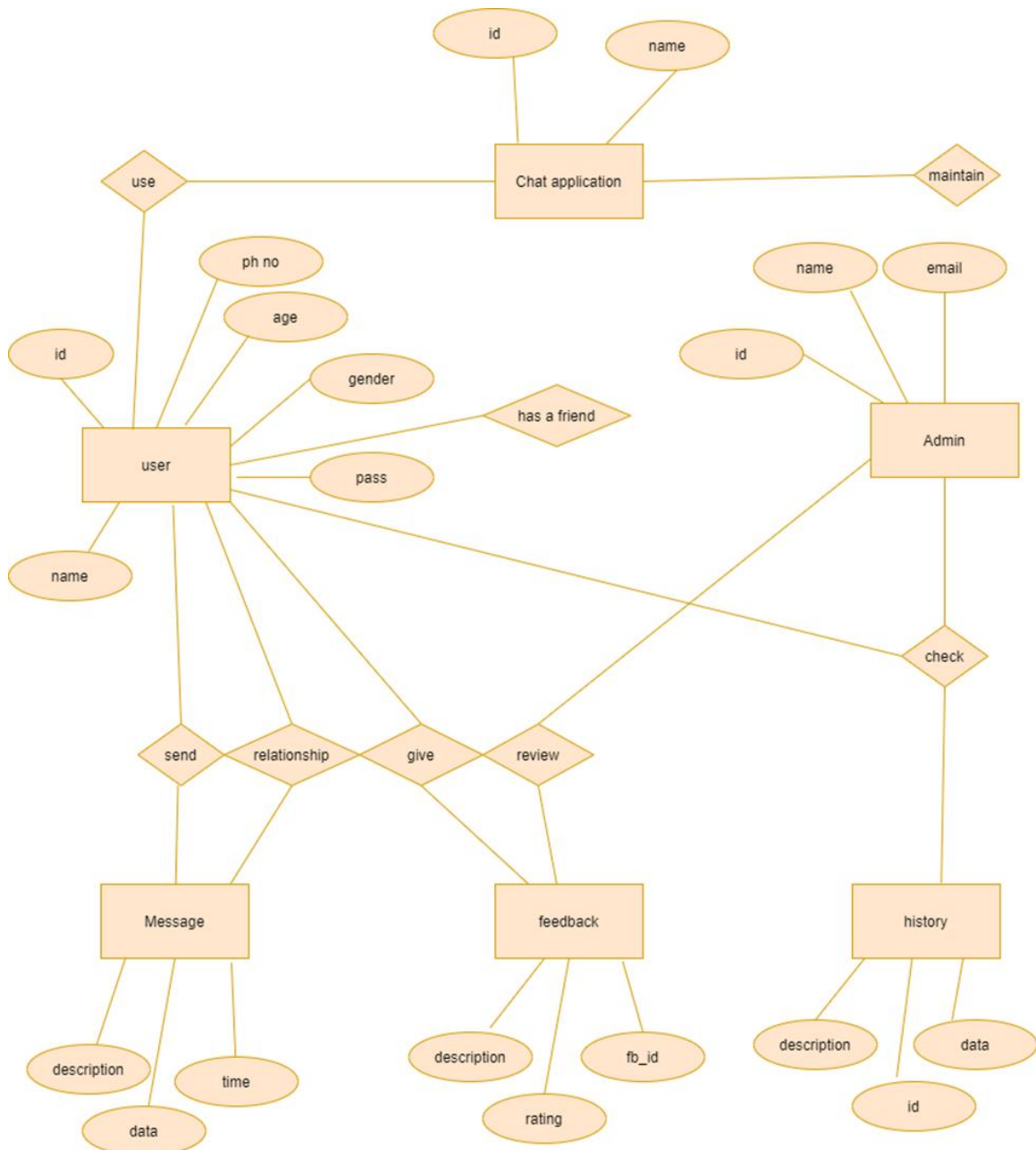
A domain model is a formal representation of a knowledge domain with concepts, roles, datatypes, individuals, and rules, typically grounded in a description logic in the following figure we use spiral model



