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An Android Based Global Chat Application

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Abstract— **Android is an operating system for mobile phones, tablets and also will be used for Personal Computers also. It includes a touch screen user interface, cellular networks, camera, network data monitoring and all the other features that enable a mobile phone to be called a smartphone. Instant messaging has become so ubiquitous, an entire generation of internet users is probably unaware there was ever life without it. Various apps like whatsapp, Facebook will provide a way to chat with our known persons. They provide a simple approach to connect with people who are already in our contact list.**

The main objective of this project is to introduce a methodology to provide Messaging Service over the internet which allows to android based smartphone and tablet users to chat with any person in this world. Our objective is to chat with stranger's a share and discuss our ideas and thoughts with them. In this application we have use Google Firebase as an real time back end database which provide real time data connectivity using peer-peer connection. You can chat with anyone using the Google real time firebase database.

Keywords— ***Android, Global Chat, Google Firebase, Cellular networks, peer to peer.***

I. INTRODUCTION

An authentication strategy mistreats life science which will replace typical authorization mechanisms, especially passwords and private identification numbers (PINs), for higher security applications. The most risk of ancient authorization strategies is that passwords and Pins are unit sensitive to be purloined, guessed or retrieved by someone. Moreover, considering the number of net applications a client uses that need a countersign, it's tough for him/her to possess rely multiple and tough to be guessed passwords. On the opposite hand, life science utilizes intrinsic characteristics of someone and don't seem to be prone to fraud. Another Communication is a mean for people to exchange messages. It has started since the beginning of human creation. Distant communication began as early as 1800 century with the introduction of

Television, telegraph and then telephony. Interestingly enough, telephone communication stands out as the fastest growing technology, from mobile wireless, from voice call to data transfer.

The technology has been available for years but the acceptance it was quit recent. Our project is a example of a chat server. It is made up of applications the chat application which runs on the users mobile and communicate different user. To start chatting, they can do Group chat and private chatting.

II. AUTHENTICATION SYSTEM

We used Google type authentication in our global chat application. In Sign In using Google account or Email Id. also we send Verification link on same user enter id and if user used mobile number we send one time Password OTP. User can't access next process until completed verification steps.

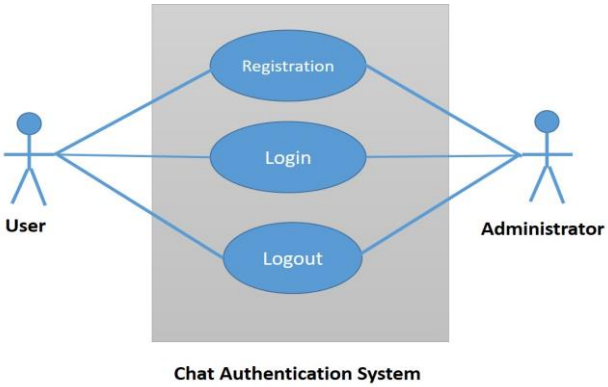

Fig.1 Verification process

2.1. Steps for verify authentication person with Firebase Database:

In this section, new user login process and verify with Google firebase database. We implement two way authentication security for valid user can access the database only the useful area of the digitized sign In. The flowchart of this process and its implementation results are shown in Figure 3

