ETHNOLOGUE

Shweta Shenoy, Ajay Shenoy

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Abstract

To learn a new language is a skill everyone wants to incorporate in themselves. However, the time and money often invested in learning a language doesn't seem worth it. Hence, Ethnologue, an android application, will teach its users new languages in a time and cost efficient way.

It will teach its registered members to learn languages through an interactive community. Each member will be put into a group based on their personal information and proficiency in the language. As and when the users have a query about the language, they can message in their groups, where other members, or the language expert will help them out. In such a manner, the user can learn a language at their own convenience and pace. The members in the group will have a couple of language experts, or mentors who will communicate with them in order to teach them the new language.

Preface

A group of people in Bangalore, India took a survey to see how many people living in Bangalore could speak its local language, Kannada. The statistics surprised them as the results showed that not many living in there could speak the language. They also found through the statistics that people were interested in learning to speak the language; however, they didn't have the time to sit in classes or read the books to self-teach an entire language. This lead them to an assumption that if the statistics in Bangalore were to be believed, then there might be so many people across the country who desire to learn a language, yet don't find the time to do so!

With a determination to help the people of India, and people who are interested in learning Indian languages worldwide, they started a free service of teaching people Kannada, by talking to them on Whatsapp every day. They created a group with a few students, a few teachers, and then there was no turning around.

Eventually, they started charging a small fee for the service, and the registrations continued to flow in. They were being recognized in local newspapers, radio channels and television. They began to realize that for a growing idea like theirs, Whatsapp was not going to work.

Introducing, Ethnologue, an android application which helps users learn the language of their choice by communicating with experts every day.

Since the application will currently only focus on teaching Kannada, it will be released as, KannadaGottilla (I do not know Kannada).

This project was carried out by the requirements specified to us by the team of KannadaGottilla.

Organization of the Chapters

- **Chapter 1 - Introduction:** The main idea and purpose behind Ethnologue.
- **Chapter 2 - Literature Survey:** Discusses the android architecture, technical background and the prerequisites to be understood before starting the project.
- **Chapter 3 - System Requirement and Specification:** Mentions the functional and non-functional requirements provided by the various stakeholders.
- **Chapter 4 - System Design:** Graphical and database models to better understand the working of Ethnologue.
- **Chapter 5 - Implementation:** Implementation details including snippets of the code.
- **Chapter 6 - System Testing:** Various cases used to test the functionality of the application for a successful run.
- **Chapter 7 - Screenshots:** Screenshots of the application.
- **Chapter 8 - Conclusion and Future Work:** Closure about the project as well as its future scope.
- **Chapter 9 - References:** References used for the project.

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Chapter 1

Introduction

1.1 General

The origin of language has been a constant matter of debate among scholars for several centuries. In spite of this, there is still no consensus on its ultimate origin. The origin of a language might forever remain a mystery, however, the importance of learning it, is well established today. Learning a new language can often be a difficult task, but its many benefits make it worth the effort. People learn languages for various reasons, but here are few fundamental reasons why people are willing to spend their extra time on learning on a new language.

A new language can teach you a lot about a different culture. Not only will you be more open to a whole new culture, you will also be able to communicate with thousands of people. Many research studies have proven that learning new languages will help develop your mind. By learning, you're exercising your brain, which helps a person do simple mental exercises efficiently, such as memorizing, or the ability to perform simple to moderately complex calculations, etc. Lastly, we live in an increasingly globalized world where organizations are constantly expanding overseas and dealing with clients from all over the world. A person who is bilingual is arguably much more suited for a job in such organizations.

1.2 Importance

In today's era, multilingualism has become more than just 'important'. Knowing a second language other than your native language has proven to be extremely beneficial. Whether viewed from the personal or social aspect, being able to communicate in a another language helps to make 'real' connections with people and provides a better understanding of your language.

Hence, we have created Ethnologue, an android application that interactively allows you to learn a new language. This application will create a group consisting of people interested to learn a certain language, along with a couple of experts of that language who will talk to them on a daily basis and help them learn the language by interacting with them through messages.

1.3 Scope

An Ethnologue is catalogue consisting of more than 6,700 languages spoken in over 228 countries. Practically, it is almost impossible to create an application that can provide the knowledge of all these languages. Therefore, Ethnologue, the application, will first be implemented to teach the local language of Karnataka, India – Kannada.

1.4 Objectives

Bangalore is known as the Silicon Valley of India. Thousands of engineers from all over the world come to Bangalore for their work, or for travel. The first thing they will realize after landing in Bangalore, or anywhere in Karnataka, is that everyone speaks Kannada. From the three-wheeled auto rickshaws to the managers in their workplace, they all speak Kannada.

The objective of this project is to teach fluent Kannada to all these wanderers and many more interested in learning it. Not only will this make their life easy in Karnataka but it will also help promote a language of India. This application has a long-term goal of reducing language complexity conveniently. As soon as they encounter a word, a phrase or a sentence they are unable to comprehend, their solution will be just a message away on Ethnologue.

Chapter 2

Literature Survey

2.1 Introduction

KannadaGottilla's mission is to teach its students fluent Kannada without charging them too much money or wasting a lot of their time. People of today spend majority of their free times on their smart phones. Thus, learning something on their phones itself is very convenient for the users

.

The team of KannadaGottilla gave us their requirements and functionalities that the application must consist. According to what they told us, we used the following softwares and approach to carry the project forward. The exact requirements and approaches are discussed in the sections below. [1]

2.2 Technical Background

Ethnologue is an Android based application. It is developed using Java on the Android Software Development kit. This application uses MySQL as the backend, also known as the database, PHP for scripting and a XAMPP server to temporarily host the application. The project will then be hosted on the KannadaGottilla servers and released in the Google Play Store in the month of May, 2016.

2.3 Existing System

The traditional way of learning a new language is either by attending coaching classes or by learning it through a person who speaks that language. Both of these methods are time consuming. It is difficult to find classes which are truly effective, and without constant practice, the knowledge learnt will eventually be forgotten. There are a few mobile applications which try to help users learn new languages. However, these applications are merely a dictionary, which do not help users with sentence framing or casual conversations.

2.4 Problem Statement

Vision: Learning new languages should be easy, cost-effective and interactive.

Issue Statement: A person may not find a guide or a coaching class at his convenience. The person may feel it is expensive. [1]

2.5 Proposed System

Ethnologue will help people learn new languages at their convenience. This application will register people who are interested to learn a certain language, for example, Kannada. The users will initially have to register to this application by creating an account, with personal details such as name, age, email-id, phone number, gender, user name, password, and the current proficiency level of the language they want to learn. These details will be hidden from the other members of the group to maintain privacy.

Based on the details provided by the user, they will be put into a group with a maximum of 20 other students, two language experts, and the administrator of the group. Once the number of students in the group crosses 20, a new group will be created and two experts will be assigned to that group as well.

From the second time onwards the user uses this application, they will be directed to a login page, where they can login with their user name and password to their assigned groups. The members in the group can discuss, ask questions and share their knowledge with each other.

Chapter 3

System Requirement and Specification

3.1 Introduction

Requirements are during early stages of a system development as a specification of what should be implemented or as a constraint of some kind of on the system. They may be: a user level facility description, a detailed specification of expected system behavior, a general system property, a specific constraint on the system, and information on how to carry out some computation or a constraint on the development of the system.

The end product of the requirement analysis phase is a requirement specification. The requirement specification is a reconstruction of the result of this analysis phase. Its purpose is to communicate this result to others.

System requirements are more detailed descriptions of the user requirements. They may serve as the basis for a contract to the implementation of the system and should therefore be a complete and consistent specification of the whole system. They are used by software engineers as the starting point of system design.

In principle, the system requirements should state what the system should do and not how it should be implemented. However at the level of detail required to specify the system completely, it is virtually impossible to exclude all design information.

Natural language is often used to write system requirements specifications. Further problems with natural language can arise when it is used for more detailed specification:

1. Natural language understanding relies on the specification of the readers and writers using the same words for the same concept. This leads to misunderstandings because of the ambiguity of the natural language.

2. A natural language requirements specification is over-flexible. You can say the same thing in completely different ways. It is up to the reader to find out when requirements are same and when they are distinct.

