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Message Scheduling and Tunning Notification in Chat App

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Abstract: *"Smooth communication is essential in both the personal and professional domains in our increasingly interconnected society. Users could find it difficult to effectively plan their meetings and talks without scheduling tools, which could result in disarray. Users may stop participating in conversations or skip out on discussions, which can hinder teamwork and the development of relationships. Important communications may not be seen by users promptly, which could cause communication to lag or information to be overlooked. The goal of the real- time messaging app with message scheduling and notification alerts is to close communication gaps and guarantee that users are always informed. while making it possible for them to converse more effectively. This project aims to improve user convenience, time management, and overall communication efficacy by incorporating features like and an important message alert system that notifies the receiver with a ringtone when a critical message is received. The objective is to offer a dynamic, intuitive platform that meets the demands of contemporary, fast- paced lives.*

Keywords: message scheduling, notification alert, real-time messaging, notification ring for critical messages

I. INTRODUCTION

Instant messaging, which allows people to connect in real time across distances, is now recognized as a key component of communication in modern times. Advanced features like adaptable alerting and message scheduling, which users are demanding more and more for improved convenience and time management, are sometimes absent from traditional messaging apps. Both individuals and businesses need technologies that enable them to organize and set up communication for efficiency in addition to providing instant message delivery and an important message alert system that notifies the receiver with a ringtone when a critical message is received. The paper presents a real-time messaging application with instant notification rings for received messages in order to meet the growing demand for smooth and effective communication. Users will never miss any crucial updates due to this. Furthermore, users can schedule and send messages whenever it is most convenient for them, which improves productivity and time management. It meets the need for modern, approachable communication tools that are dependable and flexible. In the fast-paced world of today, this makes it perfect for both personal and business use.

1.1 Background

Existing chat applications primarily focus on real-time messaging with basic push notification functionality. Although some apps offer features like starred or pinned messages, they do not allow users to schedule messages for future delivery, and alerts for important messages are generally limited to simple notification tones. Without scheduling features, users may struggle to organize their conversations and meetings efficiently, leading to disorganization. Users might disengage from conversations or miss out on discussions, which can affect collaboration and relationship building. Users might not see important messages in a timely manner, leading to delays in communication or missed information.

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1.2 Contribution of this work

In many communication scenarios, users need more than just real-time chat functionality. Often, there is a need to send messages at a specific time, whether for reminders, meetings, or greetings. Additionally, important information can sometimes be overlooked in crowded conversations, making it crucial to draw attention to critical messages. This app addresses these issues by adding scheduling and alerting functionalities. This paper focus on the chat application that goes beyond basic communication features, offering scheduled message delivery and an alert system for important messages, thereby improving the user experience and message management capabilities.

The mobile application is designed as a chat platform that allows users to communicate in real-time with following features:

- **Schedule Message:** Users can compose a message and set it to be sent at a specific date and time. The app uses Android's alarm manager to trigger the message at the scheduled time.
- **Important Message Alert:** When sending a critical message, the sender can mark it as "important". The recipient receives this message with a special alert in the form of a calling ringtone.
- **Enhanced Communication:** Enables users to schedule messages for future delivery, improving organization and communication flow.
- **Critical Message Alerts:** Ensures important messages are not missed by notifying the recipient with a distinct alert tone.

II. PROPOSED METHODOLOGY

To overcome the limitations of existing application, this paper proposes a designed for time scheduling and Notification Alerts.

2.1 System Architecture:

- **Create an Account:** In order to use the chat application, users must first create an account.
- **Open Chat:** The user types a message in the message box and launches a chat with the selected contact.
- **Schedule Option:** The user chooses the time and date that the message shall be sent by tapping on the schedule option.
- **Establish Notification Priority:** The user determines the importance of the planned message notification.
- **Send Message to Server:** The server receives the message.
- **Server Redirection:** Depending on the predetermined time, the server reroutes the planned message to the appropriate client or clients.
- **Client Notification:** The recipient's device receives the message and notifies the receiver with a ringtone when a critical message is received.

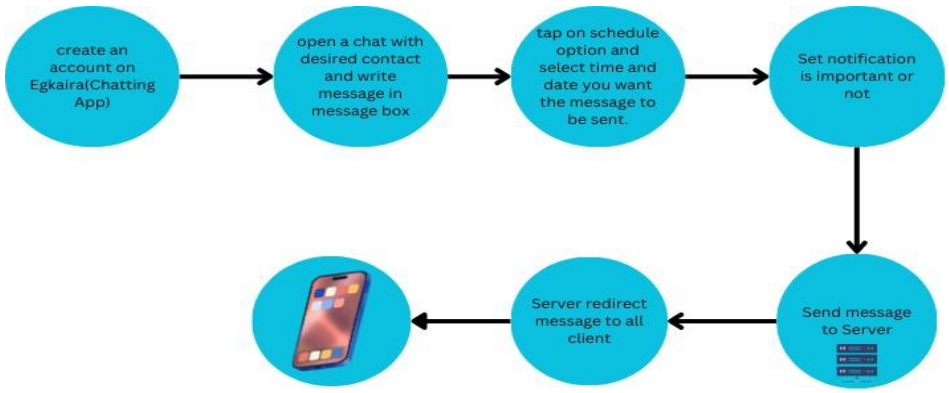

Figure 1.Architectural Model

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2.2 Workflow

Scheduling Messages

The Schedule Message feature allows users to write a message and specify a future date and time for it to be delivered.

