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Survey Paper on India's own Messenger APP like WhatsApp with Some Additional Features

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ABSTRACT:

In an era dominated by digital connectivity, the demand for secure, user-friendly, and feature rich messenger applications Is at an all-time high. This abstract introduces a cutting-edge messenger application designed to meet the evolving communication needs of user worldwide. Our messenger application, similar to Whatsapp, stands out with its emphasis on robust security, seamless user experience, and innovative features. Security isparamount, and end-to-end encryption ensures that user conversations remain private and protected from unauthorized access. The application employs state-of-the-art encryption algorithms to safeguard user data, giving users confidence in the confidentiality of their communication. User experience is a key focus, and the interface is intuitively designed for effortless navigation. A minimalist yet functional design approach ensures that users can easily access a plethora of features without compromising simplicity. The application supports multimedia sharing, voice and video calls, and real-time location sharing, enriching the communication experience.

Keywords: Instant Messaging, Voice and Video Calls, Status Updates, User Profiles, Integration with Social Media, QR Codes.

I. INTRODUCTION

1.1 Motivation -

Instant Communication: Acceleration of Communication: The primary motivation is to provide users with a platform for instant and real- time communication. The goal is to reduce communication barriers and enable people to connect instantly, regardless of geographical distances.

Global Connectivity: Breaking Down Borders: Real-time messenger apps aim to break down geographical barriers, allowing users to communicate seamlessly with friends, family, and colleagues around the world. This fosters a sense ofglobal connectivity.

Cost-Effective Communication: Affordable Solutions: By utilizing internet data for communication, these apps offer a cost-effective alternative to traditional SMS and international calling. This motivation aligns with the goal of making communication accessible to a broader audience.

Multimedia Rich Communication: Diverse Expression: Enabling users to share not only text but also multimedia content like photos, videos, and voice messages enriches the communication experience. The motivation is to provide users with diverse and expressive means of communication.

User-Friendly Interface: Accessible Technology: Real-time messenger apps strive to create user- friendly interfaces that are easy to navigate. This motivation ensures that people of all ages and technical backgrounds can comfortably use the app for communication.

Innovation in Features: Continuous Improvement:To stay competitive and relevant, messenger apps are motivated to introduce new and innovative features. This could include functionalities like voice and video calls, group chats, status updates, and more, enhancing the overall user experience.

Privacy and Security: User Trust: Ensuring user privacy and security is a crucial motivation. By implementing features like end-to-end encryption, messenger apps aim to

build trust among users, assuring them that their communication is secure and private.

Adaptation to Changing Needs: Dynamic User Needs: The motivation to adapt and evolve is driven by changing user needs and technological advancements. Messenger apps continuously updatetheir features to meet the dynamic expectations of users in a rapidly evolving digital landscape.

Cross-Platform Connectivity: Seamless Integration: Enabling users to stay Connected across various devices and platforms is a motivation to

provide a seamless and integrated communication experience. This ensures that users can access their messages from smartphones, tablets, and computers. **Business and Productivity:** Professional Communication: Real-time messenger apps are motivated to cater to the communication needs of businesses and professionals. This includes features like document sharing, collaboration tools, and integration with other productivity apps.

Community Building: Connecting Communities: Facilitating community building and group interactions is a motivation. Messenger apps play a role in connecting people with shared interests, whether it's within a family, friend group, or larger community.

Customer Engagement: Enhancing Customer Experience: For businesses, messenger apps serve as a tool for engaging with customers in real time. This motivation aligns with the goal of providing excellent customer service and support.

1.2 Problem Definition:

Users across the digital landscape seek an advanced messaging application that goes beyond basic communication. The existing solutions often face challenges, prompting the development of Unified Chat. The identified problems are:

Privacy and Security: Current messaging appslack robust end-to-end encryption, leaving user data vulnerable to unauthorizedaccess.

Fragmented User Experience: Users face inconsistencies when transitioning between devices (iOS, Android, web), impacting the overall messaging experience.

Limited Multimedia Interaction: The absence of comprehensive multimedia features restricts users from expressing themselves beyond text messages. **Real-Time Communication Gaps**: Reliable voice and video calling functionalities are not uniformly available, hindering seamless real-time interactions. **User Interface Complexity:** Existing interfaces lack universal appeal and intuitive design, posing a challenge for users with varying technical backgrounds.

Inefficient Group Collaboration: Group messaging lacks essential features such as group calls and seamless file sharing, hindering collaborative efforts.

Notification Latency: Current notification systemsare not consistently responsive, leading to delays inupdating users about new messages or app updates.**Limited Offline Functionality:** Users face challenges accessing and composing messages in offline scenarios, with limited synchronization capabilities upon reconnecting.

Lack of Personalization: Current messaging apps offer limited customization options, failing to meetthe diverse preferences of users.

