MULTILINGUAL CHAT APP.

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Abstract—

As part of the SDPD course project we have taken up the project of developing an Android application having the following functionality.

Users after installing our application shall be able to login with their email address and make a selection of their preferred language.One person can create a chat room and invite his friends to join in.Now they all shall be able to chat in their respective languages.

Keywords—Firebase, Android Studio, NodeJS, JavaScript, Google Cloud

Introduction

There are hundreds of languages being spoken by large number of people, India itself has 22 recognized languages. This makes difficult for people sometimes to communicate when they don't know a common language. Hence as a small step toward eliminating this problem we have developed a chat application. Suppose a bunch of people want to communicate with each other, all of them can you our app to send messages through their speech in their comfortable language, and receive messages back from others in their chat room in their preferred language.

Module 1

Development of Android Chat Application:

We started off with creating a basic chat application with a global chat room, and a simple chat functionality without translation. In the process we designed many activity pages for Login, Main chat activity, Creating chat rooms etc. Then we linked these pages and their widgets with our java code to work as a small primitive chat application. In the chat activity there's a drop-down menu with which selection of languages can be made, and request for creating chat rooms and signing out can also be made.

Module 2

Adding Database to the app:

It was important and logical that some memory component should also be added to the application. Since messages once sent by the users should be preserved. Thus we need to add a database to store the messages. We used the Fire base by Google to host a database on line on the cloud so it could act as a online server for our app. We created a logical database structure to fill in all messages, coming simultaneously, across different chat rooms, from different users, in different languages. After designing this structure, we Started writing a javascript code to receive messages from the app and store it in the designated way. And retrieving the messages in the correct way.

Module 3

Translation to various languages:

In the same JavaScript code, we wrote code for sending requests to google cloud translate along with required language code, and receive the

translated text. For this we needed to Create and account in Google cloud api. And use the free welcome service and opt for the google translate api. Thus the translation of the languages was being done for all the supported languages (English, French, Spanish, Tamil, Telugu, Hindi, Malayalam, Gujarati).

Module 4

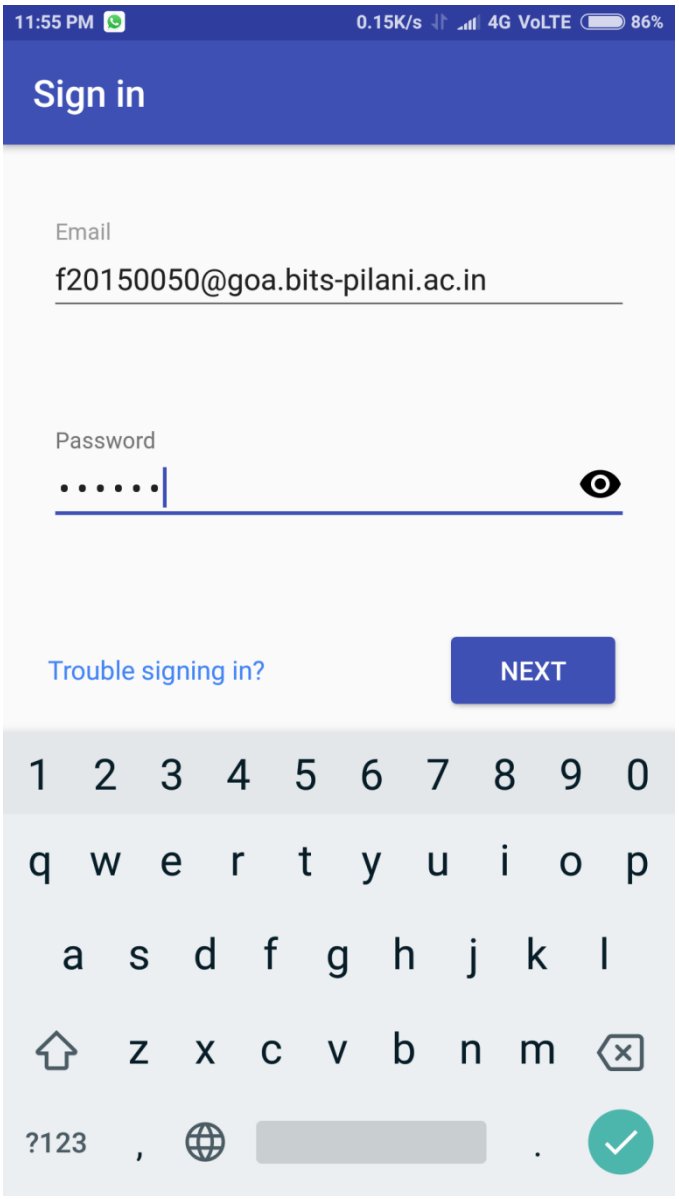
Authentication and Registration:

The facility provided by firebase was used to store user credentials data, including a username and password. The new users may register using their email address and select a username and password.