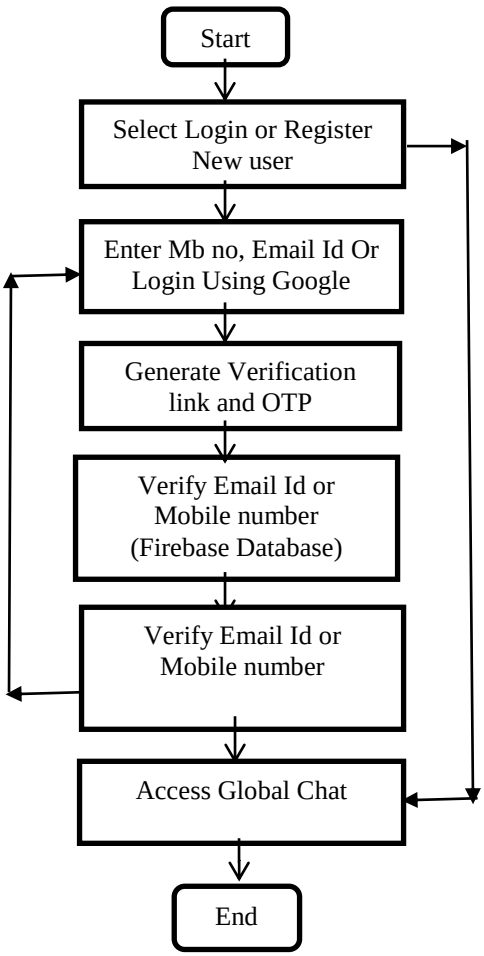

Fig.2 Login and Verification Flowchart

III. GOALS AND OBJECTIVES

- To Implement an International Chat System with Semantic analysis.
- To implement the Google firebase Real Time Database To access and store the online data.
- To implement the semantic analysis for the large collected data and process it into the small sub-modules.

IV. PROBLEM STATEMENT

"***To implement an android based complete Online Global Chat application with semantics Analysis using Google Firebase Database***."

This project is to design a chat application with local and global user communicate with their knowledge and information with each other's.

Used Google Firebase Database and real time Data Store and access system by Firebase Database.

By using peer to peer client server protocol to access the online data

V. RELATED WORK

A literature review can be refers to as a review of current system that the researcher had done previously and the review of the system that will be developed. Literature review also focuses on the knowledge and ideas established on a topic as well as their strengths and weaknesses. Nowadays, technology is getting better and better to replacing the traditional system to speed up the process by introducing the computerized system. Internet - based instant messaging applications allow users to send/receive messages over the internet. It requires internet connection to transfer messages from one device to another device. There are various applications like whatsapp, hike etc. but many android mobile apps not provided semantic analysis. We developed global chat application on android devices. Using this application we can chat with strangers all over word.

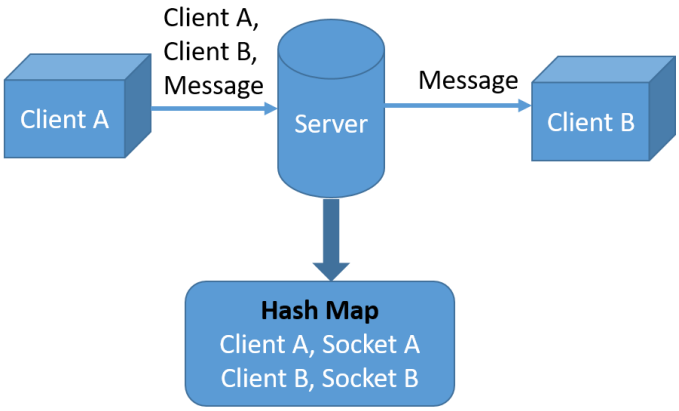

Fig.3 Hash Map Technique for Data synchronization

VI. PROPOSED WORK

Internet - based instant messaging applications allow users to send/receive messages over the internet. It requires internet connection to transfer messages from one device to another device. There are various applications like

whatsapp, hike etc. but we developed global chat application on android devices. Using this application we can chat with strangers all over word. We also divided apps user into various location. That why we can find nearest user easily and communicate. Semantics analysis use in our project to detect our important massages when user offline and show grope wise later. In this application we have use Google Firebase as a real time back end database which provide real time data connectivity. User can create our own group as per there knowledge and share idea to other easily. Semantic analysis used for the process on large collected data and divided it into the small sub-modules.

6.1 Semantic analysis keywords

1 Mining chat conversations.

2 User identification.

3 Information extraction text mining.

4 Machine learning

Text reduction using ***Vectorization algorithm*** chat data can be divided into only require data. Latest semantic analysis algorithm also used for Processing chat database.

