ABSTRACT

This document deals with the topic of Android Based System namely “Smart Relier”. Smart Relier will contain a few unique features. Additionally, Smart Relier Chat will ensure the user can maintain active communication with other people despite evolving network conditions (in such condition where there is no network, the system won't function properly).It also has one unique feature of Near By Notify. Hence Smart Relier Android system has the features like SOS Security, chat ,user can share their location & files.

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ACKNOWLEDGEMENT

We have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals. We would like to extend our sincere thanks to all of them.

We are highly indebted to our internal project guide Prof.Priyang Bhatt & Mr.Amit Patel(external guide) for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in execution of the project.

We would like to express my gratitude towards my parents& friends for their kind co-operation and encouragement which help us in completion of this project.

Our thanks and appreciations also go to my colleague in developing the project and pe

CHAPTER 1: INTRODUCTION

1.1. Problem summary and introduction

Smart Relier is basically a chatting application which helps us to communicate. This application is helpful for both teenagers as well as professionals.

Smart Relier is an Android platform application which allows users to perform chat, and one new feature is added that nearby notification.[1] The system is expected to evolve over several different releases, ultimately to other platforms. It can be used as real time application for day to day life.

1.2. Aims and objectives of study

The Android chat Application mainly aims to simplify users day to day interaction with people. It's a flexible application in which users can perform activities such as they can share their location ,Instant Messaging.

Our Plan:

- To make our project implement with new and lots of features.
- It facilitates user to send SOS alert to pre defined contacts.
- User gets a proper chatting application so they can enjoy.

1.3. Problem Specifications

1.3.1 Screen Login/Registration

- Login screen will display text fields for inputting user ID and password, or if user has never registered, it will direct users to the registration screen.[2]
- Registration screen will take several details of the user. After submitting detailed information the data will be stored on the database. Using the Username the user will login in his/her account.

1.3.2 Main Screen

- The Main Screen will show that how the screen will appear after the user login.
- The Main Screen will provide an option to find a chat partner.
- The Main Screen will display the user friend's recent activities[3]

1.3.3 Chat Screen

- Smart Relier will display the option to enable four things as follows:
  - Instant Messaging(IM)
  - Locate me
  - SOS
  - Nearby Notify
- Smart Relier will display the option to add another person as a friend.
- Smart Relier will display the one more option of settings which has following things:
  - About (gives information of the chat system)
  - Profile
  - Help
  - Account Information
  - Privacy
  - Block/Unblock
  - Built in App-lock

1.3.4 Notification

Whenever any new message will be received it will show some notification in the device .

Whenever any new person sends you request the notification will be received.

1.3.5 Security

- For security reasons if any unknown person wants to be your friend you will get a notification The notification will show the profile of the person who has sent request but that person won't be able to see the profile of the opposite person until that person save his contact number or say accepts his request.

- The unknown person cannot send you any message , any data or any other media until the request is not accepted.

1.4 Literature review and Prior Art Search(PAS)

Overview

"Smart Relier" is an Android Chat Application which contains a few unique features. Additionally, Smart Relier will ensure an user can maintain active communication with other people despite evolving network conditions (in such condition where there is no network, the system won't function properly).It also has one unique feature of Nearby notification. Hence the Smart Relier Android system has some features of Location Sharing, built in applock, SOS services to predefined contacts.[4]

Scope

This document covers the whole definition of the Android based Peer-to-Peer Chat System Project. It basically includes the requirements for IM(Instant Messaging) ,location sharingand one new feature of nearby notify. The scope of the project is limited to Android platform.

Purpose and Objectives

1. The 1st primary objective of Android chat application is to enable the user to simplify the day to day interaction of user with people in contact.
2. To start with the application, the user has to register him/her. For registering process the user should provide the username and password.
3. After providing an username and a password the system will verify the user and then allow the user to Login.

4. After Login the user will get list of all the people in contact and can perform Instant Messaging, Share their locations, file sharing, get notify with the nearby person around his/her..
5. Database of username and password is created & back up will be taken to protect in case of loss of database

Feasibility Study

A feasibility study is undertaken to determine the possibility or probability of improving the existing system or developing a completely new system. It helps to obtain an overview of the problem and to get rough assessment of other feasible solution exists. This is essential to avoid committing large resources to project and then repent on it later. [5]

There are 3 aspects in feasibility study portion of the preliminary investigation.

1) Operational Feasibility of the Project.
2) Technical feasibility.
3) Financial and economical feasibility.

Operational Feasibility

Proposed system is advantageous only if meets the organizations operating requirements. In simple words this test of feasibility decides if the system will work when it is developed and implemented. Are there any hindrances for system implementation? Here are questions that help to test the operational feasibility and answers to justify the operational feasibility of the project.

Is the user happy with existing system?

In current system users are not able to enjoy all the facilities such as easily. Some provides better chatting. So there is a requirement of such an Application which provides all the facilities appropriately to the last mile.

Is there sufficient support for project from management?

Yes, the management people are quite keen to see the new system developed. The user is also eager to implement the system and gain more business with more ease.

Have users been involved in the planning and development of the project?

Yes, the user and Admin have actively contributing in the development and analysis of the system.

Will the proposed cause harm and will it produce poor result in any respect area? Will there be loss of control in is? Will user be affected in an undesirable way?

No, the system is bound to provide enhanced features with ease of operation.

2.4.2 Technical Feasibility

Technical feasibility determines whether the work for the project will be done with the present equipment, current procedures, existing software's technology and available personnel.

Does the current technology can do what is suggested?

Yes, with current technology it's possible to develop what's planned. There are many languages, tools, front end and back end to design system.

Financial Feasibility

A system that can be developed technically and that will be used if installed must still be good investment for the organization. Financial benefits must equal or exceed the investment. Following were the major points considered while testing for the economic feasibility of the system. *The cost of the hardware and software* The cost of hardware and software will not be too high. It's one time investment in the system. *The benefits in the form of more business and citizen satisfaction* The system will be very useful to the user; the service provider has to manage all the information about the citizens.

Result analysis

The purpose of this study is to analyze factors affecting how users can interact with people in contact through Internet. One of the objectives of this study is covering the shortcomings of previous studies that didn't examine main factors that influence on Android chat application. This goal has been followed by using a model examining the impact of perceived risk, infrastructural variables and return policy on attitude towards android chat application. This study can be considered as an applied research from purpose perspective and descriptive-survey with regard to the nature and method (type of correlation).The study identified that financial risks and non-delivery risk negatively affected attitude toward online chatting. Results also indicated that domain specific innovativeness and subjective norms positively affect chatting between users. Furthermore, attitude towards chat application has been also positive.

I. The purpose of this survey was to see how much time the subjects spent on chatting with people personally or in group and to see what kind of system they used for chatting such as phone, tablet, desktop or laptop. It was also asked whether they were satisfied with the present android chat application. The population drew from was our

family and friends. The responses were voluntary so this is a convenience sample. Some of the persons we asked to participate never got back to us in time. This is not a random sample.

The questions we asked were:

I. What kind of system did our respondents use to interact with people in contact online? Were they satisfied with the working of existing application till date? How many hours per month did the respondents spent interacting online as well as offline?

II. II. What kind of device or system did our respondents use to interact with people in contact online as well as offline?It was seen during the survey that the users used only android based devices and Android Applications. Android platform is now very famous for mobiles and tablets.

1.5 Plan of work

- Firstly user have to register him/herself [2]. User provides Username and password.
- An unique ID is generated using which user can login.
- Login is done only once at the starting of the application.
- After Login user can enjoy all the features of the application such as near by notify, locate me, built in app-lock
- It also allows File Sharing.

1.6 Materials/Tool requirements

1.6.1 Functional requirement

This section provides requirement overview of the system [1] .Various functional modules that can be implemented by the system will be :

- **Registration:**

To use the chat application the user have to register him/herself. For registering the user must provide the username and password. It will ask whether its a new “NEW USER” or “REGISTERED USER”.

- **Login:**

After verifying username and password the user can login . Using this unique ID the user can Login. The user have to Login only once at the starting.

- **Main Screen:**

The Main Screen will show that how the screen will appear after the user login. It will provide an option to find a chat partner. The Main Screen will display the user friend's recent activities.

- **Chat Screen:**
  - Smart Relier will display the option to enable four things as follows:
  - Locate me
  - Locate my Friend
  - SOS to Pre-defined Contacts
  - Near By Notify.
  - About (gives information of the chat system)
  - Profile
  - Help
  - Account
  - Privacy
  - Block/Unblock
- **Notification:**

Whenever any new message will be received it will show some notification in the device. whenever any new person sends you request the notification will be received.

1.6.2Non Functional requirement

Security:

The system use SSL (secured socket layer) in all transactions that include any confidential user information. The system must automatically log out all users after a period of inactivity. The system's back-end servers shall only be accessible to authenticated administrators. Sensitive data will be encrypted before being sent over insecure connections like the internet.

Reliability:

The system provides storage of all databases on redundant devices with automatic switchover. The reliability of the overall program depends on the reliability of the separate components. The main pillar of reliability of the system is the backup of the database which is continuously maintained and updated to reflect the most recent changes. Thus the overall stability of the system depends on the stability of container and its underlying operating system.

Availability:

The application should be available at all times, meaning the user can access it only when internet is supported, only restricted by the down time of the server on which the system runs. In case of a of a hardware failure or database corruption, a replacement page will be shown. Also in case of a hardware failure or database corruption, backups of the database should be retrieved from the server and saved by the administrator. Then the service will be restarted. It means 24 X 7 availability.

Maintainability:

A commercial database is used for maintaining the database and the application server takes care of the site. In case of a failure, a re-initialization of the program will be done. Also the software design is being done with modularity in mind so that maintainability can be done efficiently.