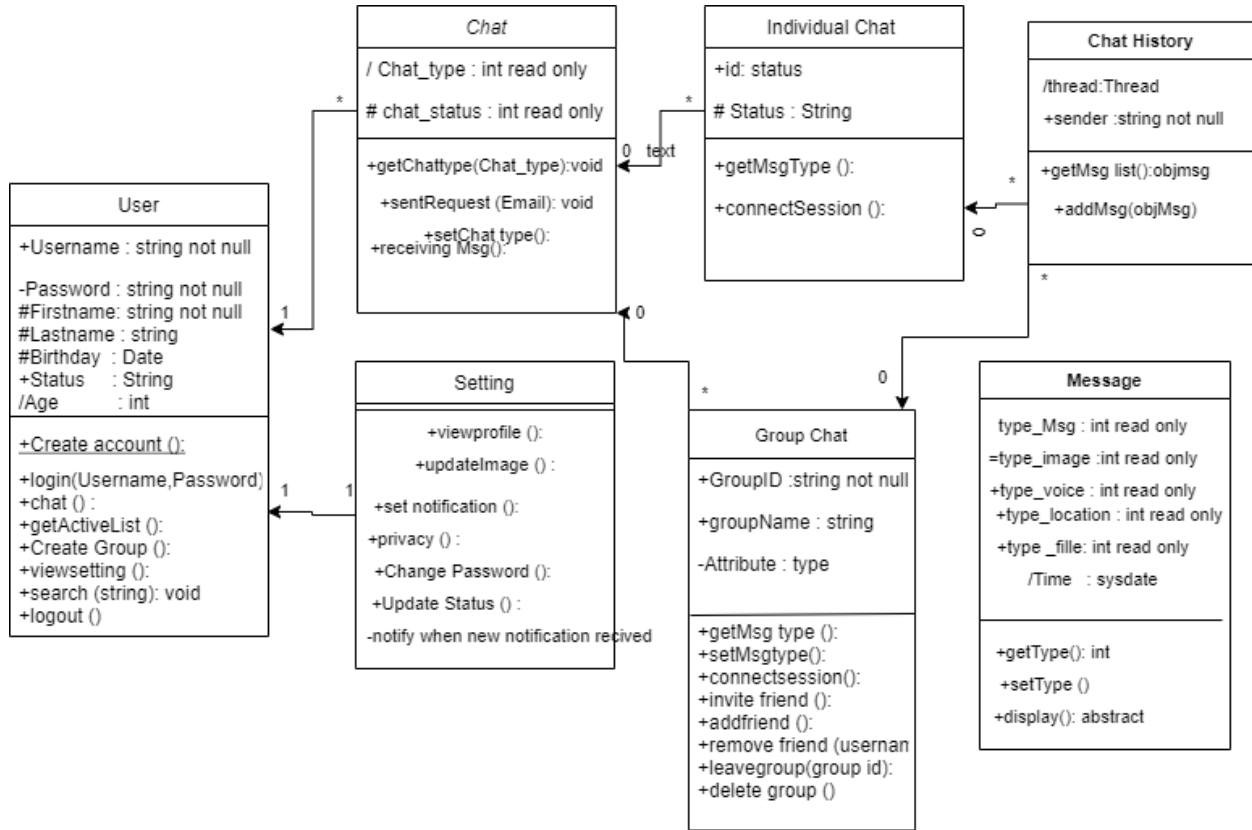
Domain Model

4.3. Entity Relationship Diagram with data dictionary

An entity-relationship diagram (ERD) is a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities.

