IOT PROJECT

SOUNDS GOOD

Presented By

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Summary

At certain age-old people need to be taken care of. They need 24*7 attention. If a person is unable to pay attention to the old-people's activities it causes in severe death and life-threatening issues, when we are not present in their need and unable to take care of the old people, there comes the need of our application. Our application provides a recording feature where it filters the data respecting the privacy of the old lady and only sends some keywords like help, medicine, food, hungry, water and such important keywords are being sent when the old-person utters such words in a sentence, then the caretaker can immediately react without putting the old-person's health at risk, he can react and respond in the form of a message and we can save at least few people's life. We believe such an approach keeps the privacy and monitors them continuously and help the old-person to keep her safe and sound as well as it reduces the man power to monitor them.

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Introduction

In today's world, advancement in monitoring system and smart phones has been so rapid lately that monitoring of the old-lady medical conditions in a home has also taken pace to help the old-people to be healthy. Monitoring the old-lady, recording their voice and providing filtering based on those keywords can greatly enhance the old-lady and respected her privacy. Lately, most of the analysis has been done using the camera sensors of smartphone devices since most of the people already own smartphone built with wide varieties of camera. Similarly, in this project, we have used voice, messaging, speech to text to monitor the conditions and give them the proper help. We have implemented speech-to-text to filter the data and send it and we have designed an android application to interaction with the old-lady and the caretaker.

1.1 Factors Contributing to Help

a) When they need help and unable to call someone.

b) Forgot to take medicines on time.

c) When there is a fall due to slip.

d) Hungry

e) Emergency situation

1.2 Factors used in Analysis

a) When old-lady utters key words

b) Automatic messaging

c) Interface used to interact with the Caretaker

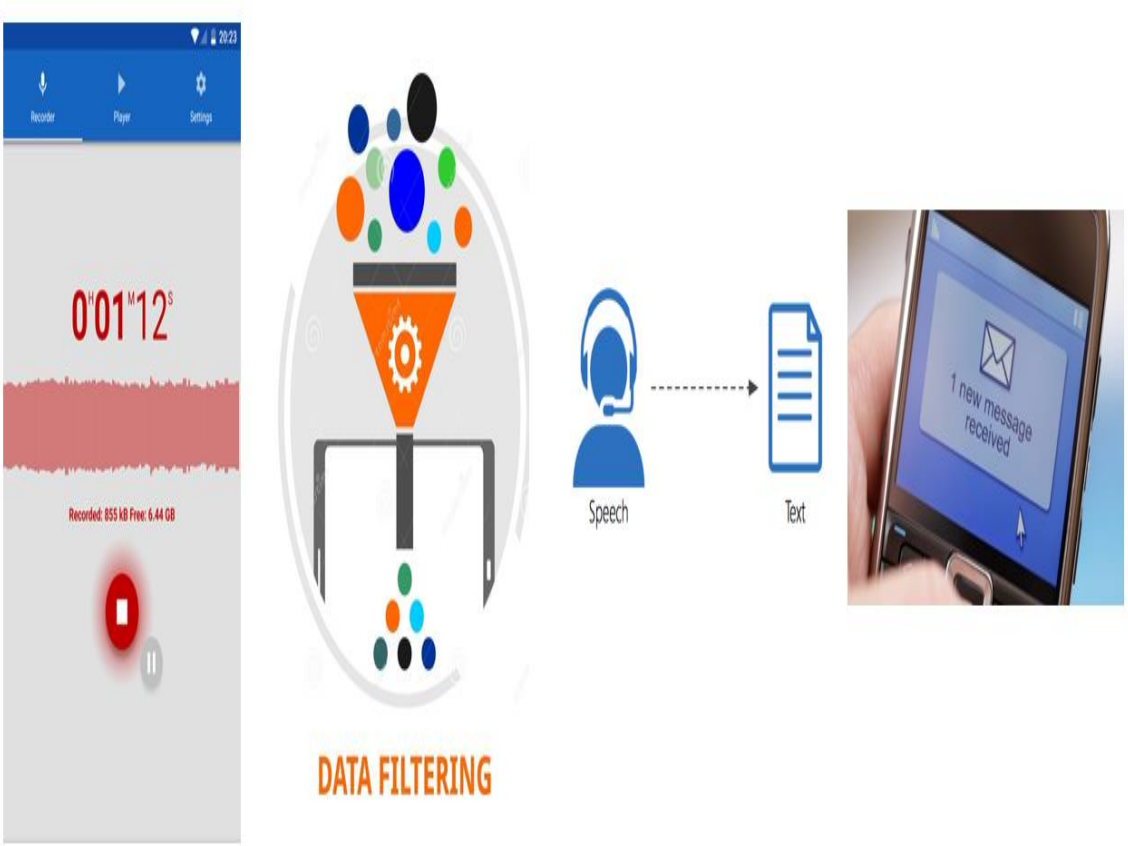
d)Response to old-lady automatic messages