Portability:

The application is Android and Java language based. So the end-user part is fully portable and any system having internet support should be able to use the features of the system,

including any hardware platform that is available or will be available in the future. The system shall run on any mobile phone or tablets etc.

1.6.3Hardware Requirement

HARDWARE INTERFACE

Processor : X86 Compatible processor
with 1.7 GHz Clock speed
RAM : 512 MB or more
Hard disk : 20 GB or more
Device : Android Phones, Tablets

1.6.4 Software Requirement

SOFTWARE INTERFACE

Operating System : Android
Front end : Eclipse IDE
Back end :Wamp Server

1.7 Tools and technology

For this proposed solution, Below Tools & Technology will be used:

ANDROID

Android is an operating system based on the Linux kernel and designed primarily for touch screen mobile devices such as smart phones and tablet computers. Initially developed by Android, Inc., which Google backed financially and later bought in 2005, Android was unveiled in 2007 along with the founding of the Open Handset Alliance: a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices. The first Android phone (HTC Dream) was sold in October 2008.

Android is open source and Google releases the source code under the Apache License. This open-source code and permissive licensing allows the software to be freely modified and distributed by device manufacturers, wireless carriers and enthusiast developers. However, most Android devices ship with additional proprietary software. Additionally, Android has a large community of developers writing applications ("apps") that extend the functionality of

devices, written primarily in the Java programming language. In October 2012, there were approximately 700,000 apps available for Android, and the estimated number of applications downloaded from Google Play, Android's primary app store, was 25 billion. A developer survey conducted in April–May 2013 found that Android is the most popular platform for developers, used by 71% of the mobile developer population.

Android is the world's most widely used Smartphone platform, overtaking Symbian in the fourth quarter of 2010. Android is popular with technology companies who require a ready-made, low-cost, customizable and lightweight operating system for high tech devices. Despite being primarily designed for phones and tablets, it also has been used in televisions, games consoles, digital cameras and other electronics. Android's open nature has encouraged a large community of developers and enthusiasts to use the open-source code as a foundation for community-driven projects, which add new features for advanced users or bring Android to devices which were officially, released running other operating systems.

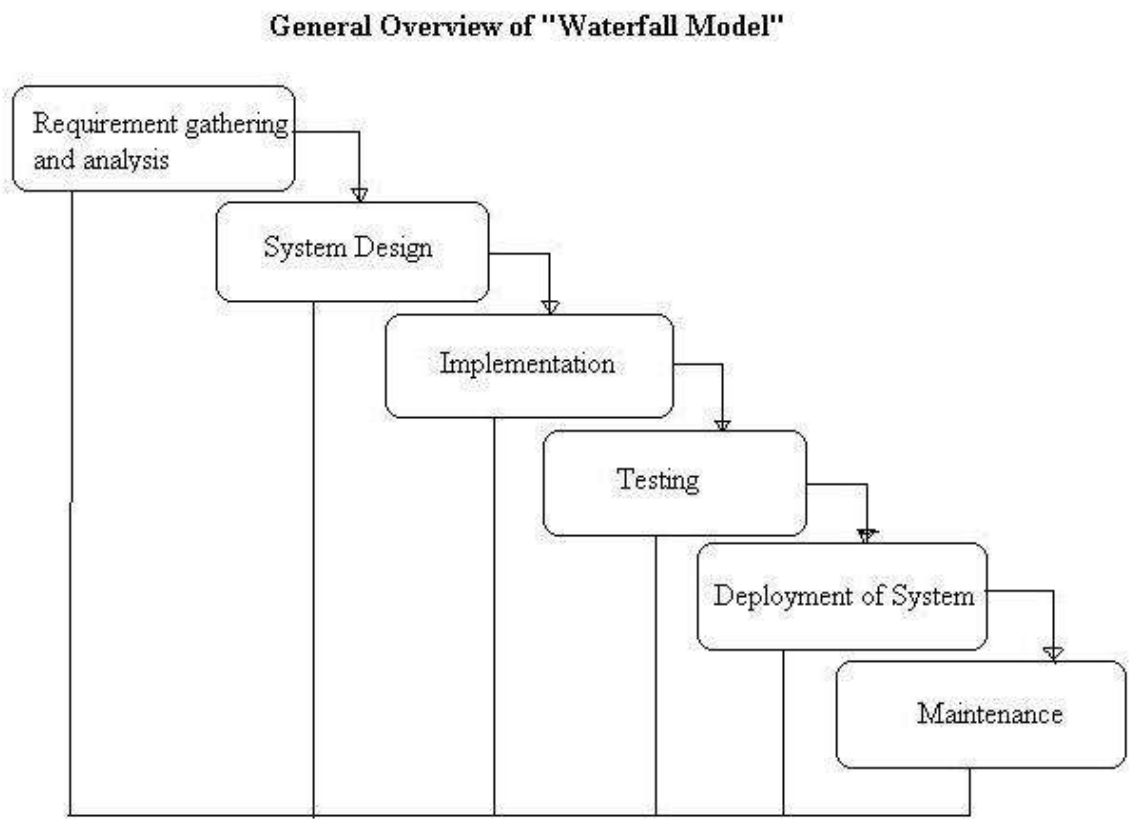
WAMP Server

WAMP Server is a simple, yet powerful Open Source Software relational database management system that uses SQL and PHP Myadmin. It works on Local Host. With PHP, you can connect to and manipulate databases. MySQL is the most popular database system used with PHP. The data in MySQL is stored in tables. A table is a collection of related data, and it consists of columns and rows.

CHAPTER 2:
DESIGN: ANALYSIS, DESIGN METHODOLOGY AND IMPLEMENTATION STRATEGY

2.1. System Design Architecture

Waterfall-model:



The Waterfall Model was first Process Model to be introduced. It is also referred to as **a** linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed fully before the next phase can begin. This type of model is basically used for the for the project which is small and there are no uncertain requirements. At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project. In this model the testing starts only after the development is complete. In waterfall model phases do not overlap.

Advantages of waterfall model:

- This model is simple and easy to understand and use.
- It is easy to manage due to the rigidity of the model – each phase has specific deliverables and a review process.
- In this model phases are processed and completed one at a time. Phases do not overlap.
- Waterfall model works well for smaller projects where requirements are very well understood.

Disadvantages of waterfall model:

- Once an application is in the testing stage, it is very difficult to go back and change something that was not well-thought out in the concept stage.
- No working software is produced until late during the life cycle.
- High amounts of risk and uncertainty.
- Not a good model for complex and object-oriented projects.
- Poor model for long and ongoing projects.
- Not suitable for the projects where requirements are at a moderate to high risk of changing.

When to use the waterfall model:

- This model is used only when the requirements are very well known, clear and fixed.
- Product definition is stable.
- Technology is understood.
- There are no ambiguous requirements
- Ample resources with required expertise are available freely
- The project is short.

2.2. Diagrams (UML diagrams, E-R diagrams and DFD)

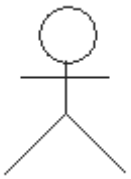
2.2.1: Use Case

Use Case Diagram is a representation of a user's interaction with the system and depicting the specifications of a use case. A Use Case Diagram can portray the different types of users of a system and the various ways that they interact with the system.

- Set of use cases enclosed by system boundary, communication association between actors and use cases, and generalization among use cases.

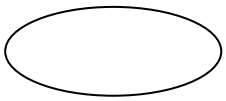
Actors:-

- External factors that interacts with the system from the user's perspective.



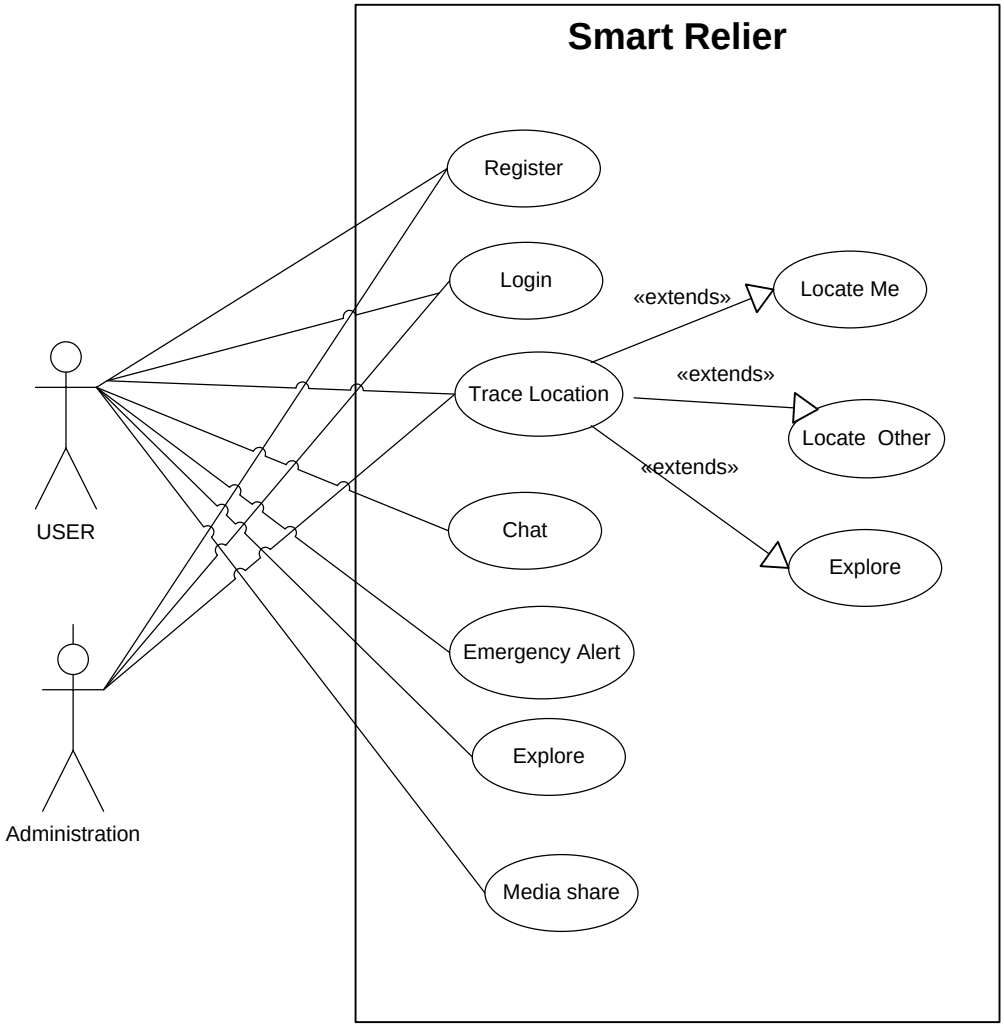
Use Cases:-

- Set of scenarios that describe how actor uses the system.
- Represented as,



Relationship:-

- Communication – communications with the use case normally.
- Uses – Shown by generalization arrow from the use cases.
- Extends – Used when one case does more than another that is similar to it.


