INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

ISSN
INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.488

Chat Application for Students using Flutter & Dart

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ABSTRACT: According to the research by Statista more than 40 million messages are sent and received online in 60 seconds. This shows that online messaging apps on android are still one of the top most engaging things people spend time on. In this project we are developing an android chatting application using Flutter and Dart. The target audience of CollegeNotes will mainly be students but anyone really can use it, it has some extra features that will be handy for students thus the name.College Notes will use Material Design for the user interface keeping it very simple so almost anyone can use it. We will follow a rich dark theme to allow the user to stay on the application for a longer period of time.The users will also be able to add events in the calendar with the use of the app and can save/delete notes.

KEYWORDS: Chat App, Flutter App, Notes

I. INTRODUCTION

Although Java is the most widely used and the official language for android application development, we decided to make our app with Flutter and Dart as it is backed by Google and we can design great user interfaces with very little code. The User Interfaces can be selling point for android application as the aesthetics allows the user to stay on the application for longer periods.We are going to build one-on-one chat application where users can search other users and can start chatting immediately. They can share image and as to make chatting more efficient we implemented speech to text where the users can just talk and send the messages without a keyboard.

Users can create timetables to remind them about their daily lectures or any other events and it shows up on Google Calendar.As the last feature users will be able to create sticky notes in the app which will be stored in their account and they can delete it whenever they want to.

II. BACKGROUND

Messaging apps are the foremost widely used smartphone apps, during 2018 over 1.3 billion monthly users were reported using WhatsApp and Facebook Messenger 980 Million monthly active users of WeChat and 843 million monthly active users of QQ mobile. While samples of messaging apps include WhatsApp, Facebook Messenger, WeChat, QQ Messenger, Telegram, Viber etc. Every app has different specific uses like few apps specialize in messaging like WhatsApp, Some feature image chat like Snapchat, the opposite social platforms began adding messaging through chat rooms. Instant Messaging apps have now developed into broader platforms and aren't necessarily chained as a main feature. Companies started using messaging as the simplest way to produce support regarding queries and solve them on e-commerce applications.

As communication moves from texting and email to messaging applications, communication has become faster and more efficient, a Facebook survey showed that 65% of individuals surveyed thought that messaging applications made group messaging easier..

III. PROPOSED SYSTEM

In the proposed system people will be able to chat with any registered user of our app using their username as a search query. We are developing this application purely using Flutter and Dart for creating a beautiful user interface.
We will follow a strict 3 color dark palette for designing the app theme to make sure user can use the app over extensive period of time.

While accessing One-to-One chat screen users will be able to send images which can be implemented using Firebase Cloud Storage which is very direct, fast and simple to use.

Users can use a speech to text service which allows them to type the messages without keyboard which makes communication easier. The speech to text service used can produce text documents in less that half the time it takes for the user to type. There is little-to-none delay to convert the recognized words that the user speaks into text that will be displayed on the TextField in the application.

IV. PSEUDO CODE

Step 1: Check if user has account
Step 2: if(userId = null)
            Navigate to signup screen
     else
            Sign in into the application
Step 3: to get chat room id
       if(a.substring(0,1).codeUnitAt(0) >b.substring(0,1).codeUnitAt(0))
            display the username of the person you sent message
     else
            display your username to the user
Step 4: on pressing send take input from text field and create a document in firebase
Step 5: send the text document wrapped in a container to other users.
Step 6: end

V. ACTUAL IMPLEMENTATION

CollegeNotes application features college chat, timetable, and notes. We developed the application from scratch using Flutter, Dart, and Firebase as database.

Search Users: When you want to chat with someone u just need to enter their username in the search bar. The search text input compares the string with any user in the database and shows results upon clicking search icon. Users can also search themselves but even after clicking message they cannot message themselves the structure is shown in Fig 1.

One-to-one messaging: You can chat with the registered person after searching their username, all kinds of image files can be sent which are uploaded using high speed cloud database implemented using Firebase Storage. The structure of messaging is shown in Fig 2.

Speech-to-text: After granting app the permissions to record audio/access microphone the users can use speech to text. Users can just speak whatever they want on the chat screen and the speech to text service listens to users and converts recognized words into text. To use this function user must press the mic icon in the chat screen. This feature makes keyboard less conversation possible and it is a lot faster than actually typing all the text on the device.

Timetable: CollegeNotes uses Google Calendar API to implement Timetable feature. Users can specify the date and time an event starts and pick the date/time when the event ends as well. The events will show up in Google Calendar and you will get notifications through Google Calendar. This feature will be useful to create online lecture timetables, test or exam timetables to keep the students notified.