3. There is no easy way to modularize natural language requirements. It may be difficult to find all the related requirements. To discover the consequence of a change, you may have to look at every requirement rather than just a group of related requirements.

3.2 Functional Requirements

The functional requirements are the statement of services the system should provide, how system reacts to particular inputs and how system should behave in particular situations. In other words, it describes the functionality that the system provides. A few functional requirements of our project are [1]:

1. The users are able to ask queries in the group they are assigned to.

2. They can also personally message the admin of the group for other questions/concerns.

3. The mentor will provide solutions to the users' queries to the best of his ability. He will also provide study materials and helpful lesson plans the users may benefit from.

4. The admin will supervise all the groups and respond to any messages they have received from any of the users.

3.3 Non-Functional Requirements

Developing a good application is more than just perfecting its aesthetics, simplicity or utility. There are various factors which we are integrating into our project for a promising and impressive end product for the customers/users. The list is as follows:

1. **Performance:** Quality software has to be fast. Users shouldn't have to wait for long periods of time for features such as sending or receiving a message. Therefore, in our project, we have kept a refresh rate of 2 seconds, which means the screen will refresh every two seconds fetching new messages and notifications.

2. **Response times:** The application shouldn't take too long to load, or fetch data the user has requested for. In our project, the user has a option to remember their preferences, so the next time they open the app, their data will already be loaded without them having to spend extra time on it.

3. **Processing times:** As soon as the mentor/admin/user sends a message, it should be visible to all the users within milliseconds. In other others, the refresh rate should be fast.

4. **Capacity and Scalability:** As the application is released, its users will be easily handled by the servers. However, as the users increase, the load on the servers shouldn't be heavy enough to cause a breakdown. Expanding severs, or even using the cloud are options to be considered for the future.

5. **Throughput:** The application promises responses to the users query at any time of the day. That means, the number of transactions per day has to be considered and taken care of.

3.4 User Requirements

The user should have the following in order for them to use this application:

1. An account in Ethnologue
2. An android device
3. Internet connection

3.5 Software Requirement Specification

To develop this application, we used the following software's:

1. **Platform:** Windows
2. **Languages used:** Java
3. **Development tools:** Android SDK
4. **Database used:** MySQL
5. **Web Server:** XAMPP Server
6. **Technologies used:** PHP, JDBC, XAMPP

3.5.1 Android Software Development Kit (SDK)

1. The Android SDK provides you the API libraries and developer tools necessary to build, test, and debug apps for Android. The ADT bundle includes the essential Android SDK components and a version of the Eclipse IDE with built-in Android Developer Tools to streamline the Android app development. ADT bundle consists of following components for developing the application
2. Eclipse + ADT plugin.
3. Android SDK Tools.
4. Android Platform-tools.
5. The latest Android platform.
6. The latest Android system image for the emulator. [5]

3.5.2 NetBeans IDE for PHP

The NetBeans integrated development environment (IDE) for PHP is an open source project. It is one of the series of supports for scripting languages provided by the NetBeans IDE. The NetBeans IDE for PHP is intended to provide a comfortable environment for a developer at each stage of a PHP project. This is achieved through integrating PHP development specific features into the NetBeans IDE. The NetBeans IDE is written in Java and runs everywhere where a JVM is installed, including Windows, Mac OS, Linux, and Solaris. A JDK is required for Java development functionality, but is not required for development in other programming languages. [5]

3.5.3 MySQL

MySQL is a relational database management system based on SQL – Structured Query Language. SQL is a database computer language designed for managing data in relational database management systems (RDBMS), and originally based upon relational algebra. Its scope includes insertion, deletion and updation of data, query solving, schema creation and modification, and data access control. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. [5]

3.5.4 XAMPP Server

XAMPP server is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing purposes. Everything needed to set up a web server – server application (Apache), database (MariaDB), and scripting language (PHP) – is included in an extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server extremely easy as well.[8]

3.5.5 phpMyAdmin

phpMyAdmin is a free software tool written in PHP, intended to handle the administration of MySQL over the World Wide Web. phpMyAdmin supports a wide range of operations with MySQL.
The most frequently used operations are supported by the user interface (managing databases, tables, fields, relations, indexes, users, permissions, etc), while you still have the ability to directly execute any SQL statement. Intuitive web interface Support for most MySQL features:

1. Browse and drop databases, tables, views, fields and indexes.
2. Create, copy, drop, rename and alter databases, tables, fields and indexes.
3. Maintenance server, databases and tables, with proposals on server configuration.
4. Execute, edit and bookmark any SQL-statement, even batch-queries.
5. Manage MySQL users and privileges.

6. Manage stored procedures and triggers. [5]

3.5.6 JSON

JSON (JavaScript Object Notation) is an open standard format that uses human-readable text to transmit data objects consisting of attribute–value pairs. It is used primarily to transmit data between a server and web application, as an alternative to XML.

Although originally derived from the JavaScript scripting language, JSON is a language-independent data format, and code for parsing and generating JSON data is readily available in a large variety of programming languages.

The JSON format was originally specified by Douglas Crockford. It is currently described by two competing standards, RFC 7159 and ECMA-404. The ECMA standard is minimal describing only the allowed grammar syntax, whereas the RFC also provides some semantic and security considerations. The official Internet media type for JSON is application/json. The JSON filename extension is .json. [7]

3.6 Hardware Requirements

1. **RAM:** Minimum 512 GB RAM
2. **Space:** Minimum 20 MB of storage space
3. **System:** Android device
4. **Other:** Computer which can be used as a server.

Chapter 4

System Design

4.1 Modules

This application can be divided into three modules as follows:

4.1.1 Administrator Module

The admin is the only one with access to all the chat groups, user information and mentor information. The admin will select two mentors, and 20 users to create a new group. The group created may be based on gender, level of knowledge of the language, or as per the admin's requirements. The admin can also delete groups, delete members in the group, or add new members to the group at any point. The admin is basically a supervisor of the group.

4.1.2 Mentor Module

The mentors of the groups are the ones that conduct the sessions and communicate with the other group members. The mentor doesn't have any extra privileges, such as viewing the personal details of the group members for obvious security reasons and to keep the user information safe.

4.1.3 User Module

As soon as the user logs in, he/she is assigned to a group by the admin. The user can communicate with the other members in the group, post any queries or concerns. The user is rest assured that his doubts will be cleared by the mentors in the group.