Smart Relier
Register
Login
Trace Location
Chat
Emergency Alert
Explore
Media share
«extends»
Locate Me
«extends»
Locate Other
«extends»
Explore
USER
Administration

2.2.2 Activity Diagram

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams are intended to model both computational and organizational processes (i.e. workflows). Activity diagrams show the overall flow of control. Activity diagrams are constructed from a limited number of shapes, connected with arrows. The most important shape types:

- *rounded rectangles* represent *actions*;
- *diamonds* represent *decisions*;
- *bars* represent the start (*split*) or end (*join*) of concurrent activities;
- a *black circle* represents the start (*initial state*) of the workflow;
- an *encircled black circle* represents the end (*final state*).

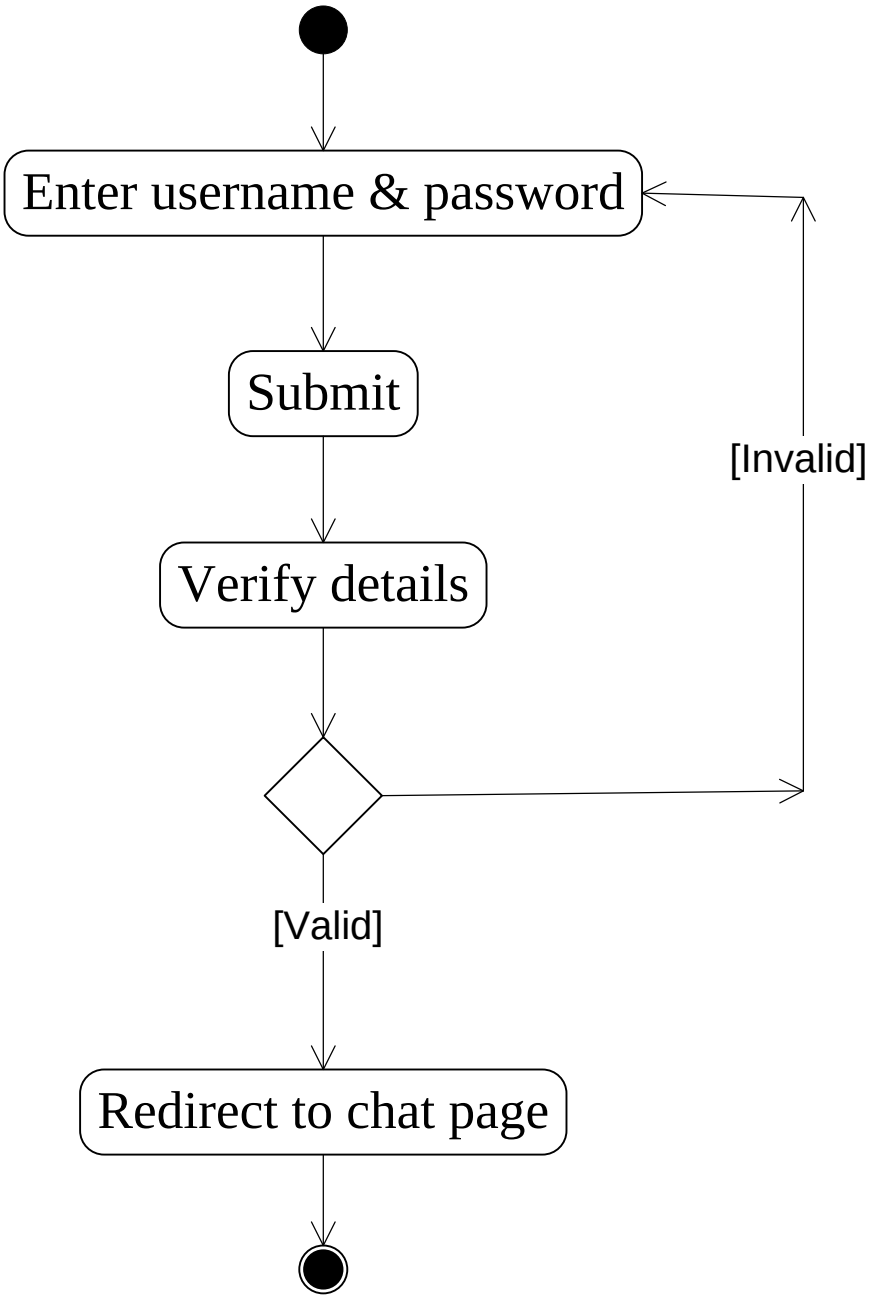


Fig. 3 Activity Diagram for Registration

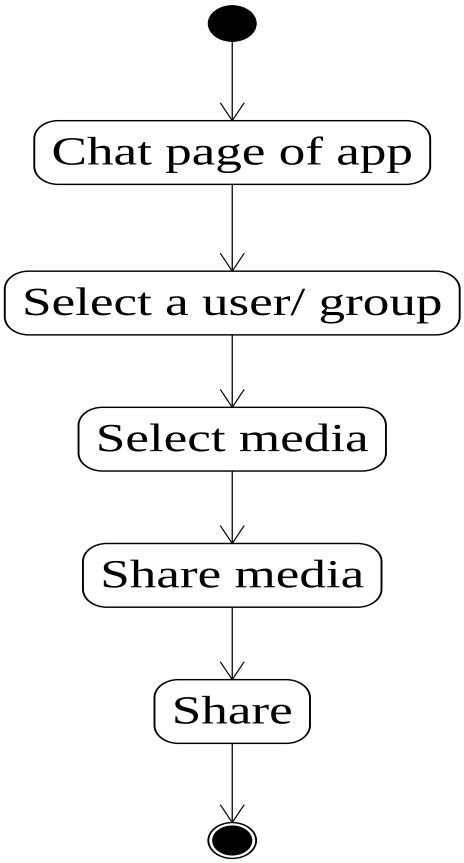


Fig.4 Activity Diagram of media share

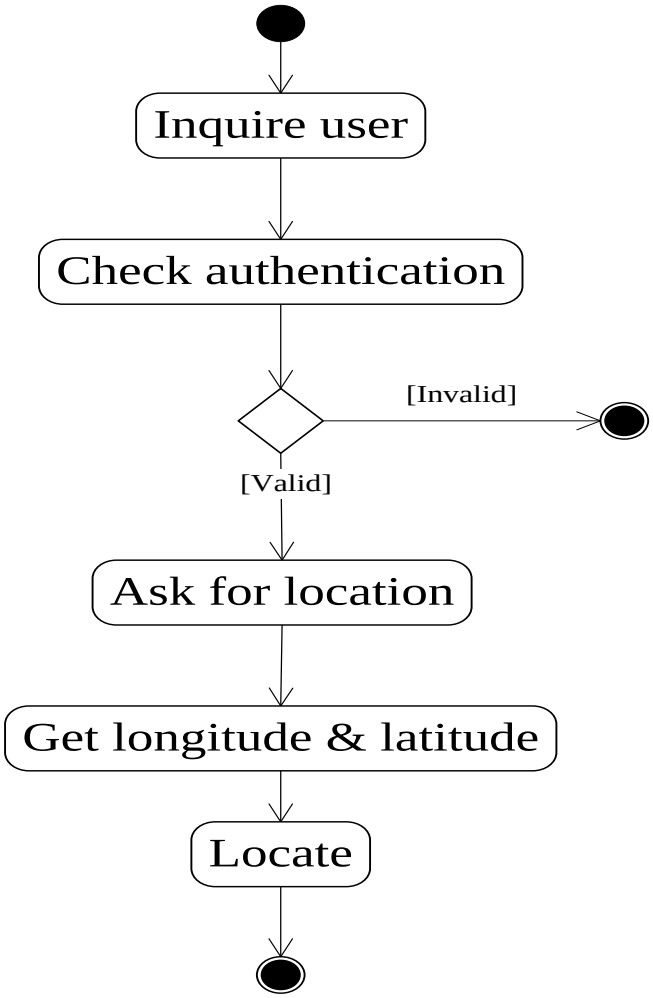


Fig. 5 Activity Diagram of Locate Others

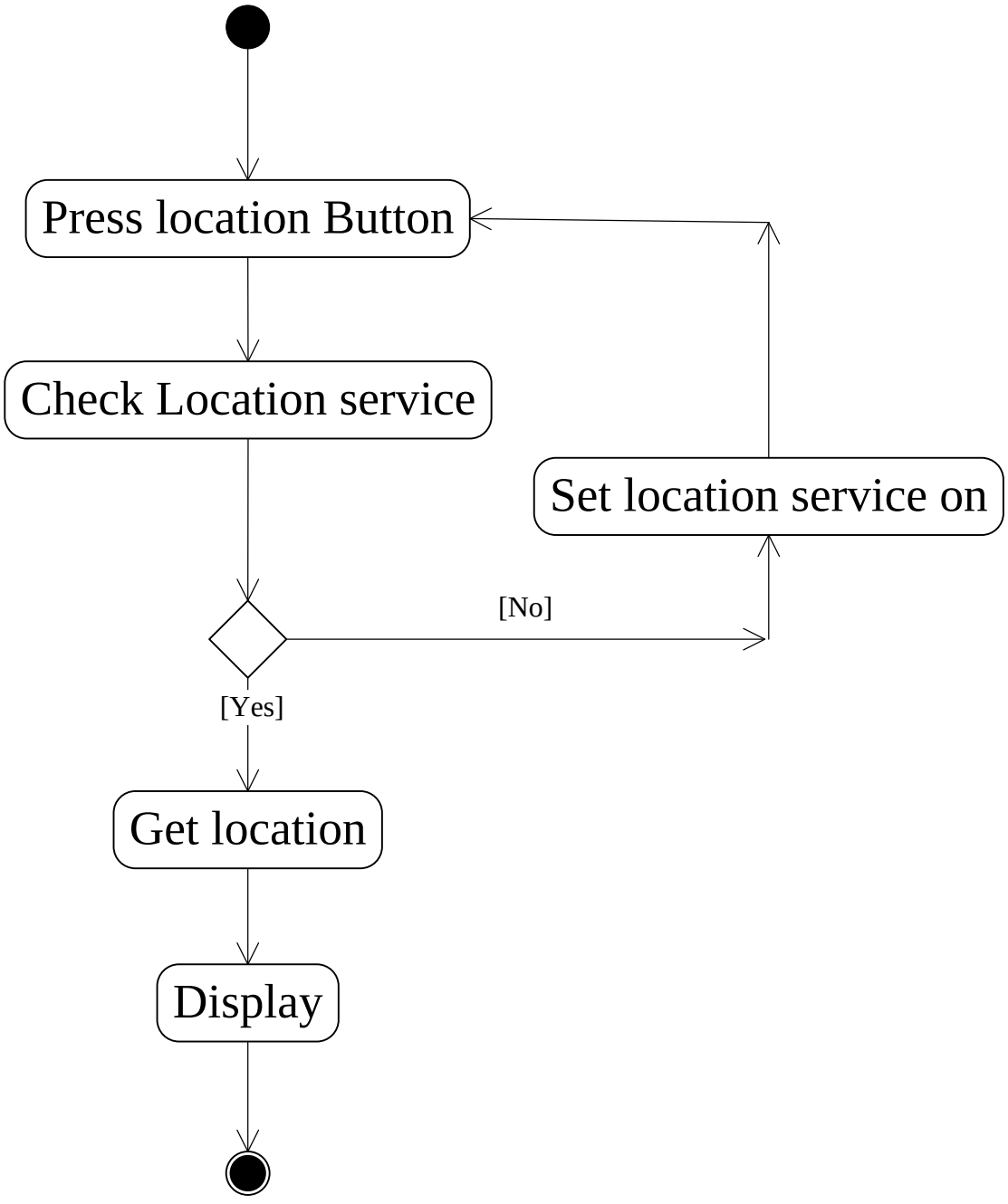


Fig. 6 Activity Diagram of Locate Me

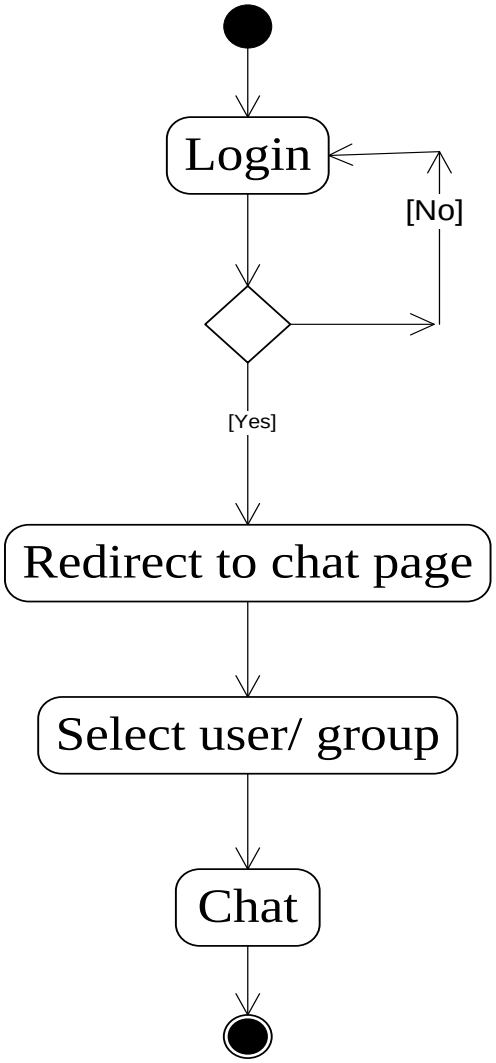


Fig. 7 Activity Diagram of Chat

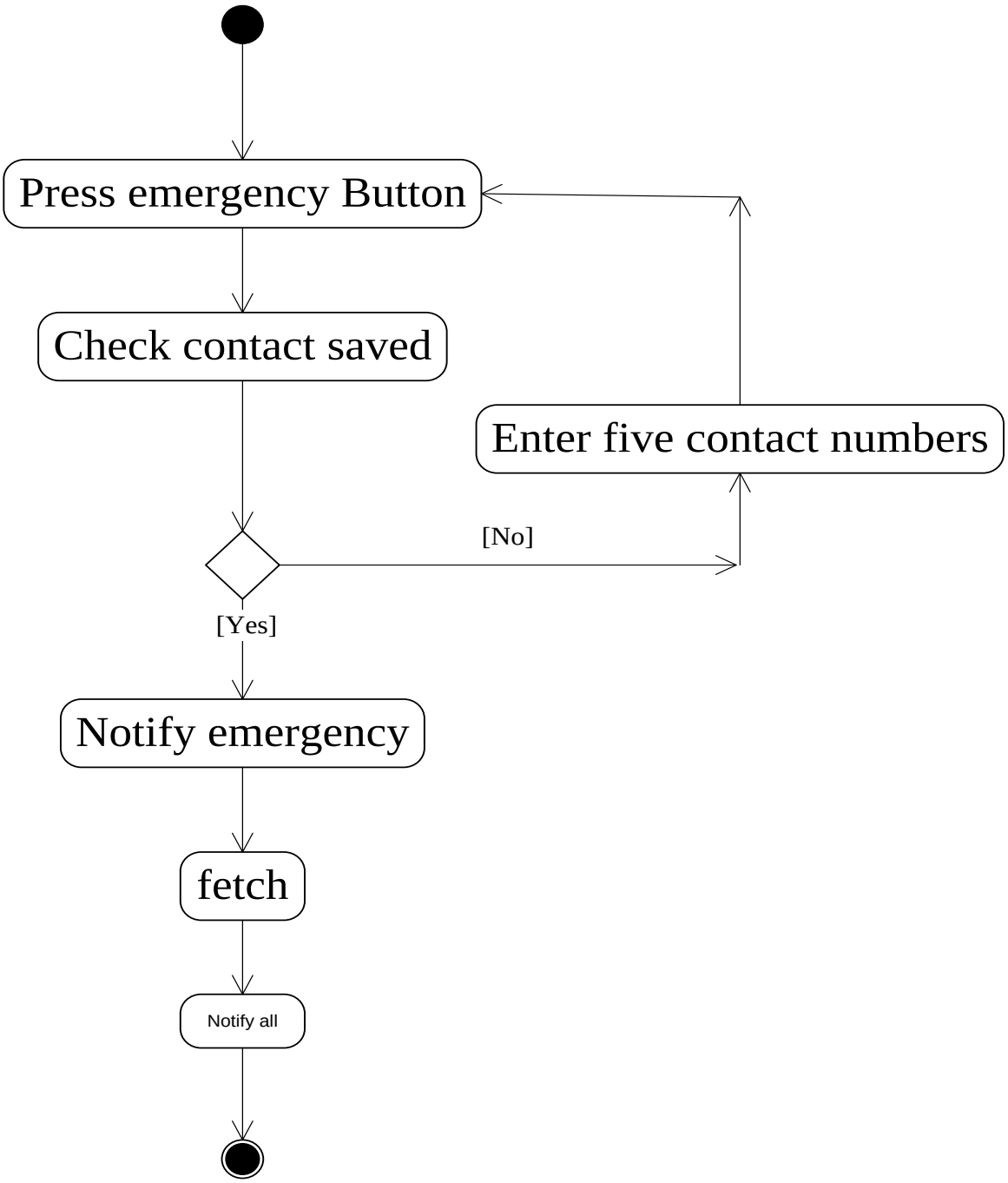


Fig. 8 Activity Diagram of Alert

2.2.3 Sequence Diagram

A **Sequence diagram** is an interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence diagrams are sometimes called **event diagrams** or **event scenarios**.

