

Android Based Instant Messaging Application Using Firebase

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Abstract - Now a days the communication way is changing day by day. We can see that communication is adopted by every one by the change of time, so keeping this in mind the author is going to develop an instant messaging app which includes all the aspects that are required for a good messaging app. This app is an android messenger application. It allows its users to send text messages, share images using camera or gallery and share their location with their friends. Users register with their phone number and Email id's and their friends are made using their contact list.

Keywords- Android, Automation Testing Tools, Automated testing, Test Automation, Android studio, Web Driver.

I. INTRODUCTION

This is the era of technology we are living in. We are introduced with new technology day by day and all of them are making our life easier day by day. In this new era of technology the way of communication has also been changed like we are communicating with each other using internet, so there are many ways already available in the world of internet for communication. Now the whole idea to make communication easy and secure we are here to develop a chatting app. The main objective of the project is to develop a Secure Chat Application. As a result, the product will be developed in terms of extensibility, portability, and maintainability and tested in order to

meet all requirements that are authentic, integrity. This app will be fully Indian based development and will be encouraging the mission "Aatmanirbhar Bharat". We hope to deliver the best quality product as an app that will be full safe and secure for the communication and will be meeting all your expectations. The motive behind the app is to make communication easy and safe. Privacy will be our first priority. We hope to deliver such a product that will be putting an absolute mark on its user's expectations.

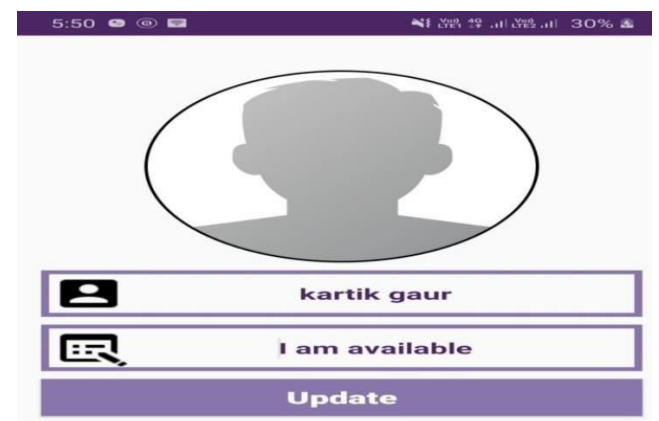
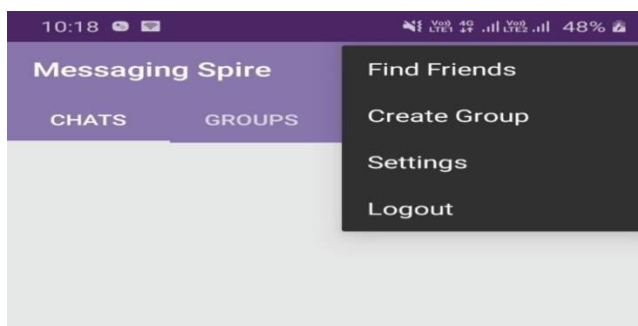
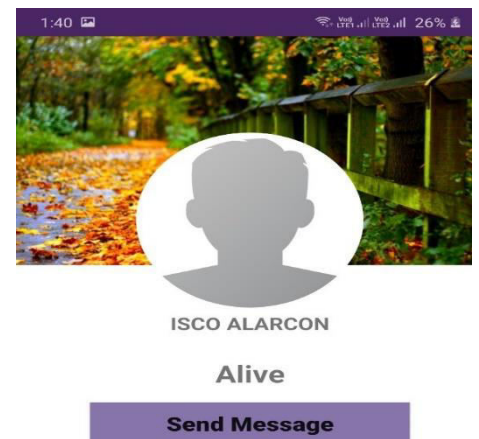
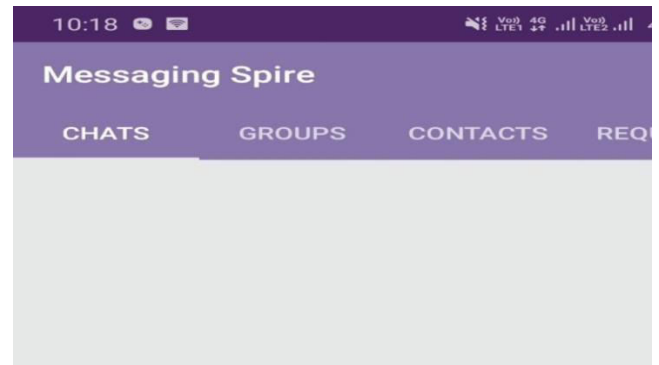
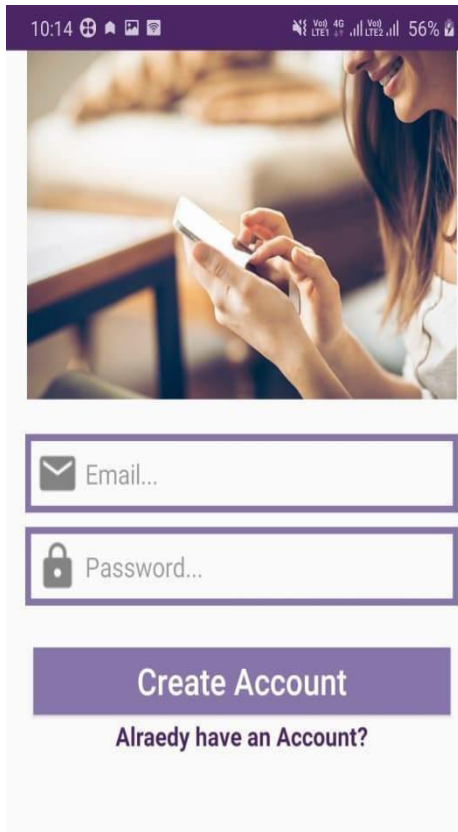
II. FLOW DIAGRAM AND WORKPLAN LAYOUT