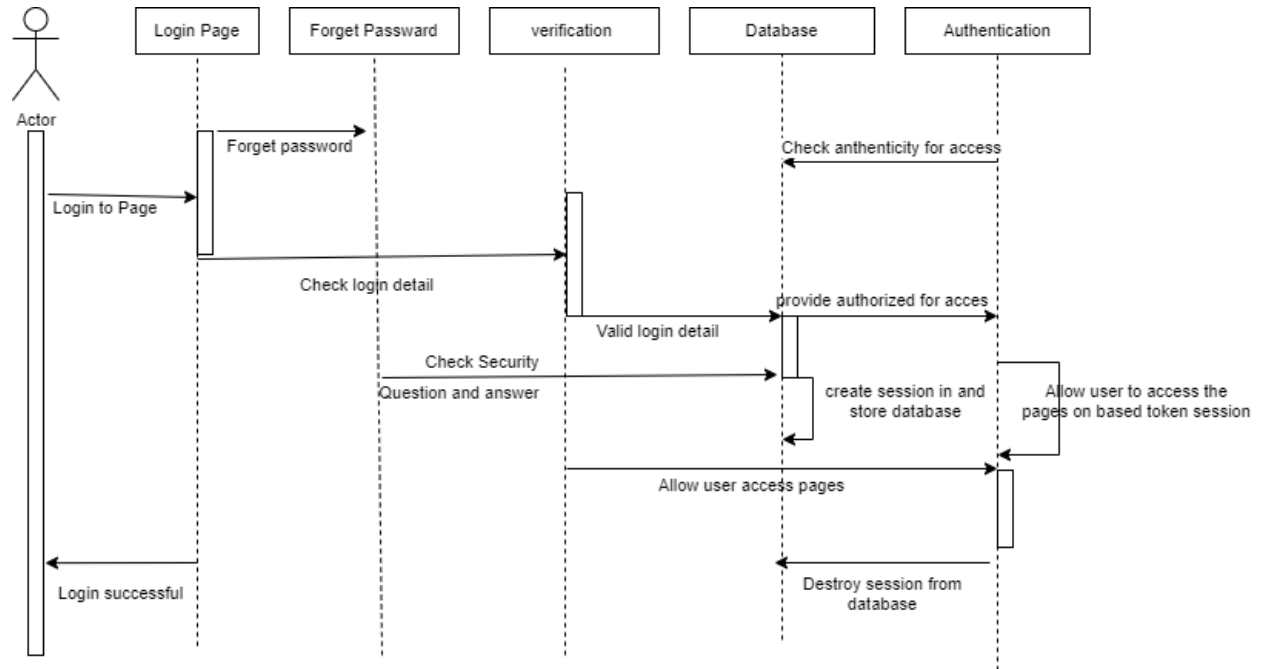


4.4. Class Diagram