A sequence diagram shows, as parallel vertical lines (*lifelines*), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

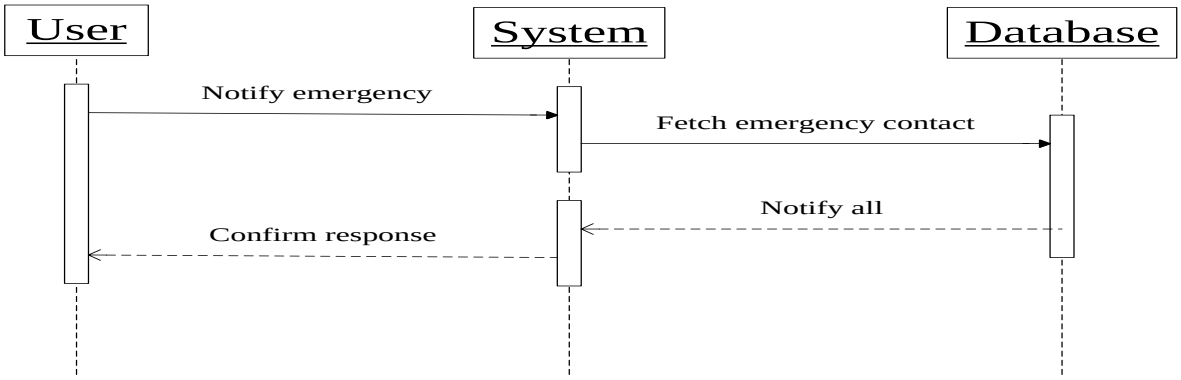


Fig. 4 Sequence Diagram of Alert

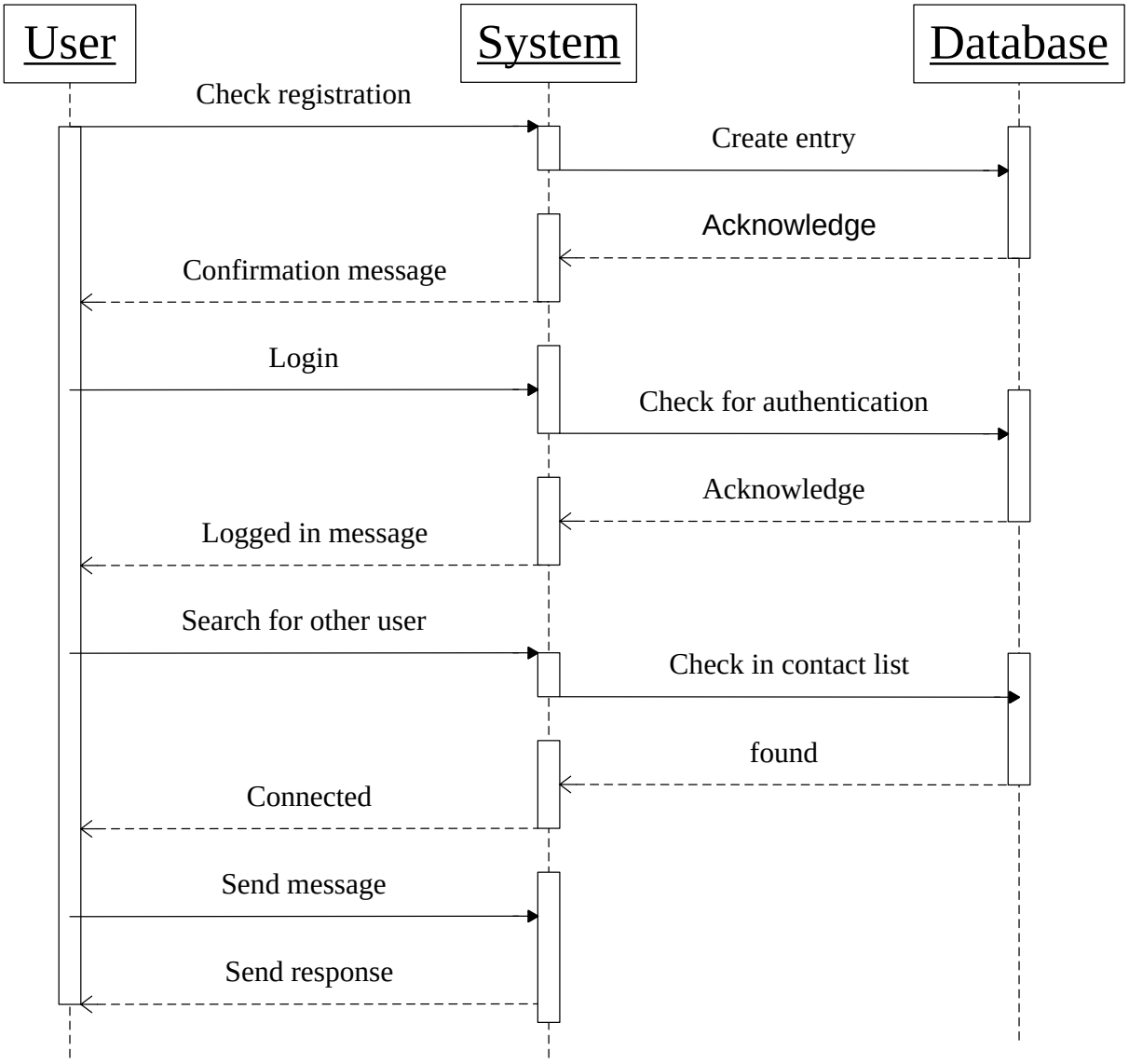


Fig. 4.1 Sequence Diagram of chat

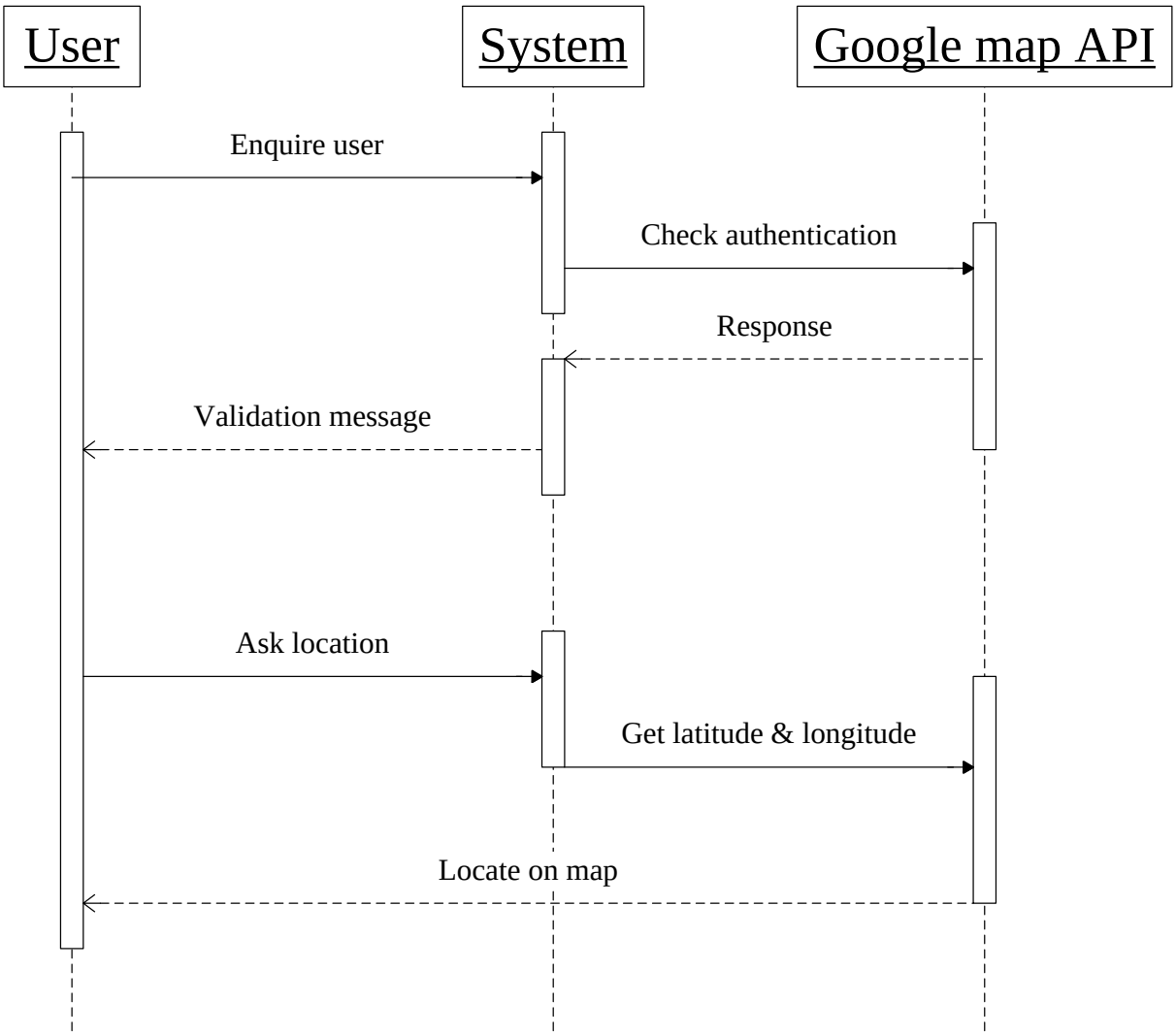


Fig. 4.2 Sequence Diagram of Locate others

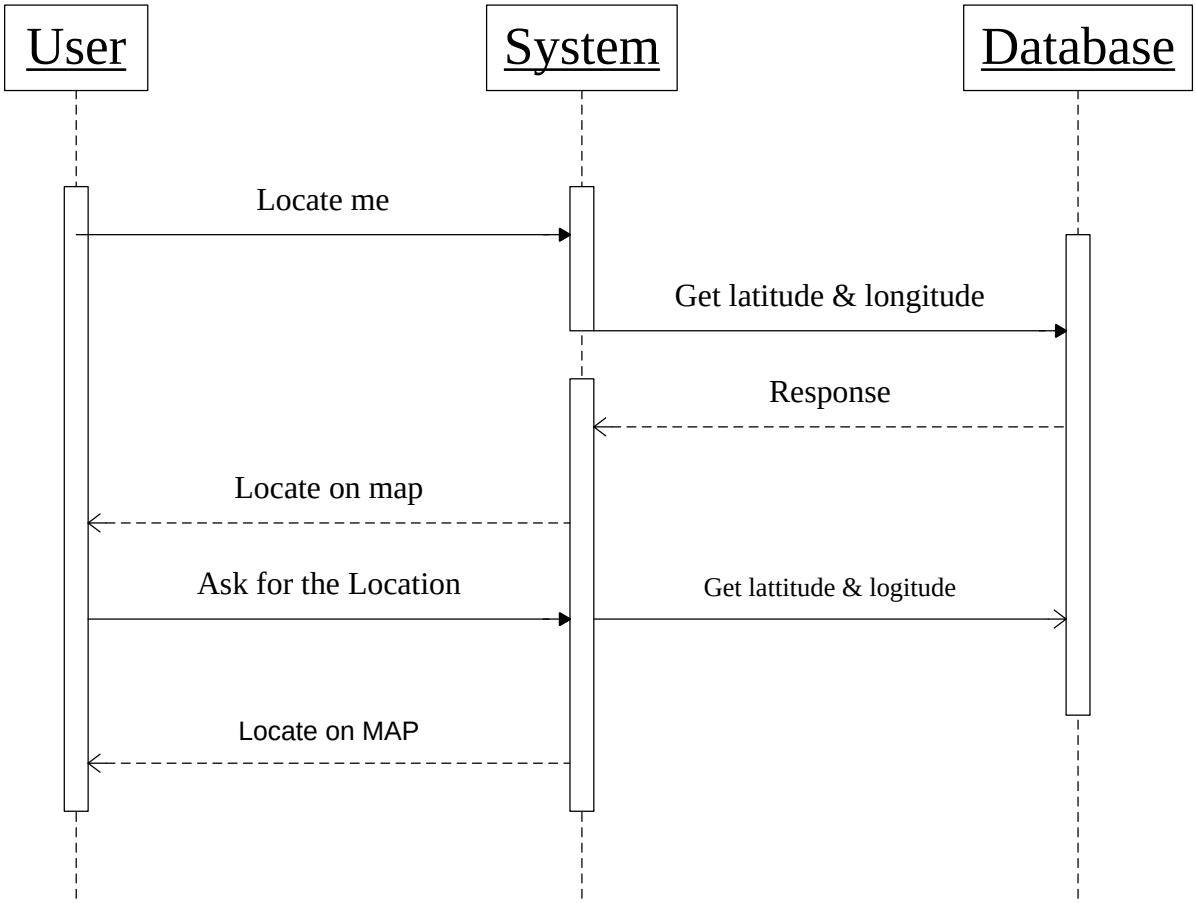


Fig. 4.3 Sequence Diagram of Locate Me

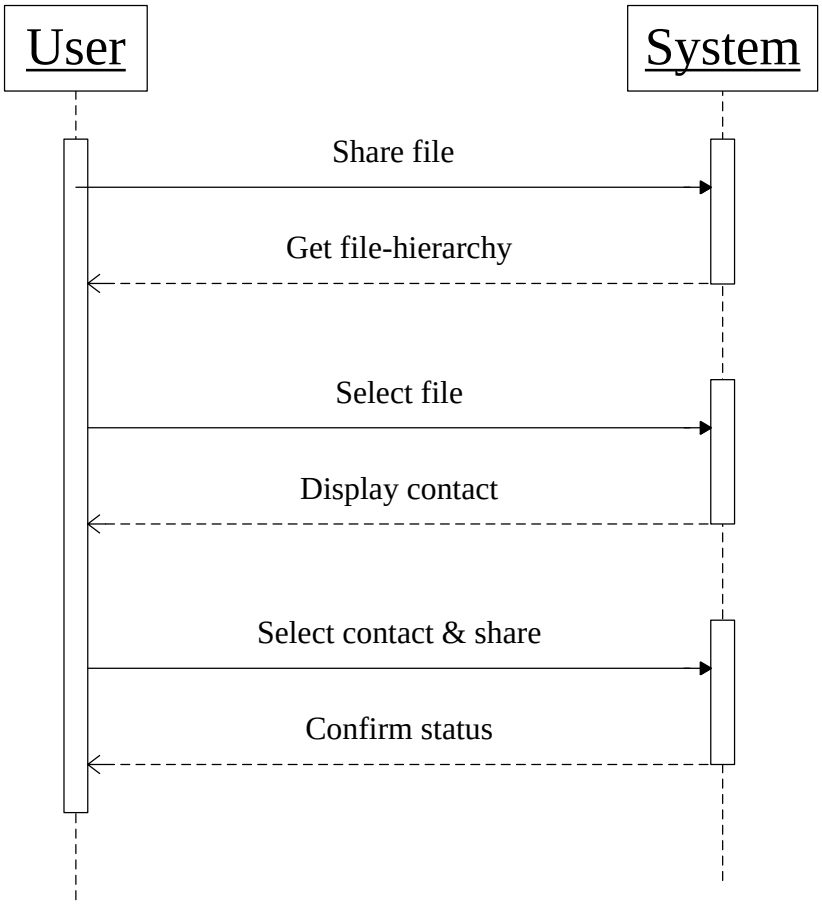


Fig. 4.4 Sequence Diagram of Locate Media Share

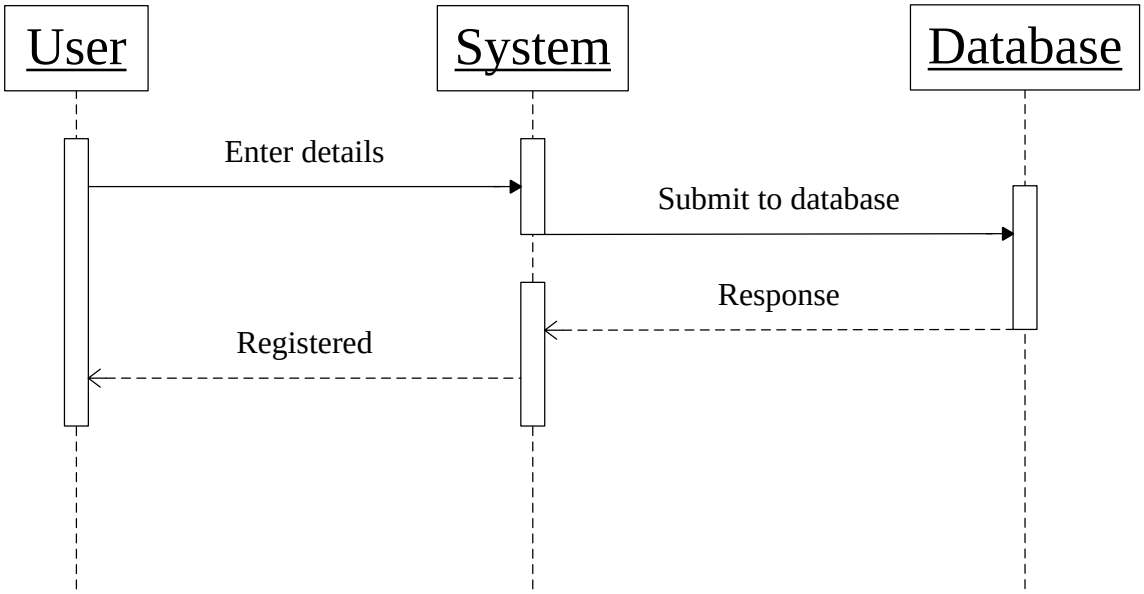


Fig. 4.5 Sequence Diagram of Locate Registration

2.2.4 DFD Diagram

A **data flow diagram** (**DFD**) is a graphical representation of the "flow" of data through an information system, modeling its *process* aspects [1]. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated. DFDs, can also be used for the visualization of data processing (structured design)[2].

A DFD shows what kind of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored [2]. It does not show information about the timing of processes, or information about whether processes will operate in sequence or in parallel (which is shown on a flowchart).