You just have to copy the code and run the file on android studio.

- Now in the code, you have to enter your account username and password.
 - After that, you have to Enter the username of the person whose posts you want to like.
2. .

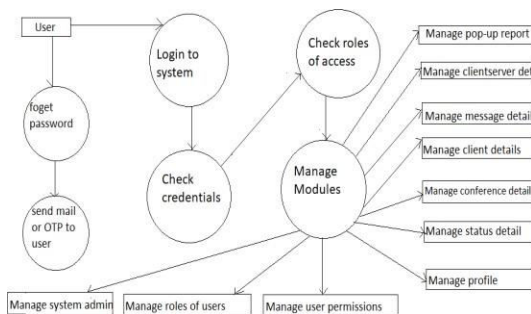
- After that Run the code.
- Give time to code to like the posts and the terminal will display the number of posts liked by the bot.

1. Here are some screenshots given to better understand the process and functionality



3. Flowdiagram:

Here we are providing the flow diagram for our application, so it will be helpful to understand the architecture of application developed.



That describes how the development of any S/W product has to be created. It includes all the aspects of developing the software. It helps the programmers to do their job in fruitful manner. It helps them to work in a structured way. Basically SDLC gives us the way of international standard way of developing any software in IT Industry. It gives the way to companies that they should perform their development action in a standard and structured way.

Key point:

The whole process while developing any software product includes many steps, by following them we can develop a standard software product.

Basically there are six steps which has been included in developing any software product according to SDLC (Software development life cycle) as given below:

- a) Identification: First of all we have to identify the problem we are going to deal. What we are going to develop, it should be truly recognised and identified.
- b) Requirement analysis: After getting the information about the problem we have to do the requirement analysis. What are the basic requirements for the development of the software should be clear.
- c) Design: After analyzing the requirements we have to make a design concept according to which the further development could be performed.

III. LITERATURE REVIEW

While developing any software product first of all we have to recognise all the basic requirements of the users. It was our first step to developing the app that we have to know what the users actually want and what are their requirements, so basically software development starts with the idea of the user requirements. After that the designing phase starts, while keeping all requirements in mind the design has been created. Now the programmers have to implement that design into code. For that there is the proposed method called SDLC.