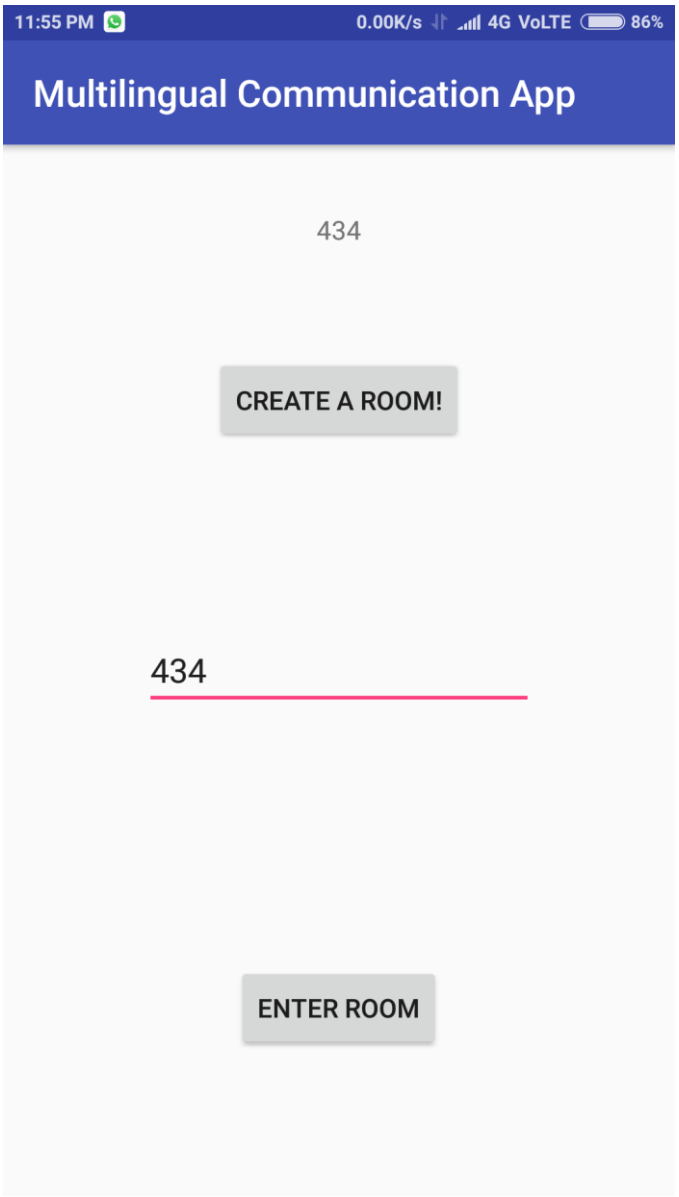
Module 5

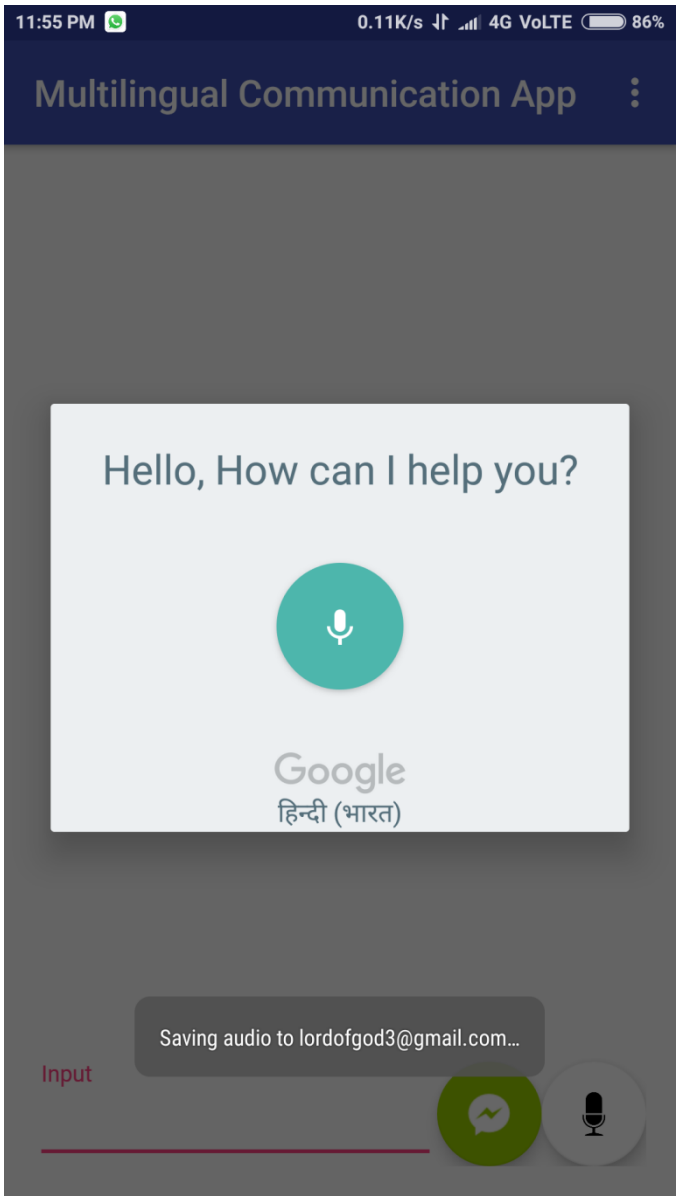
Speech to Text input:

The user needs to be free to give message input in his own language. Thus we added an option for Speech to text input in their own language. We modified own Chat app to accept speech input and use Google speech to text feature to get the text.