4.2 Use Case Model

4.2.1 Use Case Model of System

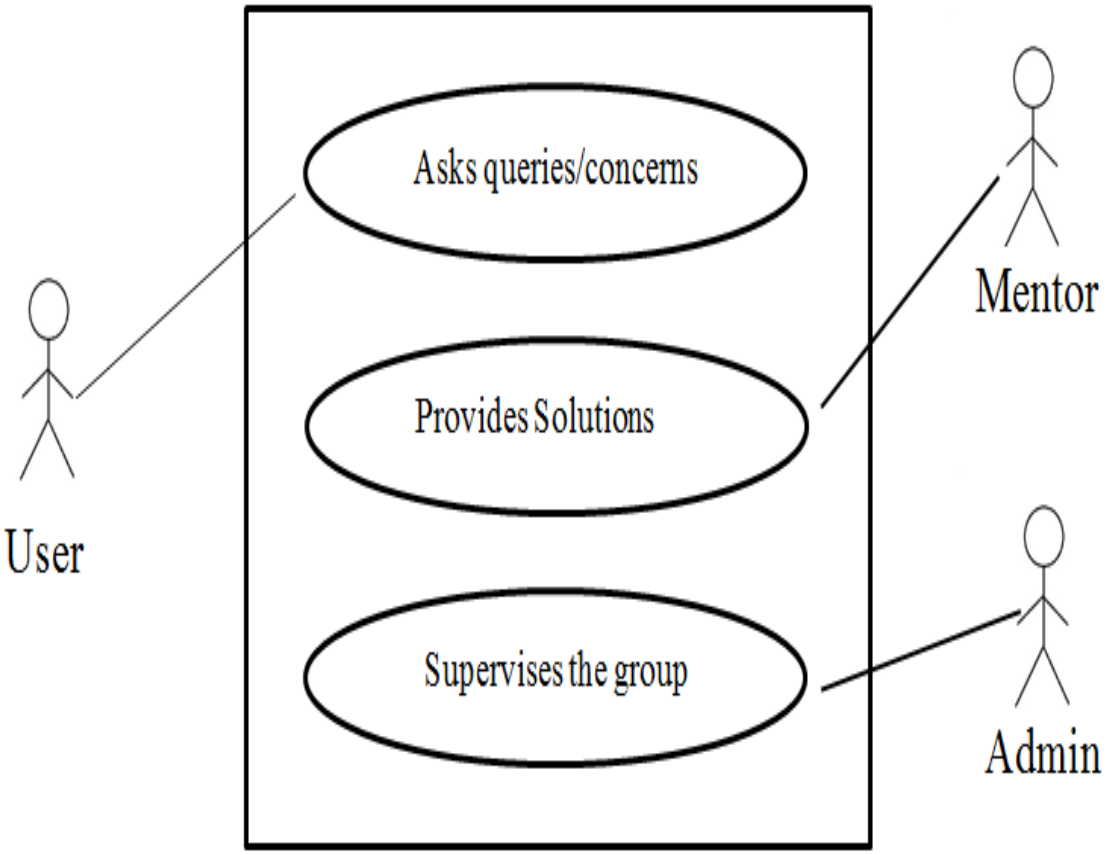

Figure 4.1: Use case model of ethnologue

4.3 Sequence Diagrams

4.3.1 First User Login

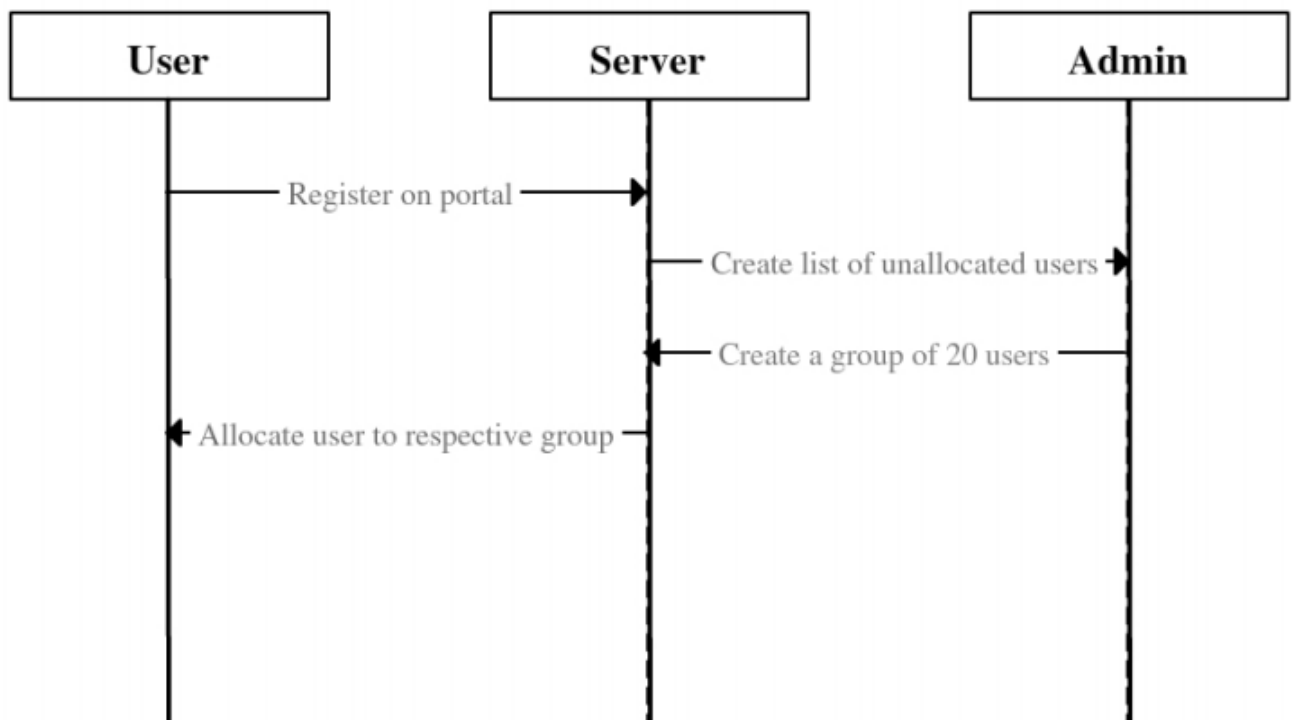

Figure 4.2: First user login

4.3.2 Creating a Group

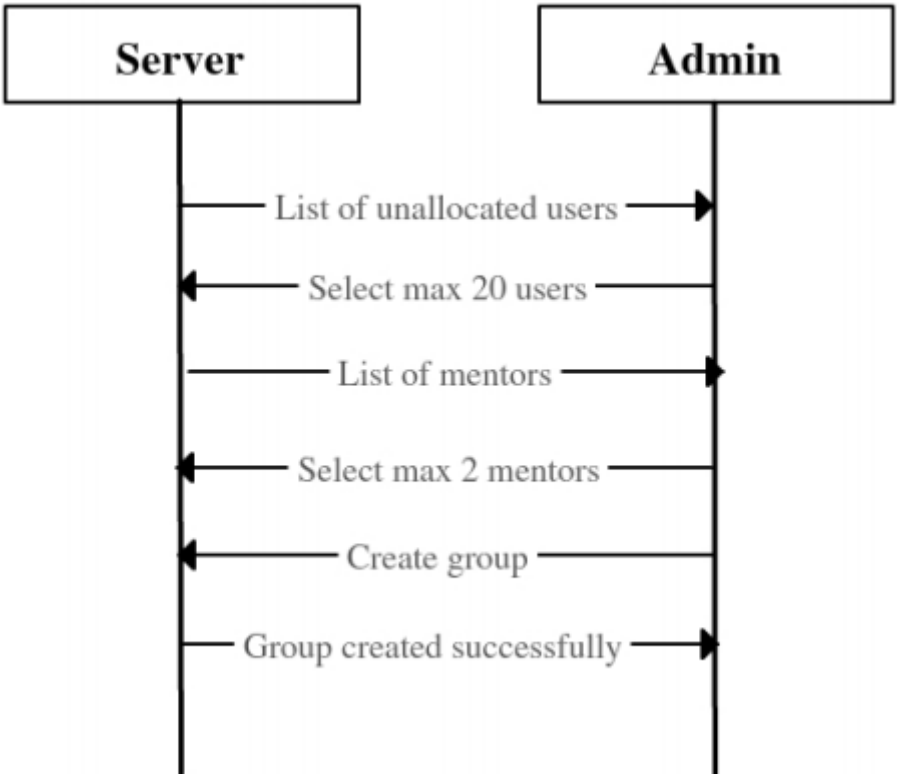

Figure 4.3: Creating a group

4.3.3 Answering Queries

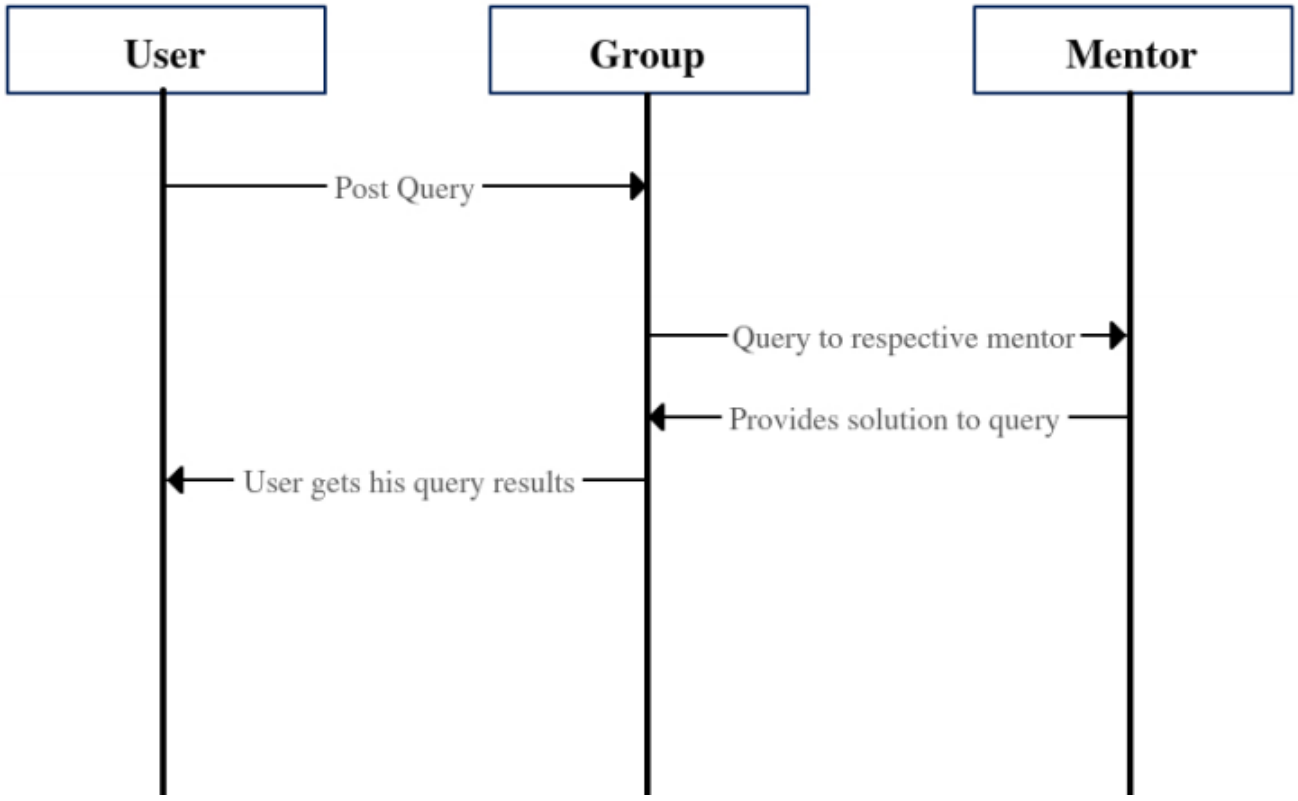

Figure 4.4: Mentor answering user queries

4.4 Data Flow Diagram

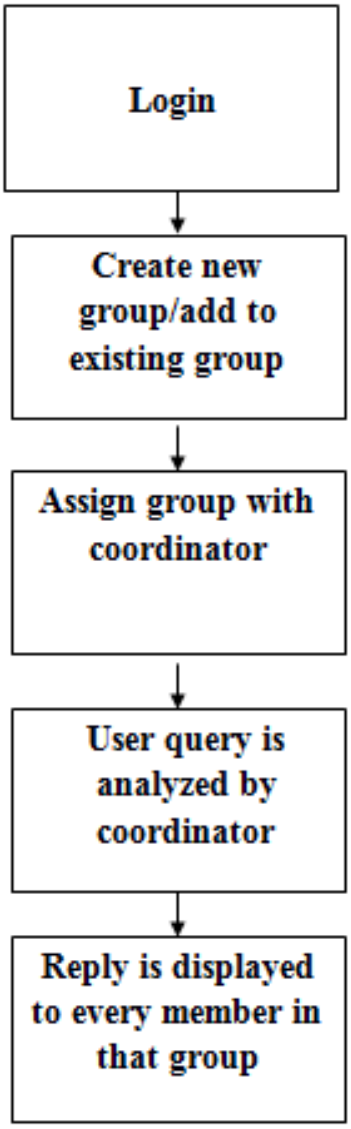

Figure 4.5: Data flow diagram

Steps:

- The user registers and logs in on the app.
- If there is a group with less than 20 members, add the user in the group. Else, create a new group.
- If new group is created, assign the group each group with 2 coordinators (mentors).
- User sends his queries in the group, which is notified to all the members of the group. The coordinator analyses the query and replies to it.
- This is displayed to every member of the group.

4.4.1 System Architecture

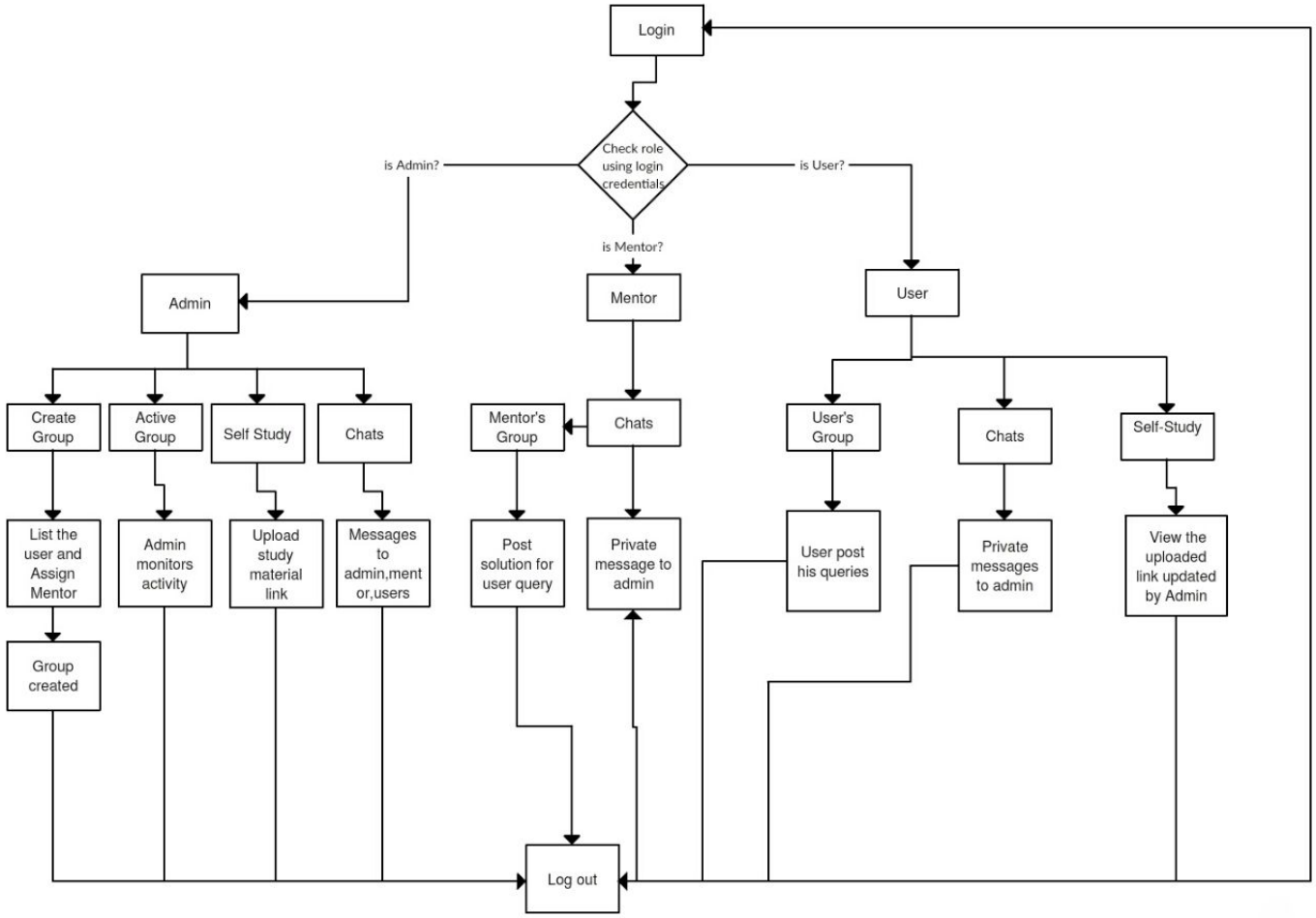

Figure 4.6: System Architecture

4.5 Database Design

The database is designed using phmyadmin. The database is designed to store the values pertaining to the users, the chat group, notifications, self study links and the message details. The values are retrieved from the database with the help of queries. The database is dynamic in nature. We create the following tables in the database. [3]

4.5.1 User Details Table