We have use Google Firebase as a real time back end database which provide real time data connectivity. Firebase database is reliable, stable and always up to date with the market new releases.

6.2 Vectorization for Text reduction

A very common disadvantage in all discussed algorithms is that the synonyms of the keywords are not covered in text summary. Also in many algorithms, factual information is also ignored in text summary steps. Further, in text summary, some sentences are repeated due to different attributes/properties of keywords. Speedy processing of document is another important factor in text reduction algorithms performance. These disadvantages are taken care of in proposed system architecture as discussed in next section.

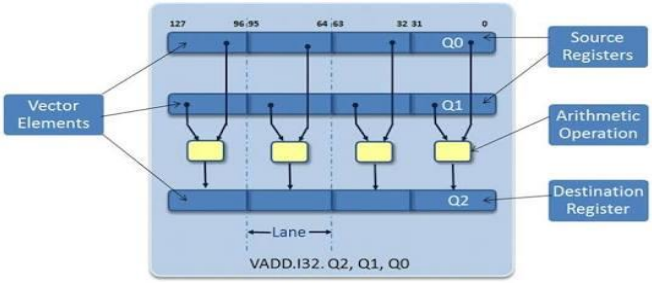

Fig 4. Vectorization Technique

The entire document is scanned using the sentence vectorization algorithm. Finally, the text summary is compiled by concatenating all the sentences obtained during the sentence vectorization process.

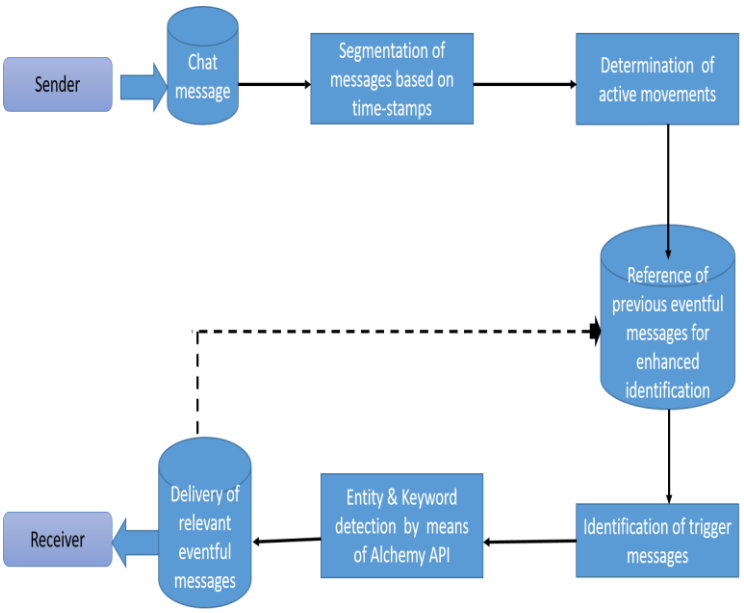

Fig.5 System Architecture

VI. MATHEMATICAL MODEL

System S=M-Learning System

1. System S={C, T, Q, A, Output}

[C=Chat, T=Test, Q=Queries, A=Assignments] Where Chat C={S', T, O, L} and S' ϵ C

[T=Technical, O= Operation System, L=Language]

S'= {v, t, a} = [Video, Text, Audio] L=Language (Android)

M-Learning System (Mobile) M={P,S, Output} [P=Performance, S=Specification] R={S, M}

Output={R}

VII. CONCLUSION

These days everything on the internet is going social. The key idea of developing this system is to chat with strangers without their personal identification like contact number, mail address etc. also semantic analysis used for finding important message when user offline. This project hopes to develop a chat service Android app with high quality user interface.

VIII. FUTURE SCOPE

i. Performance can be increased in terms of speed and memory.
ii. In future we may be extended to include features such as.
   a. File Transfer
   b. Group Conference call
iii. In future we may be developed on Io's and window devices.

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