- d) Development and implementation: After making the design, we have to implement that design concept into code.
- e) Testing: Now when the design has been implanted into code we do testing and check that it is working formally or not. We have to check it is working in the same manner which is pre-defined, or not.
- f) Deployment and maintenance: This one is the last step in SDLC, in which we deploy our software product and try to maintain its facility in working condition.

IV. CHALLENGES

Some of the challenges that we faced are given below-

- I. Huge amount of data is processed every day, so the system built must be fast enough to respond in time.
- II. App may crash due to mismatch or updated version of different type.
- III. Hardware failure was one of the problem which we faced too.
- IV. There was too much of hardware requirements also, so it was also a challenge for developing the app.

A few ways to tackle the challenges-

- I. The system which is being used must be fast enough to detect the anomaly instantly.
- II. For protecting the privacy of the users, the dimensionality of the data can be reduced.
- III. We can take a more trustworthy source, for double verification for users to verify the account login.

V. SYSTEM TOOLS AND REQUIREMENTS

Required Tools:

There are many required tools while developing this software as given below-

- A. Android Studio
- B. FirebaseAuth
- C. Firebase Realtime Database
- D. Firebase Storage
- E. Firebase Invite

System Requirements:

- Used processor:
Windows workstation with AMD/Intel x64 or x86 processor equivalent
- Memory Required:
Minimum 1 GB & 2 GB is recommended
- Required disk space: 500MB

- OperatingSystem:
 - a. Windows 10
 - b. Windows 7(64/32-bit)
 - c. Windows 8(64/32-bit)
 - d. Windows Server2012(R2/R1)
 - e. Windows Server 2018(R2/R1)
 - f. Windows Server 2016
- Required Webbrowser:
 - a. Internet Explorer 8.0-11.0
 - b. MozillaFirefox
 - c. GoogleChrome
 - d. Microsoft EdgeOpera
 - e. Apple Safari

VI. SDLC METHODOLOGY

SDLC (Software development life cycle) is a way of development of any software used by the tech-companies in IT industry. It provides the direction of actions in developing the any software product. There are many aspects in this life cycle as given below-

1. Planningphase.
2. Analysisphase.
3. Designphase.
4. Developmentphase.
5. TestingPhase.
6. Implementation & Maintenancephase.

- I. **The planning phase:** This is the very first step in SDLC in which we make the whole idea of developing any software. We recognize the problem and try to make a plan to give a

solution to that particular problem. This is the first and very crucial phase in SDLC.

- II. **The analysis phase:** This is the second step in software development life cycle in which do analysis on the problem and system requirements. And make sure that our system will be working properly and no third party or any unauthorized person can get the login access. And after doing that we analyze the problem and propose a method of further steps. The basic requirements for this project can be decided according to the needs of the users. Access to the project should be protected from unauthorized users. So, any attempt to access the project must go through some loginprocess.

- III. **The design phase:** This is the third step in software development life cycle and the very important step as well because the next steps are totally based on this. In the designing phase we design the whole concept of our working and planning, that makes it soimportant.

- IV. **The development phase:** This is the fourth step in software development life cycle in which we implement our design concept into coding and make a running application. This includes all the coding parts of the software development. The whole designis

basically converted into the code. And the code is written on the basis of the required functionality of the application.

V. **The Testing Phase:** This is the second last step of software development life cycle in which we basically test our application whether it is working properly or not. In testing we actually check for the flaws available if there are then we try to remove them and we check the whole functions working formally or not. It is also very much crucial phase of software development lifecycle.

VI. **The Implementation and Maintenance Phase:** This is the last phase in in SDLC where the application is provided to all the users and implemented in all type of environment and all the users used it. And the application is maintained and if any of the users faces any problem then it is resolved.

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<https://www.udemy.com/course/learn-androidapplication-development-y/learn/lecture/7810222?start=0#overview>

VII. REFERENCE

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