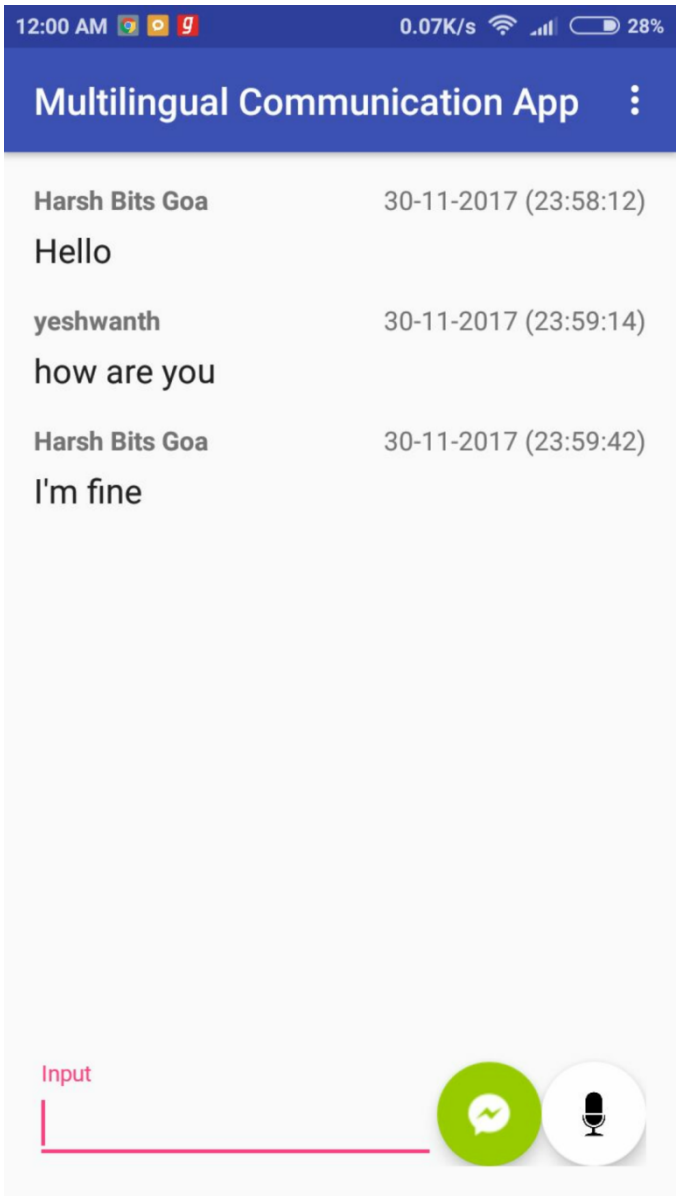



11:55 PM
0.00K/s
4G VoLTE
86%
Multilingual Con
Sreejith
hello how are you
Sreejith
Hello
Create Room
English
हिंदी
ગુજરાતી
français
Español
తెలుగు
தமிழ்
മലയാളം
Sign out
Input


11:55 PM
0.00K/s
4G VoLTE
86%
Multilingual Communication App
434
CREATE A ROOM!
434
ENTER ROOM


11:55 PM
0.11K/s 4G VoLTE 86%
Multilingual Communication App
Hello, How can I help you?
Google
हिन्दी (भारत)
Saving audio to lordofgod3@gmail.com...
Input


11:59 PM
0.00K/s VoLTE 85%
Multilingual Communication App
Harsh Bits Goa
30-11-2017 (23:58:12)
नमस्ते
yeshwanth
30-11-2017 (23:59:14)
क्या हाल है
Harsh Bits Goa
30-11-2017 (23:59:42)
मैं ठीक हूं
Input



List of Softwares used:

- Android Studio
- Firebase
- Google Cloud Translate
- Javascript, Java, NodeJS

Learning Outcomes:

We have made ourselves familiar with software, technologies employed and built the application from scratch. We have developed confidence to build any android application from scratch.

Conclusion:

We have a fully running Multilingual Chat app developed for android phones. The future work includes improving UI, developing it for iOS version. We can also add phone number login to reach and retain huge target audience As this is an application oriented project we didn't refer to any research papers focusing on particular part of the game.

Future possibilities of the project:

More functionality can be added to the app to make it as a language trainer. Text to speech feature can also be included. The frequency and pitch of the sender can be used to make the text to speech announcement more lifelike. Ads component can be integrated and we are planning to make the app public for usage.

Acknowledgement:

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