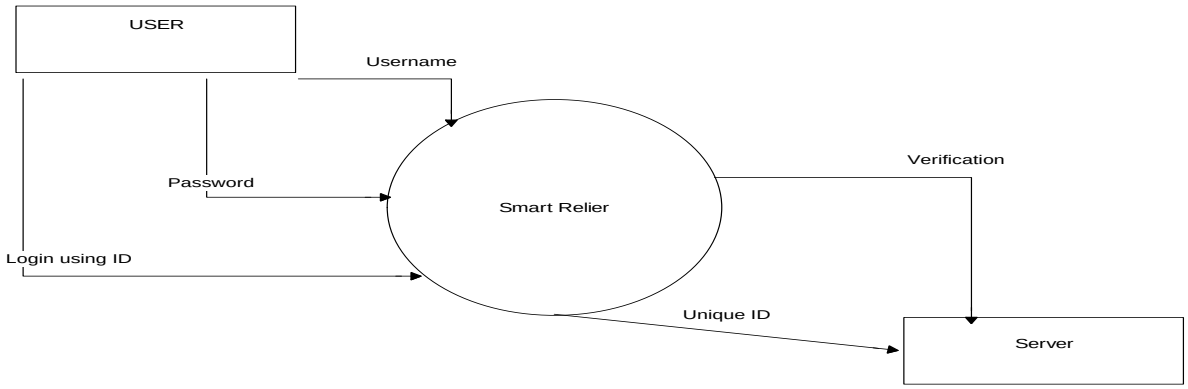


Fig. 5 Level 0 DFD Diagram

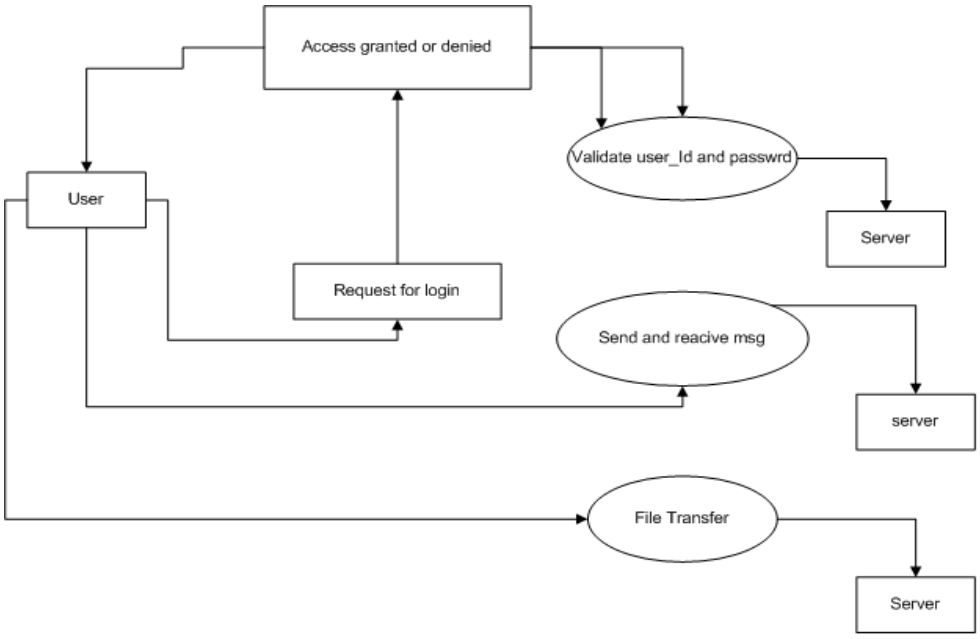


Fig. 5.1 Level 1 DFD Diagram

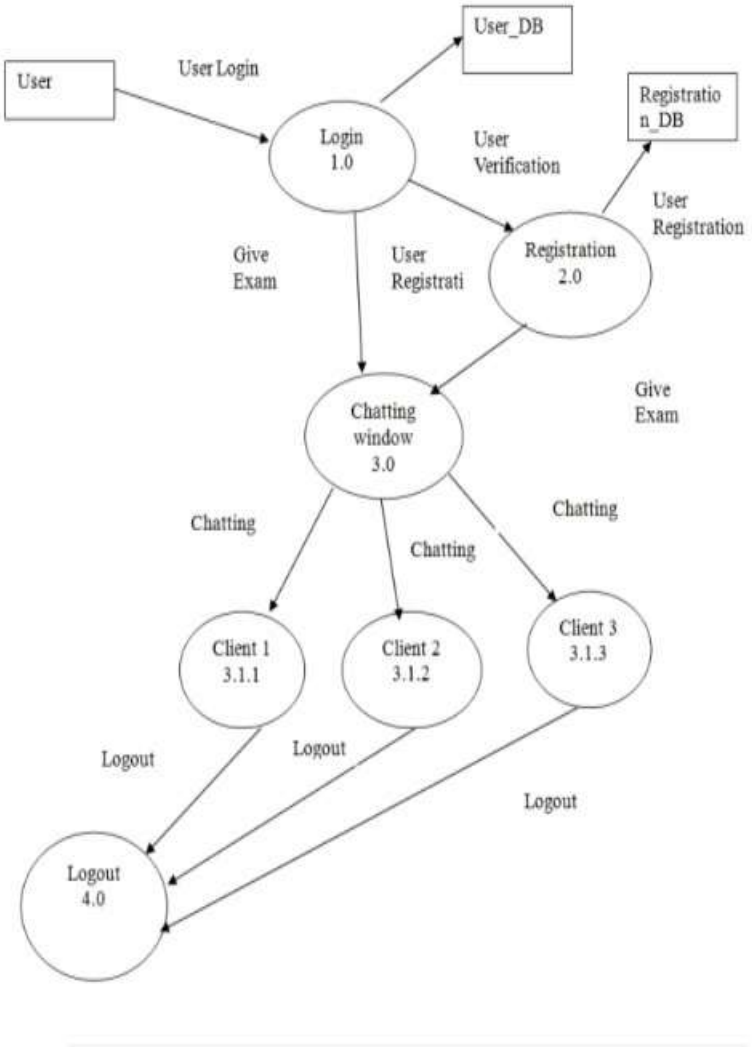
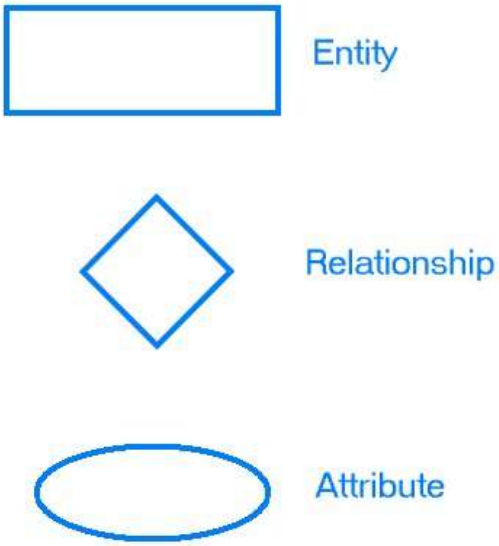


Fig 5.2 Level 2 DFD Diagram

2.2.5 E-R Diagram :

E-R diagram shoes the relationship between entities of the system. In software engineering, an entity–relationship model (ER model) is a data model for describing the data or information aspects of a business domain or its process requirements, in an abstract way that lends itself to ultimately being implemented in a database such as a relational database. The main components of ER models are entities (things) and the relationships that can exist among them, and databases.



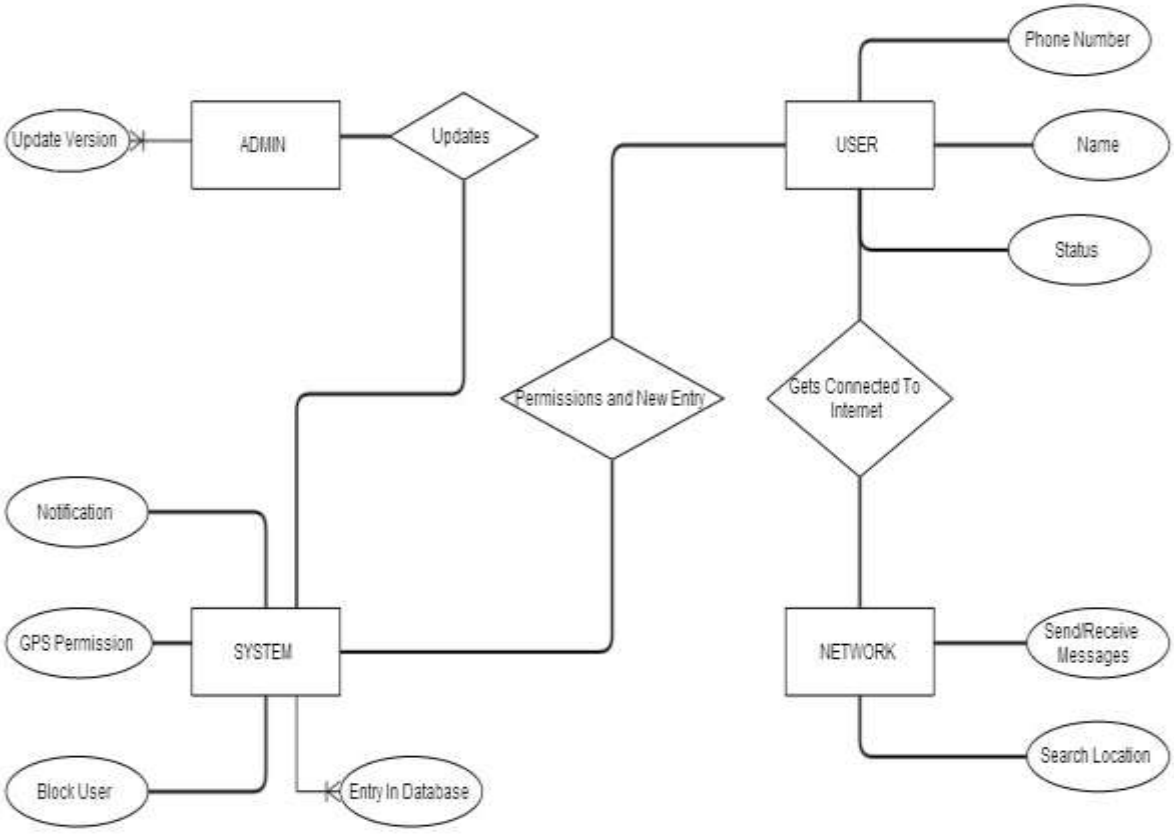
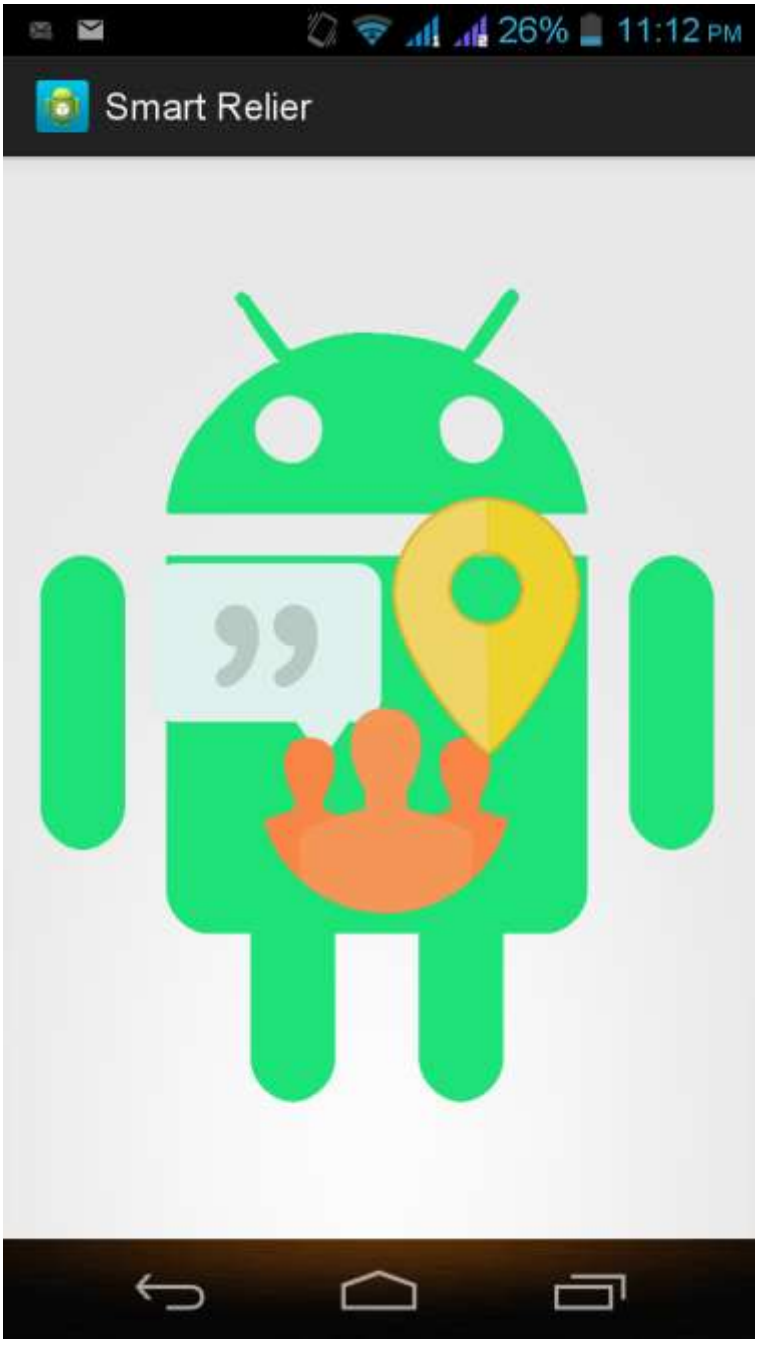