e) Messages are sent in an app

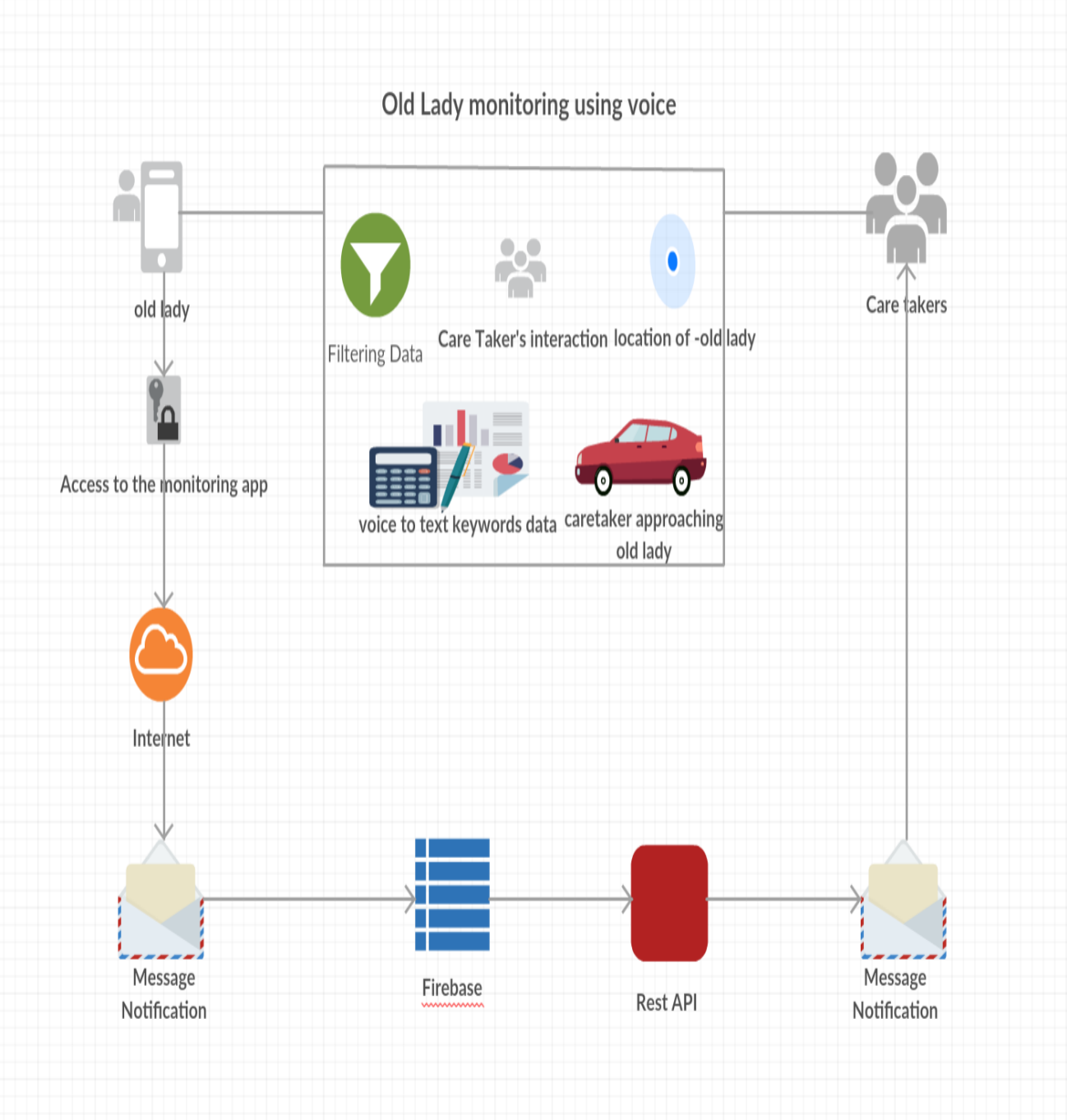
Methodology

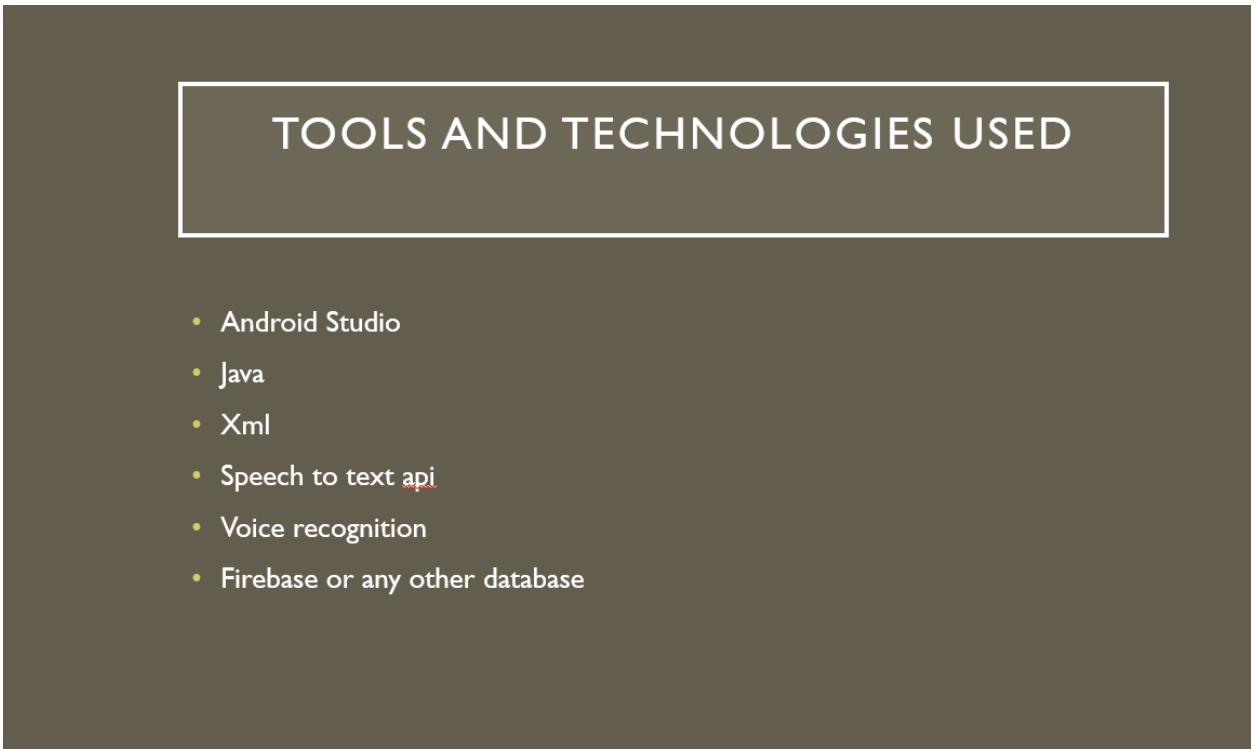
- Voice: I have collected the voice of the old-lady in the form of the recording voice and stored it only when if she says the keywords. Otherwise the recorded voice is being deleted from the database.
- Speech to text: To convert the speech to text I have used the library which is already installed in the android studio.
- Message: The automatic message is being sent if the old- lady utters the keywords help and some other main keywords which can be added later depending on the old-lady's comfort.