How to Schedule a Message:

- Open a chat with the desired contact.
- Write your message in the message box.
- Tap on the "Schedule" option (represented by a calendar or clock icon).
- Select the date and time you want the message to be sent.
- Tap **Confirm** to schedule the message.

Important Message Alerts

When an important message is sent, the receiver's phone will ring with a ringtone and vibrate, even if the app is closed or running in the background. This ensures that the message catches the recipient's attention.

How Important Message Alerts Work:

- A sender marks a message as "Important" by selecting the "Important" flag before sending the message.
- The recipient's phone will ring with a notification tone and vibrate for up to 30 seconds.
- This feature is ideal for urgent communications where the recipient must be immediately notified

Advantages:

- **Scheduling Communication:** By allowing users to schedule messages ahead of time, they can improve efficiency and time management by guaranteeing timely delivery of events, reminders, or professional updates.
- **Attention-Grabbing Notifications:** By guaranteeing that users never overlook crucial messages, real-time notification rings enhance engagement and response.
- **Flexibility:** To accommodate a range of demands and lifestyles, the app lets users control communication on their own terms, whether that means planning future messages or quickly reacting to real-time warnings.

III. LITERATURE SURVEY

Traditional approaches primarily include:

Mobile Based SMS Scheduler for Educators using Preemptive Priority Based Scheduling:

In this application, Five messages can be queued in this application before being sent. Depending on the priority of the reminder and the degree of urgency of the messages, the program will notify the user of the upcoming messages before sending them.

Intelligent Daily Scheduler.:

Although to-do list apps are offered in this application as answers to the scheduling issue, they don't offer much information on how people manage their time.

Context-Aware Instant Messenger with Integrated Scheduling Planner:

The solution application allows staff members in businesses and university students to schedule any appointment through an instant messaging system, and it is specifically made for all computer users.

Pill Dispenser with Alarm Via Smart Phone Notification:

To assist them in taking the proper prescription at the right time, they suggest a pill dispenser with an alert system.

IV. RESULT

The mobile application is designed as a chat platform that allows users to communicate in real-time with following features:

- **Schedule Message**: Users can compose a message and set it to be sent at a specific date and time. The app uses Android's alarm manager to trigger the message at the scheduled time.

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- **Important Message Alert**: When sending a critical message, the sender can mark it as "important". The recipient receives this message with a special alert in the form of a calling ringtone
- **Enhanced Communication**: Enables users to schedule messages for future delivery, improving organization and communication flow.
- **Critical Message Alerts**: Ensures important messages are not missed by notifying the recipient with a distinct alert tune.
- **Do not disturb**: Even when Do Not Disturb mode is enabled, alert notifications may still sound. However, users have the flexibility to manage these settings according to their preferences.

V. APPLICATIONS

- **Personal Communication**: Provides planned messages for occasions like birthdays or reminders, as well as quick notifications, allowing users to maintain relationships with friends and family.
- **Business Communication:** Assures productivity and efficiency by enabling teams to schedule updates, reminders for meetings, and task assignments.
- **Education:** Instructors and students can use the app to plan class reminders, assignment due dates, and significant announcements.
- **Healthcare:** Physicians and clinics can set up follow-up messages or appointment reminders for their patients.
- **Event Management:** Enables prompt communication with guests by facilitating the delivery of updates or reminders about events.
- **Customer Support:** Companies can utilize the app to instantly inform clients about service requests or order updates.

VI. FUTURE SCOPE

This technology may eventually be extended beyond the browser to interface with several platforms, including Instagram, Snapchat, WhatsApp, and many more. Our project's primary goal is to schedule the alert notice and message. Businesses may stay on top of their customer communications by scheduling SMS messages. can utilize the app to instantly inform clients of service requests or order updates.

VII. CONCLUSION

This paper presents an innovative mobile application designed as a chat platform that allows users to communicate in real-time. Leveraging Firebase's real-time database and cloud messaging service, the app enables seamless communication between users. What sets this app apart are its two key features: scheduled messaging, allowing users to set messages for future delivery, and important message alerts, which ensure urgent messages are not missed by triggering a calling ringtone for the recipient.Important communications may not be seen by users promptly, which could cause communication to lag or information to be overlooked. The goal of the real-time messaging app with message scheduling and notification alerts is to close communication gaps and guarantee that users are always informed.

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