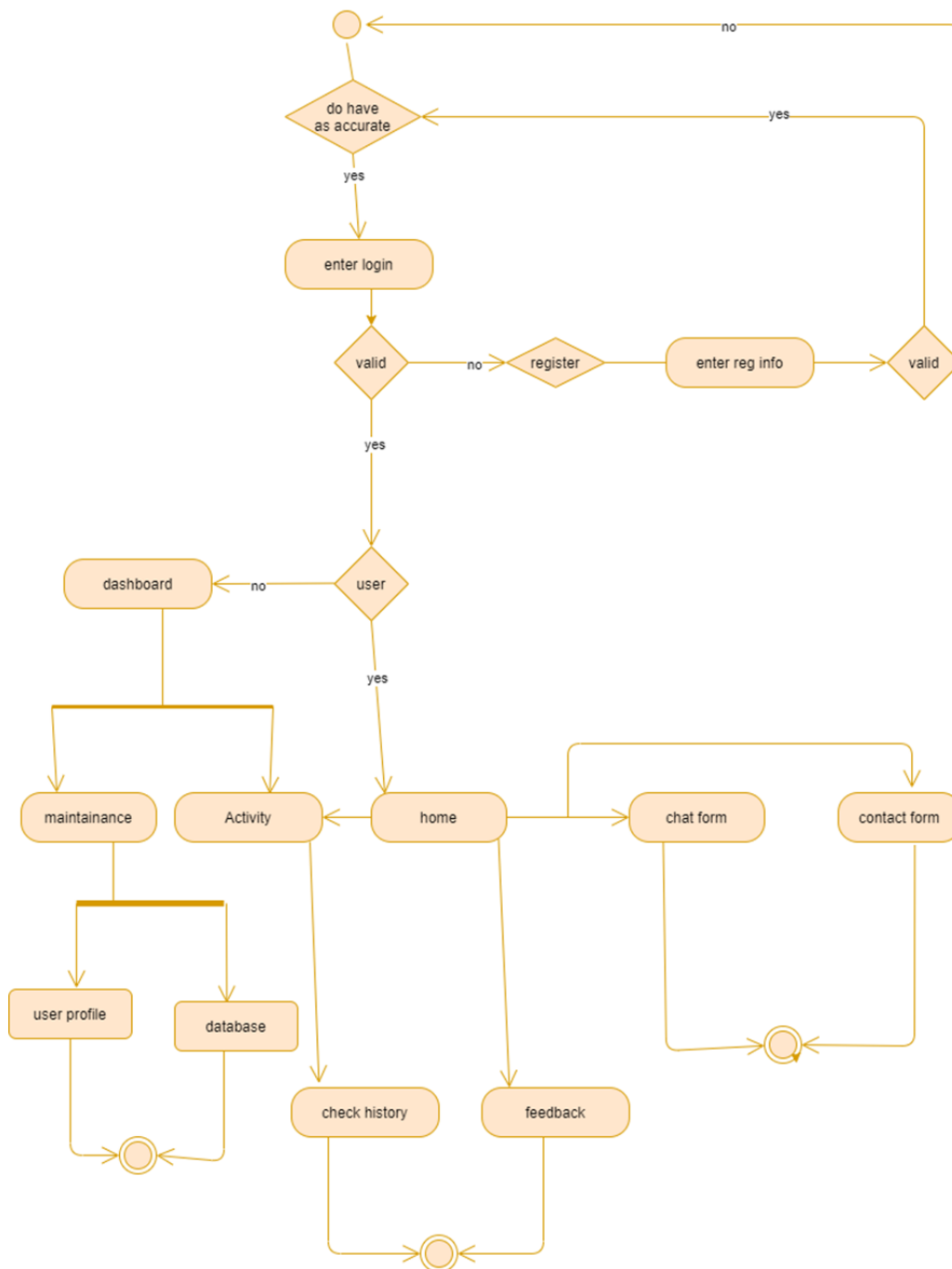
Class Diagram of I connect Messenger app