Notes: Users can create sticky notes within the app. These notes are also stored using Firebase Firestore and are generated base on completely different user id. Users can create as many notes they want and as long as they want, the notes are fully scrollable. The notes can be deleted as well if the user decides that they don't need the notes anymore.
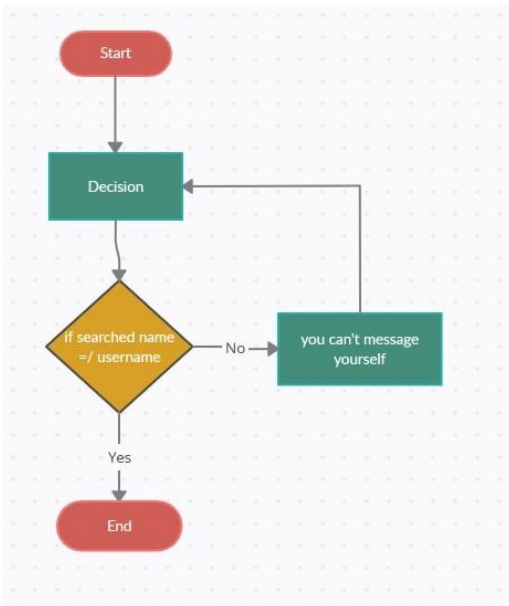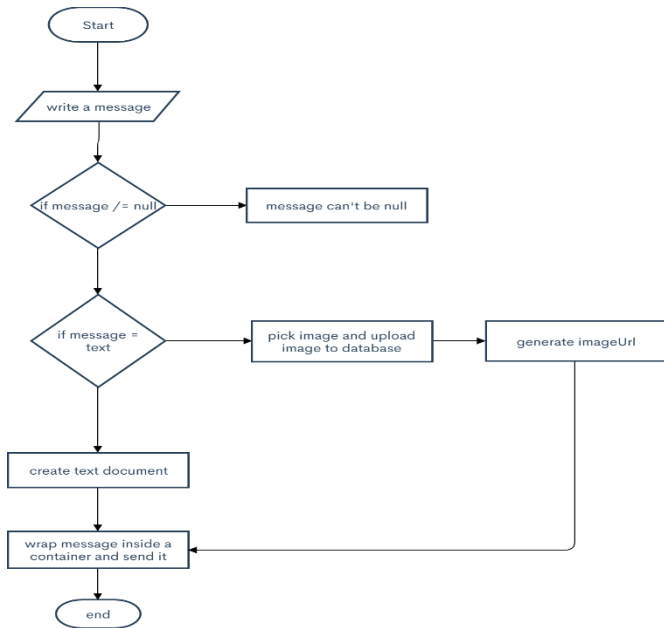
Fig 1: You cannot message yourself

Fig 2: Chatscreen structure

VI. RESULTS

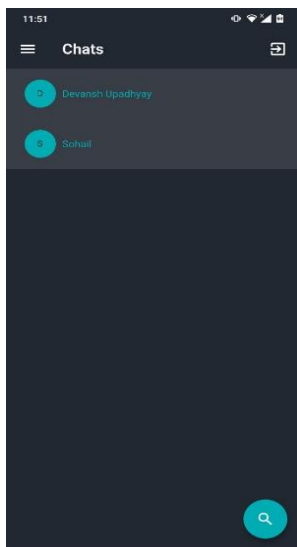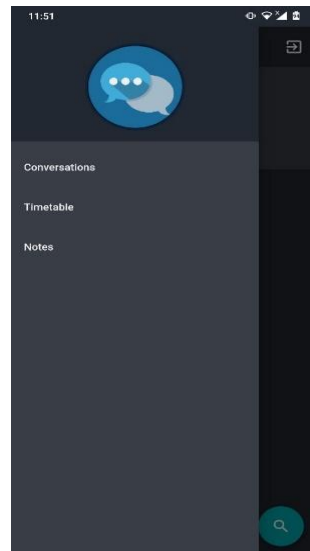These are the snapshots of the User Interface of the application:

Fig 3. Chat Menu

Fig 4. App Drawer

VII. CONCLUSION AND FUTURE WORK

There are many times that when a student has to submit a assignment and wants to ask a specific student about it but cannot find his/her mobile number using CollegeNotes the operator can search the person by their name and message them, Just like this there are many scenarios where CollegeNotes can really be helpful. The User Interface is very minimal and even a novice can use it, along with the simple UI using flutter makes it smoother compared to other applications and very responsive. When the user send an image it is stored in Firebase Storage, it uses google cloud

making uploading images very fast. The Firebase database used will keep your credentials private and you can't lose the messages/data you sent either.

There is also possibility of enhancing user inteface along the way based on user experience and the app can be used by all kinds of students making the scope of this application larger.

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