FIG-6 ER Diagram

CHAPTER 3: IMPLEMENTATION

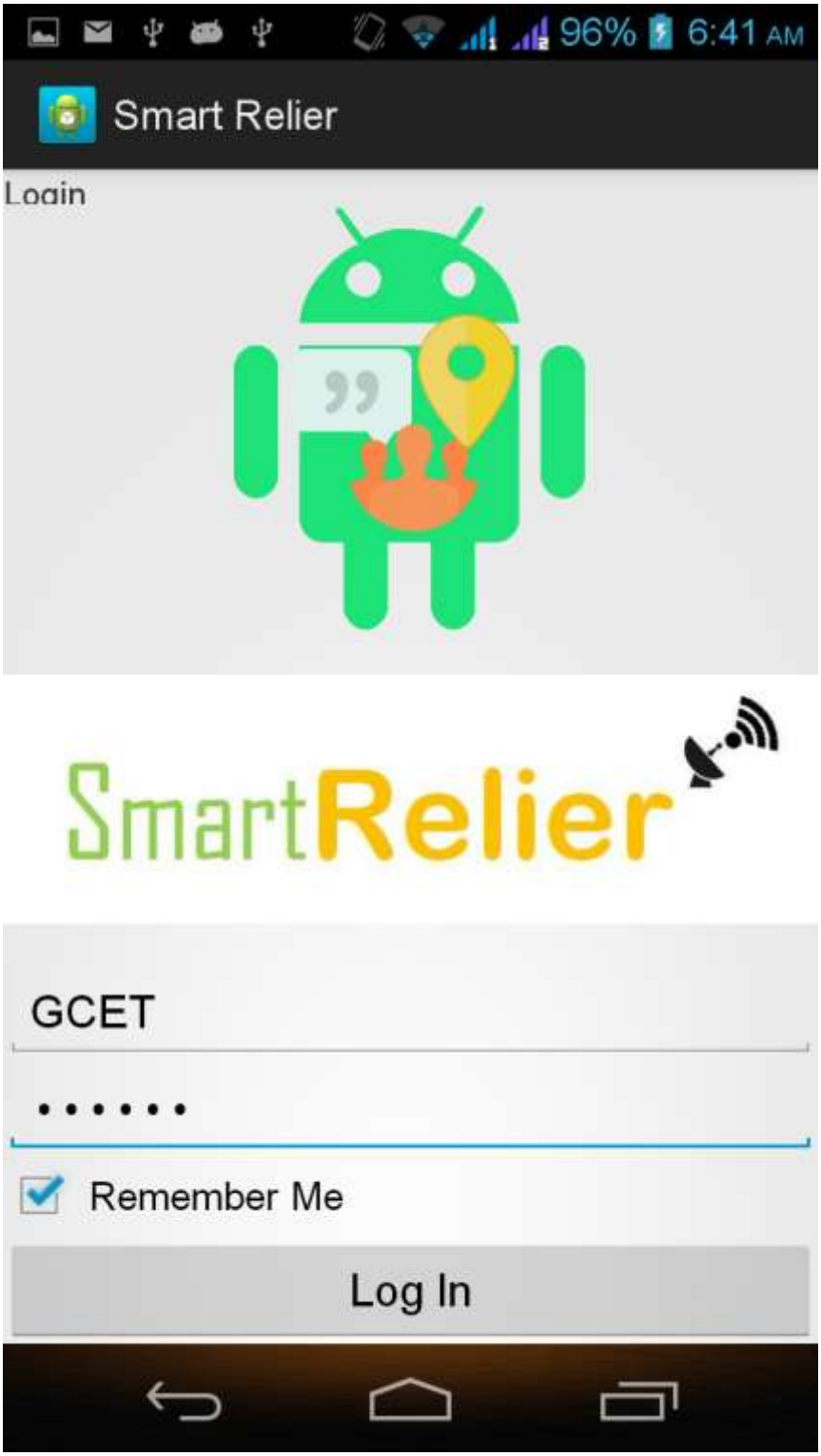
3.1. Splash Screen:



3.2 Registration Screen:

3.3 Registration with filled Data:

3.5 Login Screen:


96% 6:41 AM
Smart Relier
Login
SmartRelier
GCET
Remember Me
Log In

CHAPTER 4:

SUMMARY

4.1. Purpose of the project

"Smart Relier" is an Android Application which contains a few unique feature. Locate me can be implemented in this application by using that user can find his/her current location. Additionally, Smart Relier will ensure that a user can maintain active communication with other people despite evolving network conditions (in such condition where there is no network, the system won't function properly).It also has one unique feature of nearby notification. Hence Amigo chat Android chat system has four features of chatting ,locate me, locate others, built in applock

The main purpose of this Application:

1. The 1st primary objective of Android chat application is to enable the user to simplify the day to day interaction of user with people in contact.
2. To start with the application, the user has to register him/her. For registering process the user should provide the username and password.
3. After inserting an username and a password the system will verify the user and if it is valid user then he/she can Login.
4. Database of username and password will be maintained.

4.2. Highlighting the main features of the project

- **Locate me**

In this system Locate me ,the user will get his/her current location .

- **Built in app-lock**

Smart Relier system also provides a new feature of Built in app-lock.

4.3. Scope

This document covers the whole definition of the Android based Peer-to-Peer Chat System Project. It basically includes the requirements for location of the user, nearby notification, SOS to the predefined contacts. The scope of the project is limited to Android platform.

4.4. Application Perspective

For security reasons if any unknown person wants to be your friend you will get a notification. The notification will show the profile of the person who has sent request but that person won't be able to see the profile of the opposite person until that person save his contact number or say accepts his request. The unknown person cannot send you any message, any data or any other media until the request is not accepted.

4.5.Application Function

- Send Message
- Locate my Friend
- locate me
- Built in App Lock

4.6. Expected outcome

This application is prepared so that user can easily interact with people in contact but for which it is necessary to have internet. User can also share media files. The interface is made attractive so that it can catch capacity users from the population.

4.7. Future enhancement

We are trying to send all type of files, location of the user , Built in applock & some another feature that can enhance the performance of the system.

CONCLUSION

Hence we conclude that this application will be designed based on day-to-day lifestyle of various categories of users, disregard of age group. This application will be providing various attractive features that'll help the users to use it efficiently. The application will run on the most used operating system "Android".

REFERENCES

[1]. http://en.wikipedia.org/wiki/Android_(operating_system)#Software_stack

[2]. http://en.wikipedia.org/wiki/SQLite

[3].http://en.wikipedia.org/wiki/SQLite#Features

[4]. http://www.androidhive.info/page/3/

[5] devlopers.android.com

[6] http://www.androidhive.info/2013/08/android-working-with-google-maps-v2/