Scalability and Performance Issues: The existing backend infrastructures struggle to scale with a growing user base, resulting in compromised app performance and responsiveness.

II. Literature Survey

1. "**Forensic Analysis of Encrypted Instant Messaging Applications on Android**". The main goal of this paper is to study and analyze the most popular applications' encrypted data storage locations in Android devices. (Khushboo Rathi, 2018)[1]

2. "**Backup Manager- An android application for storing messages and apps information online**" The implementation of backup manager and secured message broadcaster (sender + receiver) with wireless mac as a key, smartly equipped with SHA-1 algorithm and base64 is fairly new concept on a single platform that is android. (Anupam Shukla, 2015) [2]

3. "**The Seamless Communication Mechanism both for Individuals and Groups**" proposed the concept of a system that enables the user to perform group chat and individual chat simultaneously. Integrating the benefits of both individual and group conversations can be a solution to improve

inconvenient parts of messenger apps. It is expected that communication will proceed smoothly with the messenger app that enables multitasking without sharing screenshots of the conversation. (Nemoto, 2019)[3]

4. "**A Cryptographic Approach for Secure Client – Server Chat Application using Public Key Infrastructure (PKI)**" encryption and identity authentication have been added to a simple chat application to let clients talk to each other instantly over a secure channel in the internet. In the authentication process, both certificate and password authentication have been used. While a trusted third party certificate authority, in which public keys were signed, has been used to authenticate the server, a key distribution center called as KDC, which consists of authentication server and ticket granting server, has been used. Thus, users are able to chat with each other and server safely. (Karabey, 2016)[4]

5. "**Design and Implementation of AES and SHA-256 Cryptography for Securing Multimedia File over Android Chat Application**" successfully implemented the AES algorithm with the SHA-
256 key to encrypt and decrypt multimedia files such as images, audio and video. That way, of course, sending confidential multimedia files will be more protected. It's just that the encryption and decryption process produces negative side effects that can increase file size, even though the increase is not significant. (Fauziah, 2018)[5]

6. "**A Survey of Various Sentiment Analysis Techniques of Whatsapp**" Sentiment analysis is an umbrella term that covers many diverse fields, related to computer science as well as social disciplines such as sociology, psychology, and ethics. There are various stages of sentiment analysis methods proposed so far. The pre-processing step involves eleminating missing and unnecessary values from the dataset. (Kaushal, 2023)[6]

7. "**Android Based Chat Application Using Firebase**" the project is economically feasible as the only requirement for a user is a functional smart-phone with the android operating system. The project will be ready within a couple of months of the report release. (Shukla, 2021)[7]

8. "**Comparative Study Of Audio And Video Chat Application Over The Internet**" This research focus on enhancement quality of VoIP chat application over the internet. As VoIP packets is equipped with noise and echo as in Figure 14 of test experiment performed this influencing factors must be minimized to enhance the quality of VoIP communication. (Rajnish Singh, 2018)[8].

9." **Emoticon-based Text Steganography in Chat**" Information hiding is one of techniques used to protect sensitive information. Secret data can be concealed into different cover media such as images, videos, audios, and written texts. Embedding secrets into written texts is a challenging task because written text contains less redundant spaces which could be used for embedding. (Wang, 2009)[9]

III. SYSTEM ARCHITECTURE

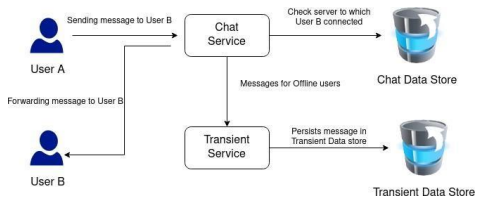

Figure 3.1: System Architecture

1 **User-Friendly Interface:** Develop an intuitive and user-friendly interface that caters to users of all ages and technological proficiency.

2 **Security and Privacy:** Implement robust end-to-end encryption to ensure secure communication and protect user privacy.

3 **Multimedia sharing:**Facilitate seamless sharing of text, images, videos, documents,and other multimedia files.

4 **Cross-Platform Compatibility:** Ensure the app functions seamlessly across various platforms, including iOS, Android, and web browsers.

IV.PROPOSED IDEA

• Adding a Music from Music Library at thetime of Upload.
• Downloading Status of Another Contact usingPermission Manager.

- Chat Screenshot Taking with PermissionManager.
- Photo Quality selection using Slider whenSending Message.
- Pin Important Messages in Chat.

CONCLUSION

In this paper a study different features is proposed. The content of this paper are studied from variety of sources and also we have introduced ourcontribution in this system. The main intention of this application is to introduced new features of whatsapp .In this project, we have successfully designed and implemented an instant messaging application that replicates the core functionalities of WhatsApp while introducing two significant additional features: the ability to add music to user statuses and the capability to download statuses shared by other users. This effort involved extensive software development and testing to ensure a seamless user experience.

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