The user table contains all details related to user. Most of the information is taken from when the user registers for the service. There are fields such as unique ID for each user, e-mail address, password, contact number, ,ID of the group the user is assigned to, role of the user (mentor, admin, or regular user), status of the user (allocated, or not allocated to a group), and the time at which the user was registered.

u_id	u_mail	u_pass	u_name	u_contact	u_prof	u_gid	u_role	u_stat	u_created

Primary Key: u_id

4.5.2 Chat Group Table

The ChatGroup Table contains the details of all the active groups on the app. The fields are as follows: Unique group ID, group name, name of the first mentor, name of the second mentor, total message count on the group, the date and time the group was created at, and the ID of the admin that created the group.

g_id	g_name	g_mentor1	g_mentor2	g_mcount	g_created	g_created_by

Primary Key: g_id

4.5.3 Message Table

Message table contains the details of every message sent in the app. From the unique message ID, the text in the message, the sender, the receiver, the group it was sent in, to the date and time the message was sent at.

m_id	m_body	m_from_id	m_to_id	m_group_id	m_created

Primary Key: m_id

4.5.4 Notification Table

This table has details related to the notification each member receives on message arrivals. The respective fields are: unique notification ID, who the notification is for, ID of the message the notification is for, status of the notification (read, or unread) and the date and time the notification was received at.