4.5. Sequence / Collaboration Diagram

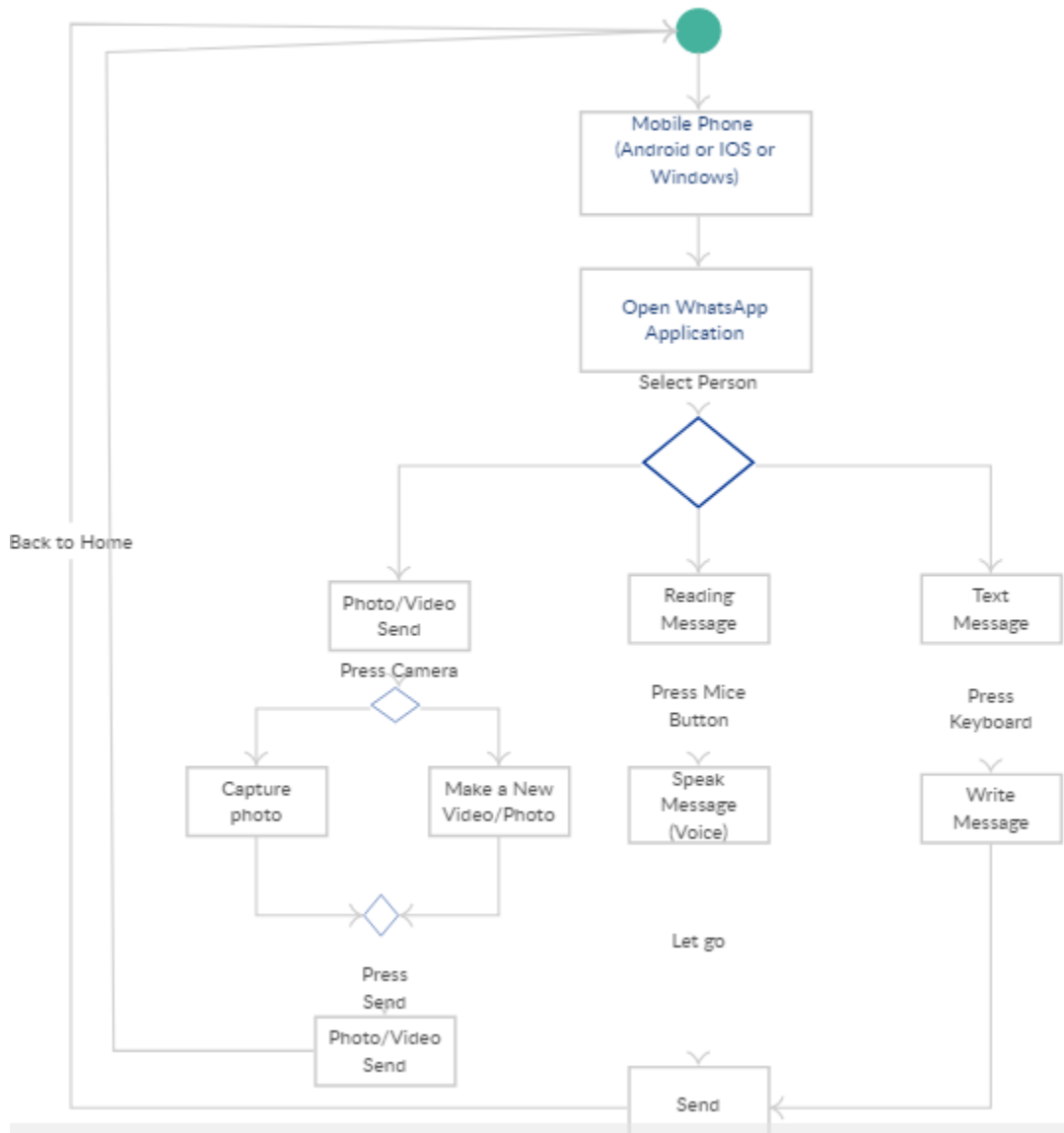


4.6. Activity Diagram

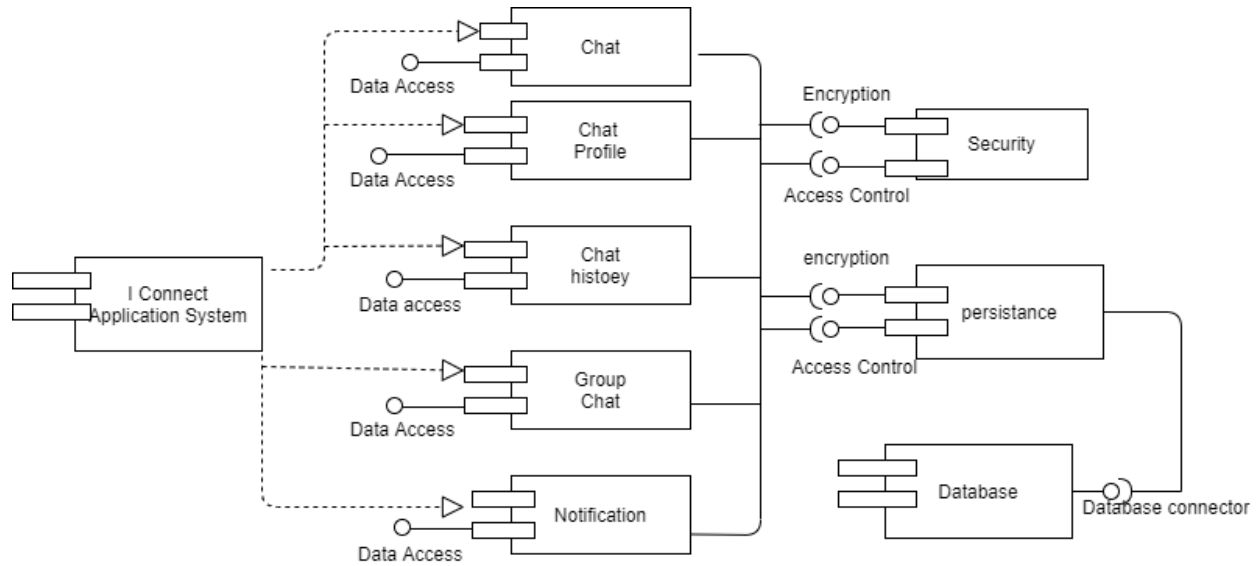
4. Activity diagrams are graphical representations of workflows of stepwise activities and action with support for choice, iteration and concurrency in following diagrams we present the graphical image of the system



4.1. State Transition Diagram

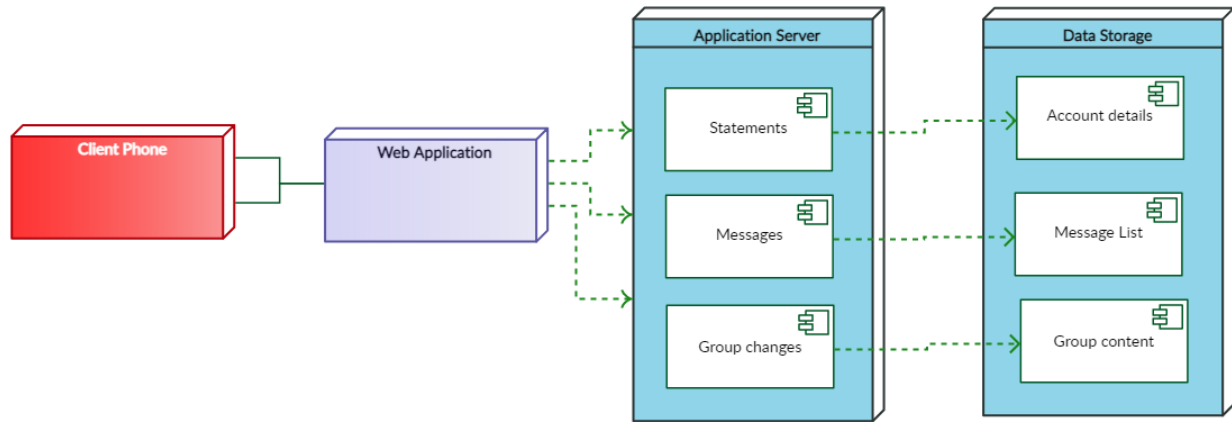


4.2. Component Diagram

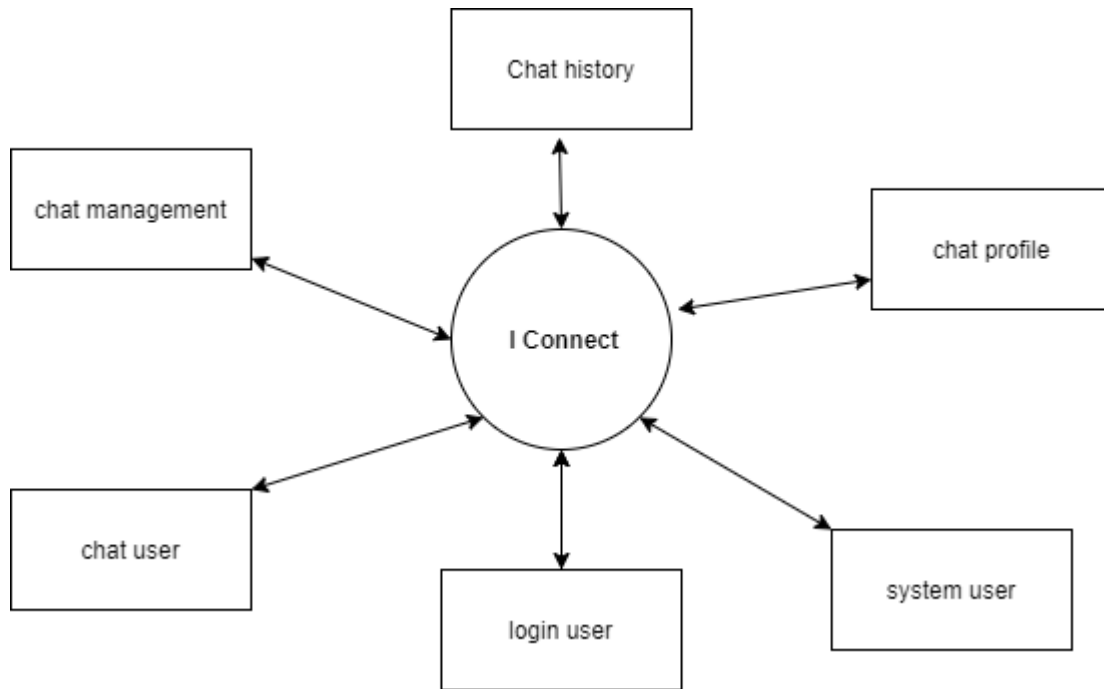


Component Diagram of I Connect (Messenger app)