Not_id	Not_to_id	Not_mes_id	Not_is_read	Not_notified_datetime

Primary Key: Not_id

4.5.5 Links Table

Links table contains the details regarding the links the admin uploads for the user to use. It contains the unique link ID, the name of the link, followed by its URL.

link_id	link_name	link_address

Primary Key: link_id

Chapter 5

Implementation

5.1 Algorithms

5.1.1 Administrator

```
Admin logs in with their credentials
If login successful
Then
   Switch(option)
        Case 1: Display create group page
        Case 2: Display active groups page
        Case 3: Display admin chat page
        Case 4: Display self-study components
  End Switch
Else
  Display error message
End if
```

5.1.2 Mentor

```
Mentor logs in with their credentials
If login successful
Then
   Switch(option)
        Case 1: Display active group page where the respective
        mentor is present
        Case 2: Display Mentor chat page
Else
  Display error message
End
```

5.1.3 User

```
User logs in with their credentials
If login successful
Then
     Switch(option)
        Case 1: Display user's group chat page
        Case 2: Display user's personal chat page
        Case 3: Self-study materials uploaded by the admin
  End Switch
Else
  Display error message
End
```

5.2 Connecting to the Database

We use connection string in the php file to connect to the database. The connection string consists of the host, username and password. We use

`mysql_connect`

to connect to database and

`mysql_select_db`

command is used to select the database. [5]

```
<?php
$con = mysql_connect("localhost","username","password");
if (!$con)
{
die('Could not Connect:' . mysql_error());
}
mysql_select_db("database_name", $con);
```

5.2.1 Android Volley

Volley is an HTTP library that makes networking for Android apps easier and most importantly, faster. Volley is available through the open AOSP repository. Volley offers the following benefits:

1. Automatic scheduling of network requests.
2. Multiple concurrent network connections.
3. Transparent disk and memory response caching with standard HTTP cache coherence.
4. Support for request prioritization.
5. Cancellation request API. You can cancel a single request, or you can set blocks or scopes of requests to cancel.
6. Ease of customization, for example, for retry and backoff.
7. Strong ordering that makes it easy to correctly populate your UI with data fetched asynchronously from the network.
8. Debugging and tracing tools. [6]

5.2.2 HTTP POST Request

POST's place in the range of HTTP methods is to send a representation of a new data entity to the server so that it will be stored as a new subordinate of the resource identified by the URL. [6]

5.2.3 POST Variable

The predefined POST variable is used to collect values from a form sent with method=”post”. Information sent from a form with the POST method is invisible to others and has no limits on the amount of information to send.

5.3 Basic Android Widgets

5.4 Buttons

These represent a push-button widget. Push-buttons can be pressed, or clicked, by the user to perform an action. A button consists of text or an icon (or both text and an icon) that communicates what action occurs when the user touches it. When the user clicks a button, the button object receives an on-click event. To define the click event handler for a button, add the android onClick attribute to the ¡Button¿ element in your XML layout. The value for this attribute must be the name of the method you want to call in response to a click event. [6]

```
<Button
android:id="@+id/button1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/editText2"
android:layout_centerHorizontal="true"
android:layout_marginTop="69dp"
android:text="Submit" />
```

To declare the event handler programmatically, create a View.OnClickListener object and assign it to the button by calling:

```
setOnClickListener(View.OnClickListener.Button button =
(Button) findViewById(R.id.button_send);
button.setOnClickListener(new View.OnClickListener() {
public void onClick(View v) {
// Do something in response to button click }
}
);
```

5.4.1 EditText

EditText control to the main.xml layout resource associated with your application. we must edit the layout file. By default, any text contents within an EditText control is displayed as plain text. by setting one simple attribute called inputType, we can facilitate input of different types of information. we set the value of an EditText control using the setText() method .we may also want to set the hint for the EditText control to prompt a user for specific input. When the user types in this control, the hint is overwritten. We can set the hint string of your EditText control in your layout using the hint attribute:

```
<EditText
android:id="@+id/editText1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/textView1"
android:layout_centerHorizontal="true"
android:layout_marginTop="21dp"
android:ems="10" />
```

5.4.2 CheckBox

Checkboxes allow the user to select one or more options from a set. Typically, you should present each checkbox option in a vertical list. To create each checkbox option, create a CheckBox in your layout. Because a set of checkbox options allows the user to select multiple items, each checkbox is managed separately and you must register a click listener for each one. When the user selects a checkbox, the CheckBox object receives an on-click event.

To define the click event handler for a checkbox, add the android:onClick attribute to the CheckBox element in your XML layout. The value for this attribute must be the name of the method you want to call in response to a click event.

```
<CheckBox android:id="@+id/checkbox1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/c1" android:onClick="onCheckboxClicked"/>
```

5.4.3 TextView

Displays text to the user and optionally allows them to edit it. A TextView is a complete text editor; however the basic class is configured to not allow editing.

```
<TextView
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text=" Pocket Doctor "
android:textSize="45dp"
android:layout_gravity="center"
android:id="@+id/display" />
```

Chapter 6

System Testing

6.1 Introduction

System testing of software or hardware is testing conducted on a complete, integrated system to evaluate the system's compliance with its specified requirement. System testing falls within the scope of black box testing, and as such, requires no knowledge of the inner design of the code or logic.

System testing is usually required before and after a system is put in place. A series of systematic procedures are referred to while testing is being performed. These procedures tell the tester how the system should perform and where common mistakes may be found. Testers usually try to "break the system" by entering data that may cause the system to malfunction or return incorrect information.

System testing is performed on the entire system in the context of System Requirement Specification (SRS). System testing is an investigatory testing phase, where the focus is to have almost a destructive attitude and tests not only the design, but also the behaviour and even the believed expectation of the user. It is also intended to test up to and beyond the bound on the Software requirement specification.

The testing phase is performed after the coding to detect all the errors and provide quality assurance and ensure reliability of the software. Testing is vital to the success of the system. During testing, the software to be tested and executed with a set of test cases, and the behaviour of the system for the test cases is evaluated to determine if the system is performing as expected. Clearly, the success of the testing in revealing errors depends critically on the test cases.

The different testing strategies employed in this project are explained in this chapter.

6.2 Unit Testing

In computer programming, unit testing is a software verification and validation method in which a programmer tests if individual units of source code are fit for use. A unit is a smallest testable part of an application. It is also called as module testing. The goal of unit testing is to isolate each part of the program first and then testing the sum of its parts, integration testing becomes much easier. In our project, we apply this by testing the various modules of the application and also each feature individually.

Sl. No.	Test Case	Expected Output	Actual Output
1	Login button	When the login button is clicked, the username and password is taken from the textbox and sent to server for validation	Same as expected.
2	Creating a group	Selected options (mentors, users) are added in the group	Same as expected.
3	Notification	Message notification must be sent to all group members	Same as expected.
4	Self-study links	The link updated by the admin must be visible to the registered users	Same as expected.
5	Logout	Should log the user out closing all their activities and return to the login screen	Same as expected.

6.3 Integration Testing

Integration testing is thee phase in software testing in which individual software modules are combined and tested as a group. It occurs after unit testing and before system testing. Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for the system testing.