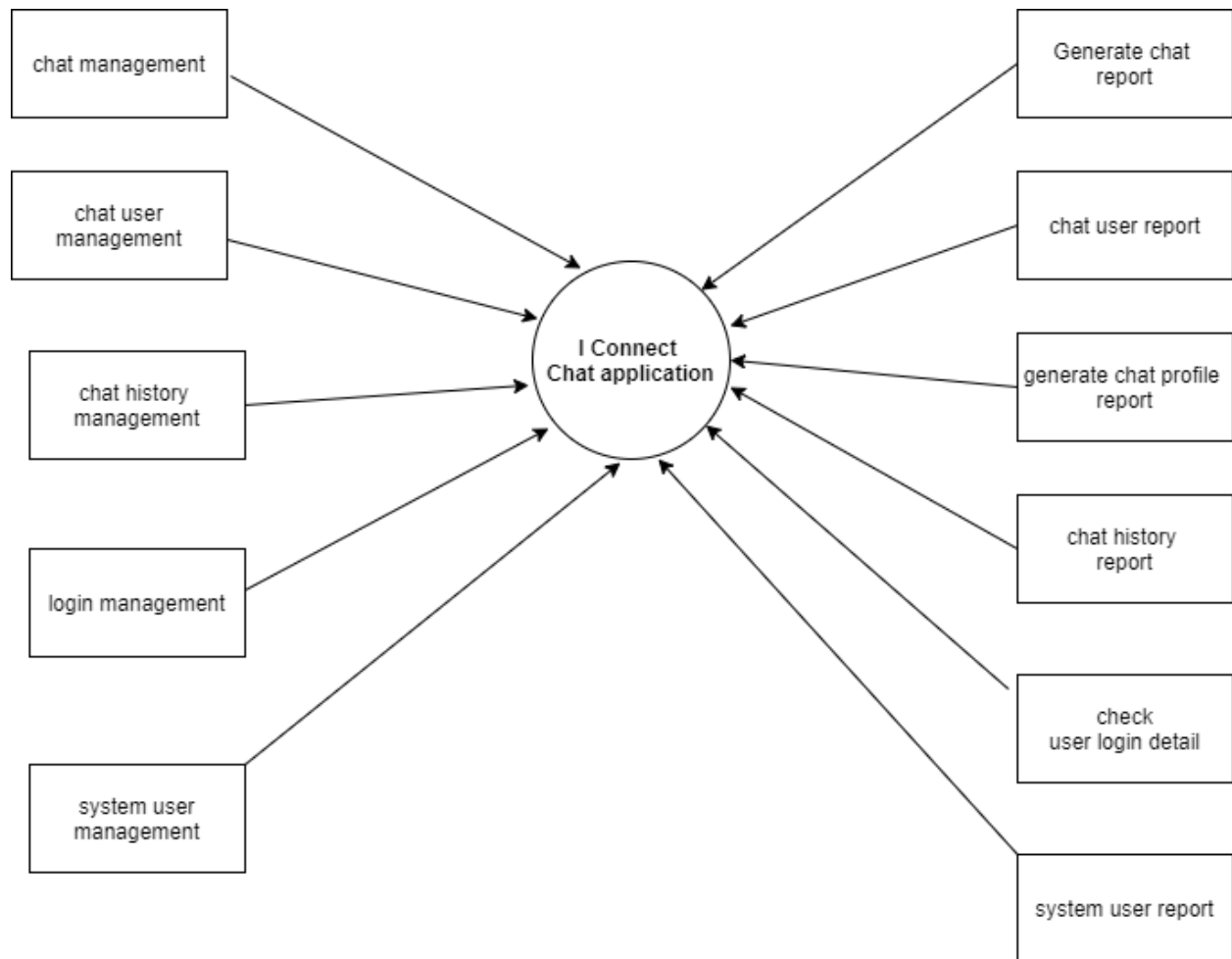
4.3. Deployment Diagram



4.4. Data Flow diagram [only if structured approach is used - Level 0 and 1]



Level 0



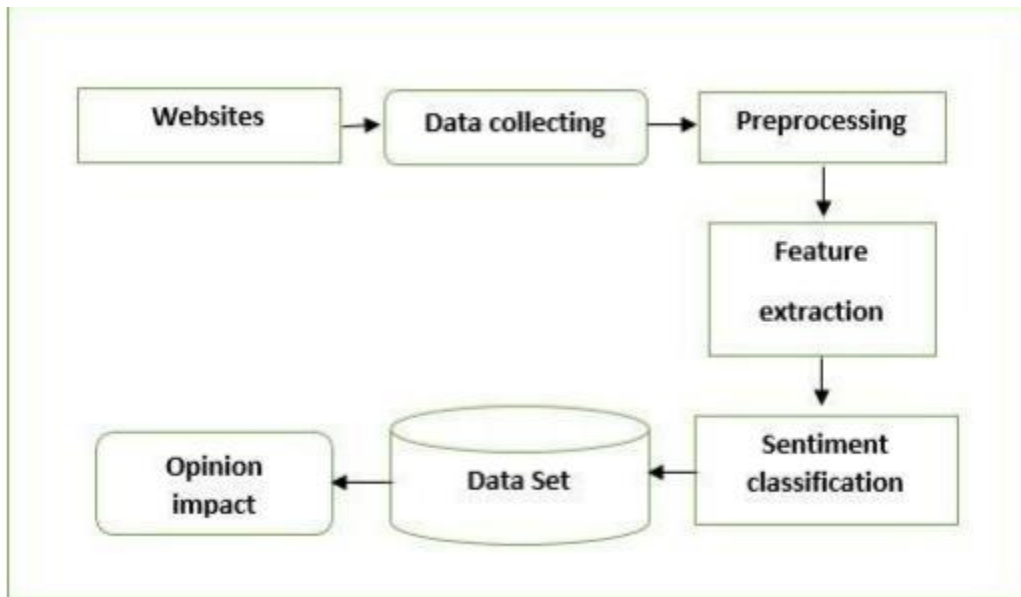
level 1 I Connect Chat application

Chapter 5

Implementation

Chapter 5: Implementation

In the project we tried to classify the product into three categories - positive, negative and neutral sentiment analysis. Figure represents the implementation process. The implementation steps may include



5.1. Important Flow Control/Pseudo codes

- Services that this application will provide are the following: ·
- Users who want to chat to friend and other people.
- They will be able to create a profile with the necessary information (contact, Account no etc.) · Add/check reviews.
- Users who want to register themselves.
- They will be able to access profiles based on the criteria they specify ·
- Add/check reviews.

5.1. Components, Libraries, Web Services and stubs

- Gson. Gson is a Java library used for serializing and deserializing Java objects from and into JSON. ...
- Retrofit. From their site: "Retrofit turns your REST API into a Java interface." ...
- Event Bus. ...
- Active Android. ...
- Universal Image Loader

5.1. Deployment Environment

- In Deployment environment we work on android studio for build our android based application

A **deployment diagram** shows the physical relationships among software and hardware components in the delivered system. A deployment diagram is a good place to show how components and objects are routed and move around a distributed system.

5.1. Tools and Techniques

Tool	Android Studio 4.1
Languages	JAVA, XML
Data base	Firebase

5.2. Best Practices / Coding Standards

- Testing on android studio
- Use java language
- Use xml language

5.1. Version Control

- Now we just working on version 4 after the passage of time we changed the version. From the start of the project number of versions updated and finalized now version 4.1.

Appendices

Appendix A: Information / Promotional Material

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A.1. Broacher

A.2. Flyer

A.3. Standee

A.4. Banner

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Reference and Bibliography

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- [1] M. Sher, M. Rehman, "*Title of the Paper*" Conference name/Journal Name, Edition, Volume, Issue, ISBN/ISSN, PP, Publisher/City-Country, Year.
- [2]

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