The purpose of the integration testing is to verify functional, performance and reliability requirement placed on major design items. All the different modules of the project are combined and tested.

Sl. No.	Test Case	Expected Output	Actual Output
1	Working of chat group	Once the user logs in, he must be in his assigned group, must get notification of all messages and must be able to send messages in that group.	Same as expected.
2	Study Links	The links that the admin uploads in his portal must be accessible by the user on his portal.	Same as expected.
3	Personal chats	The users and the mentors must be able to message all the admins and in turn the admin must be able to reply to all his messages.	Same as expected.

Chapter 7

Screenshots

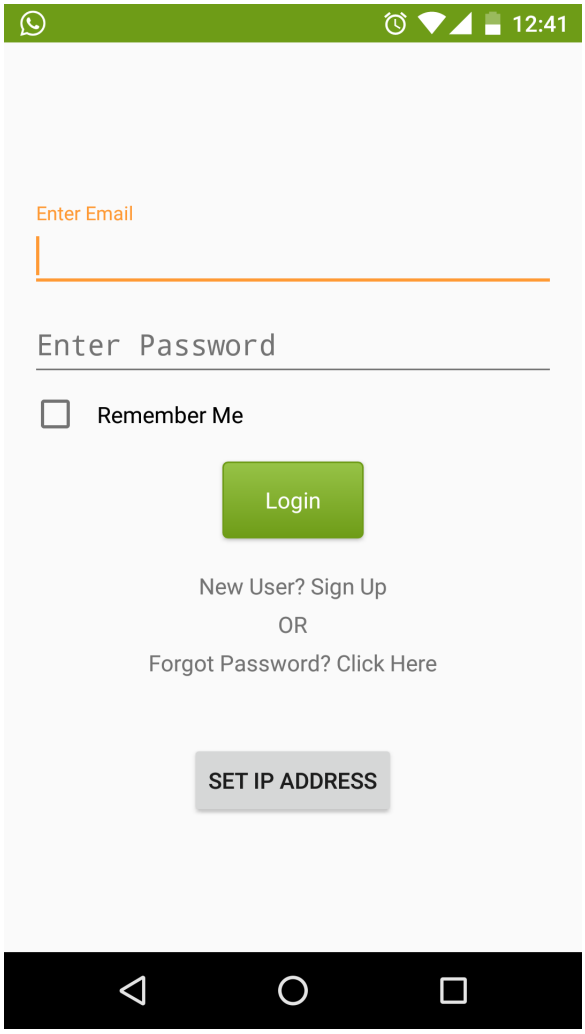

Figure 7.1: Login Screen

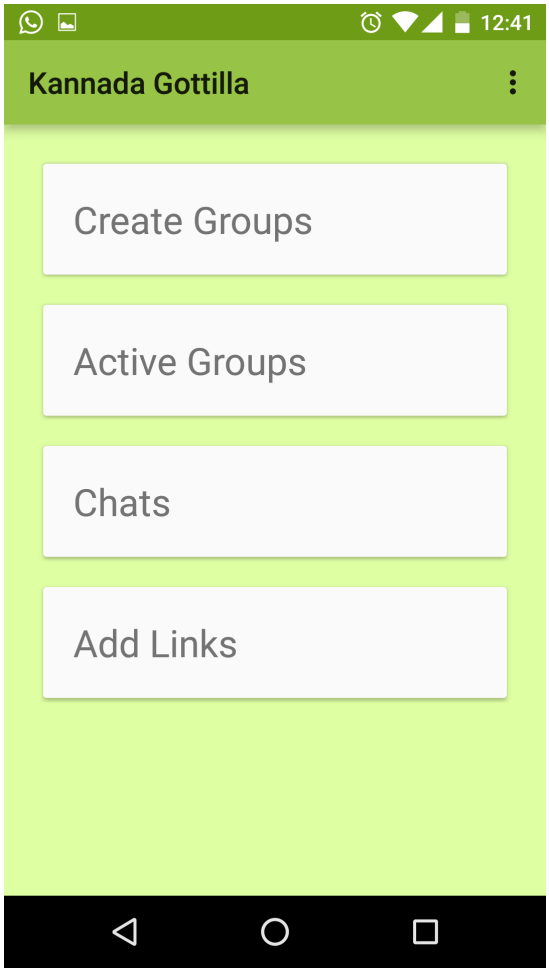

Figure 7.2: Admin's home screen

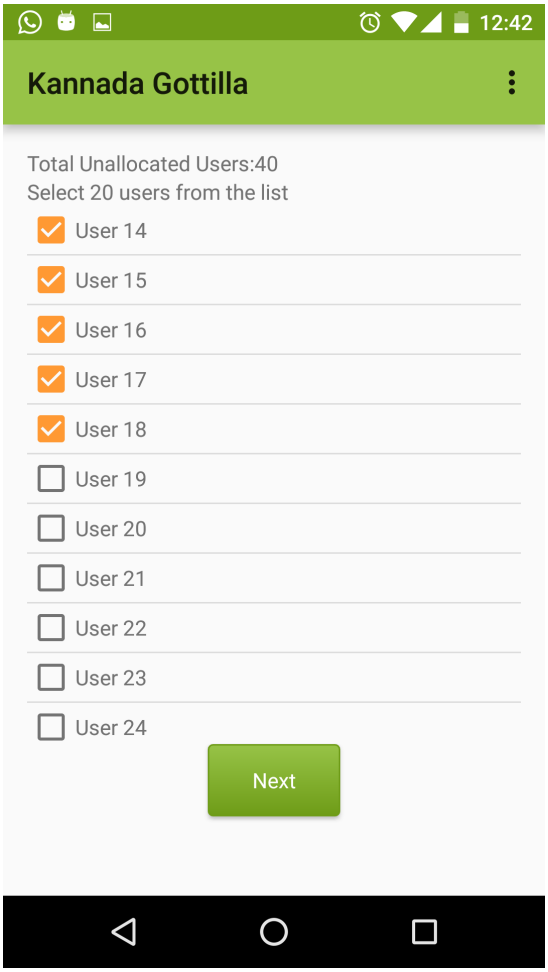

Figure 7.3: Selecting users for the group

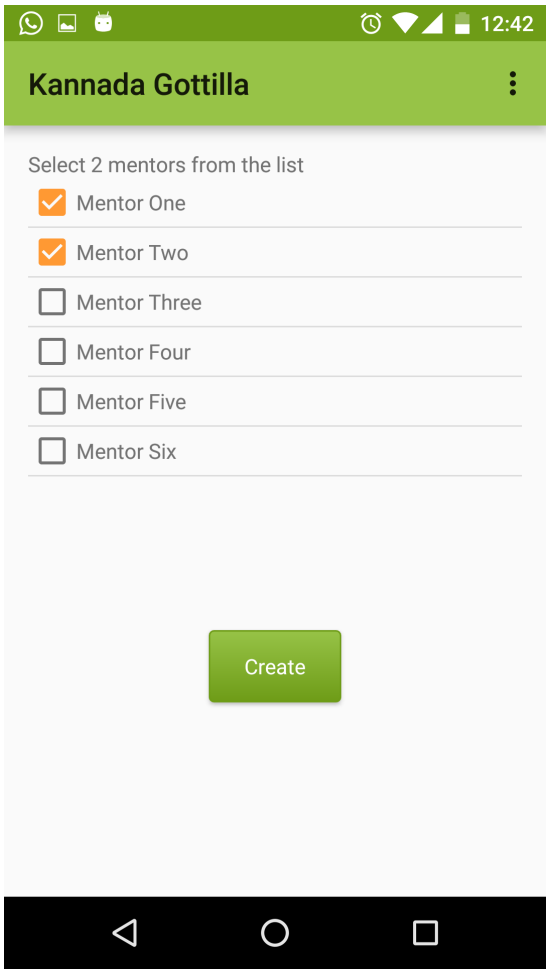

Figure 7.4: Selecting mentors for the group

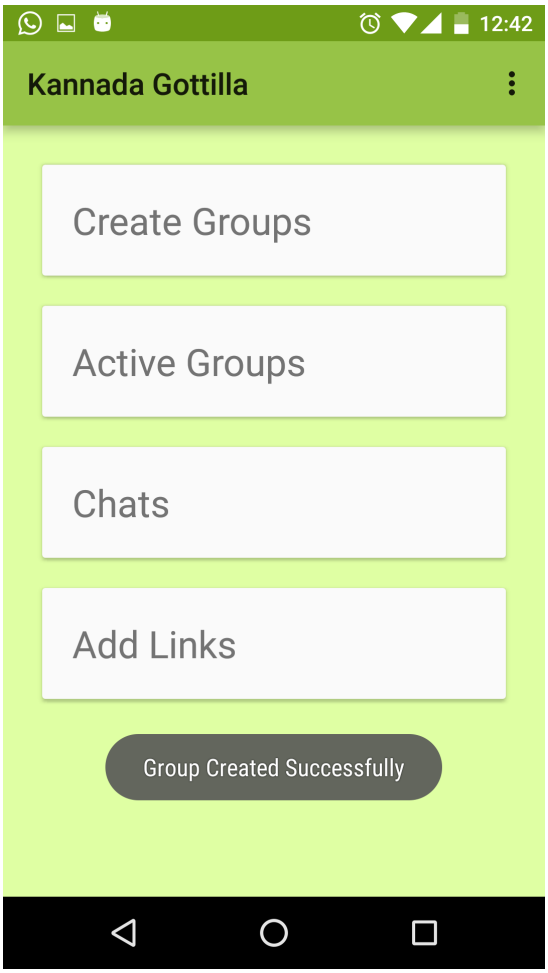

Figure 7.5: Group created successfully

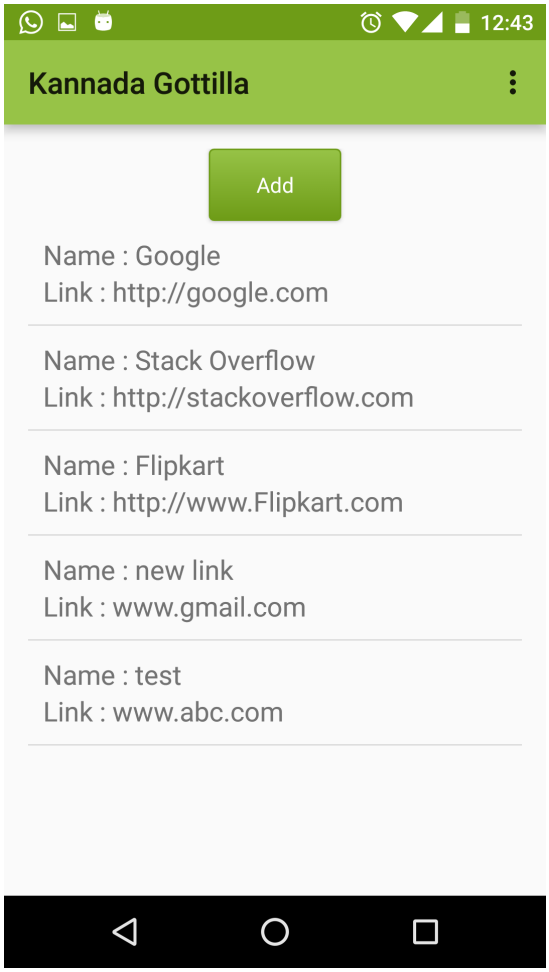

Figure 7.6: Admin's list of study links

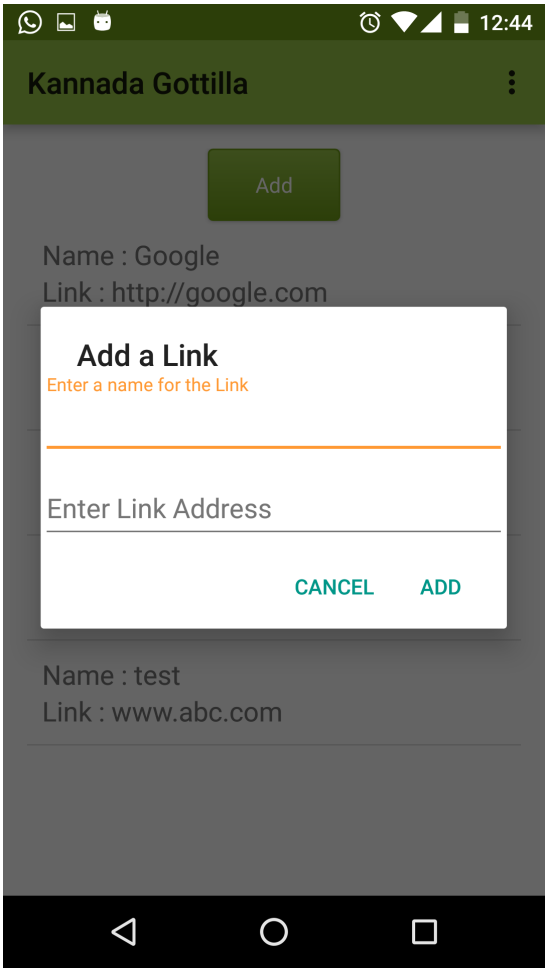

Figure 7.7: Adding a new study link

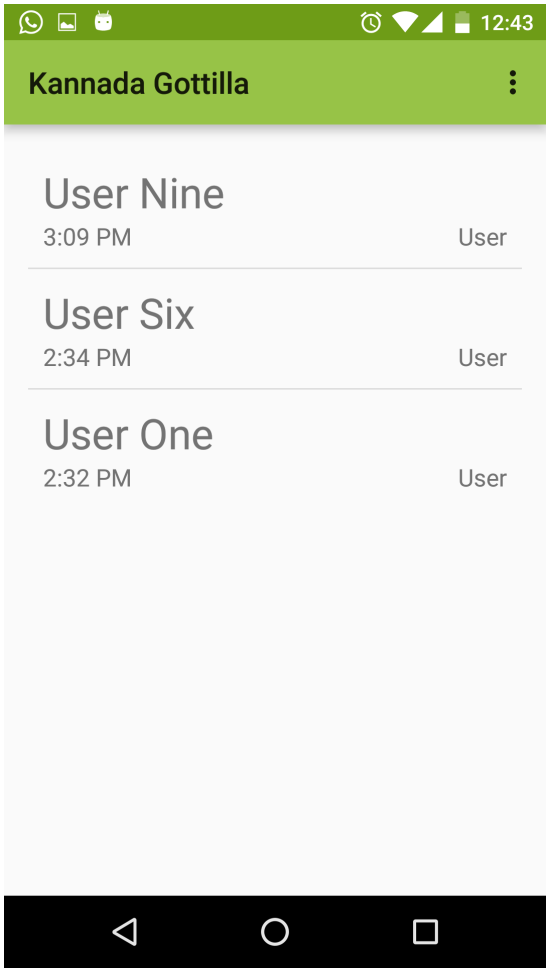

Figure 7.8: Admin's personal messages (sent by users)

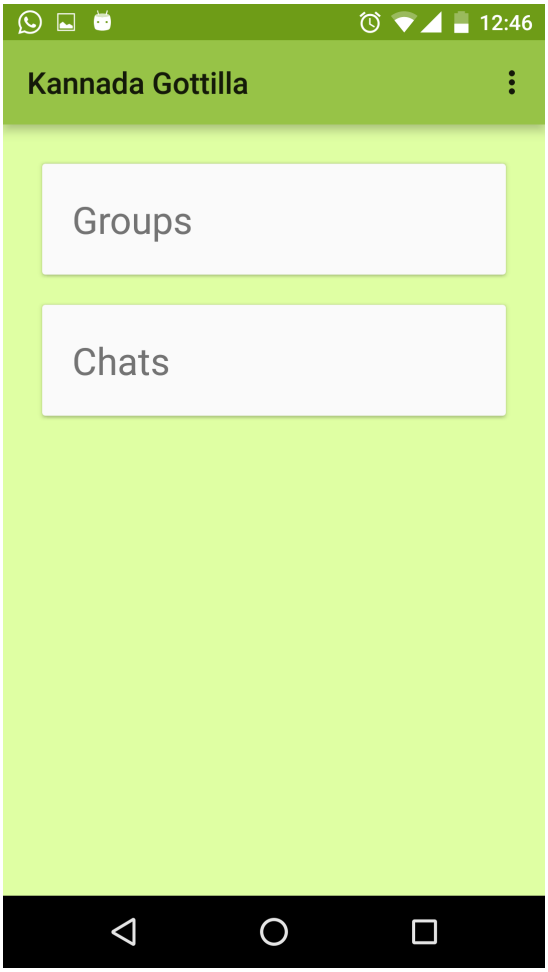

Figure 7.9: Mentor home page

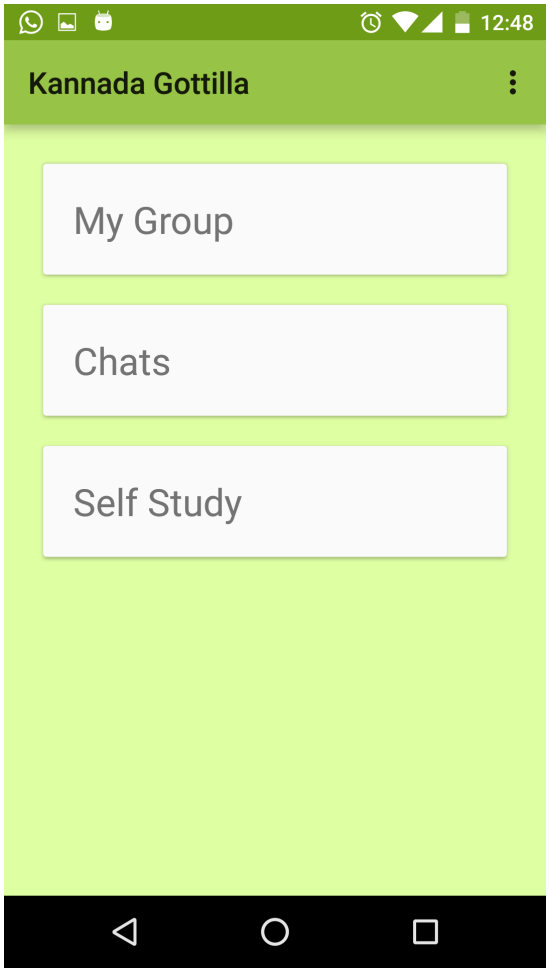

Figure 7.10: User's home page

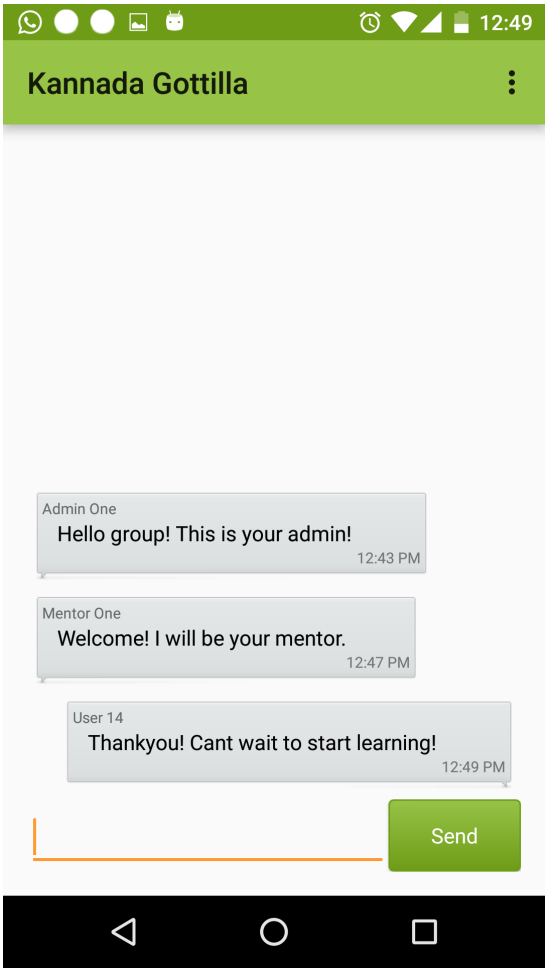

Figure 7.11: Messages in the group

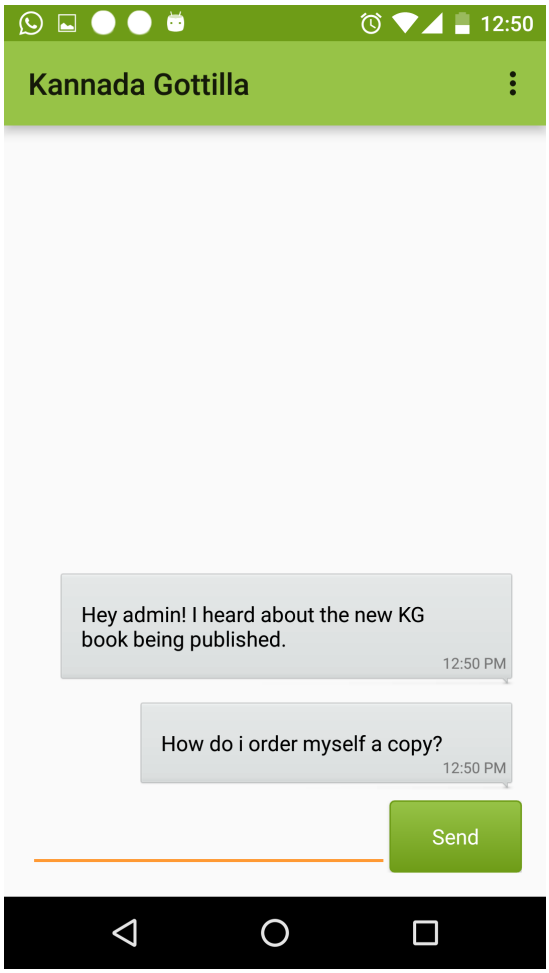

Figure 7.12: User can message admin separately

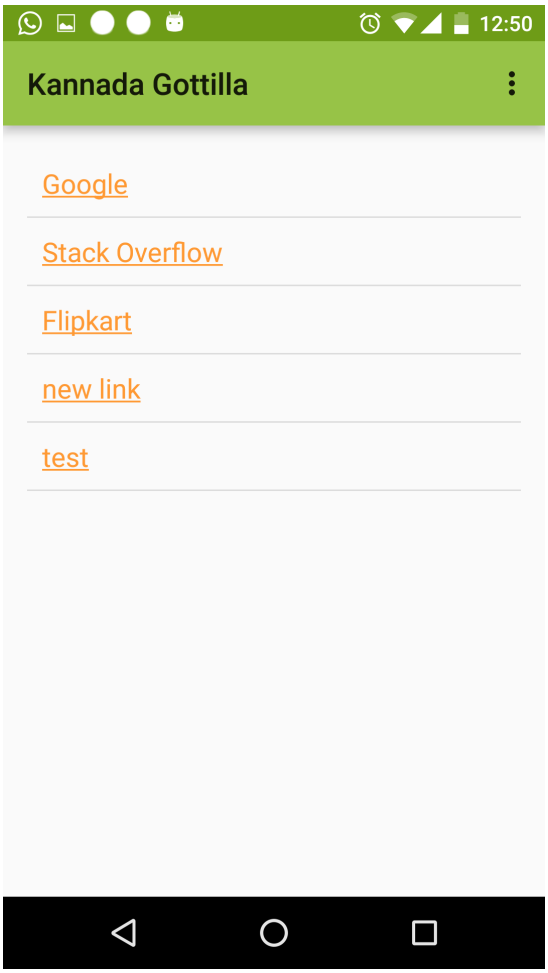

Figure 7.13: User can view the self study links

Chapter 8

Conclusion and Future Work

8.1 Conclusion

With the completion of our project we have fulfilled most of our project objectives. This project can be used in fields like teaching, studying and communication. Also an organization like coaching institution can implement this application for making it cost effective. It will also be a great benefit for people who cannot afford or travel. Besides the above mentioned applications, this project can be applied in various other fields. This application will be available for free in the android market or can be downloaded by using the APK file. This is a simple and user friendly application that will help the users learn Kannada.

8.2 Future Work

The project can be enhanced by adding additional features to such as by using this app for other languages also. More improvement can be done with respect to increasing the number of people in the group and also by bringing guest lecturers. The project can be improved by adding more security. The management of this made very easy and cost effective.

Chapter 9

References

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