The flow of the project is being shown in the figure below



The architectural diagram is as follows





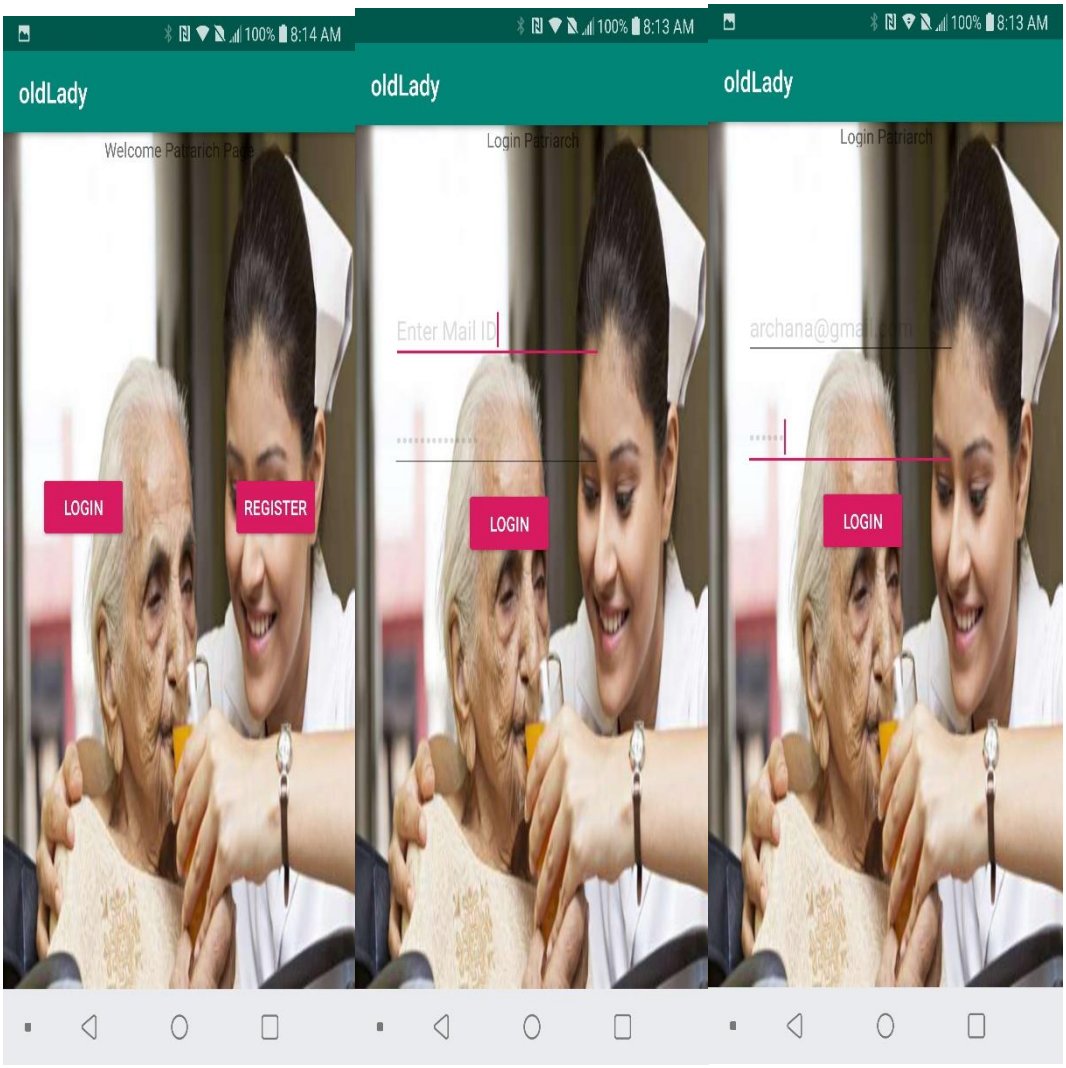
3.Project Deployment

3.1 User Authentication:

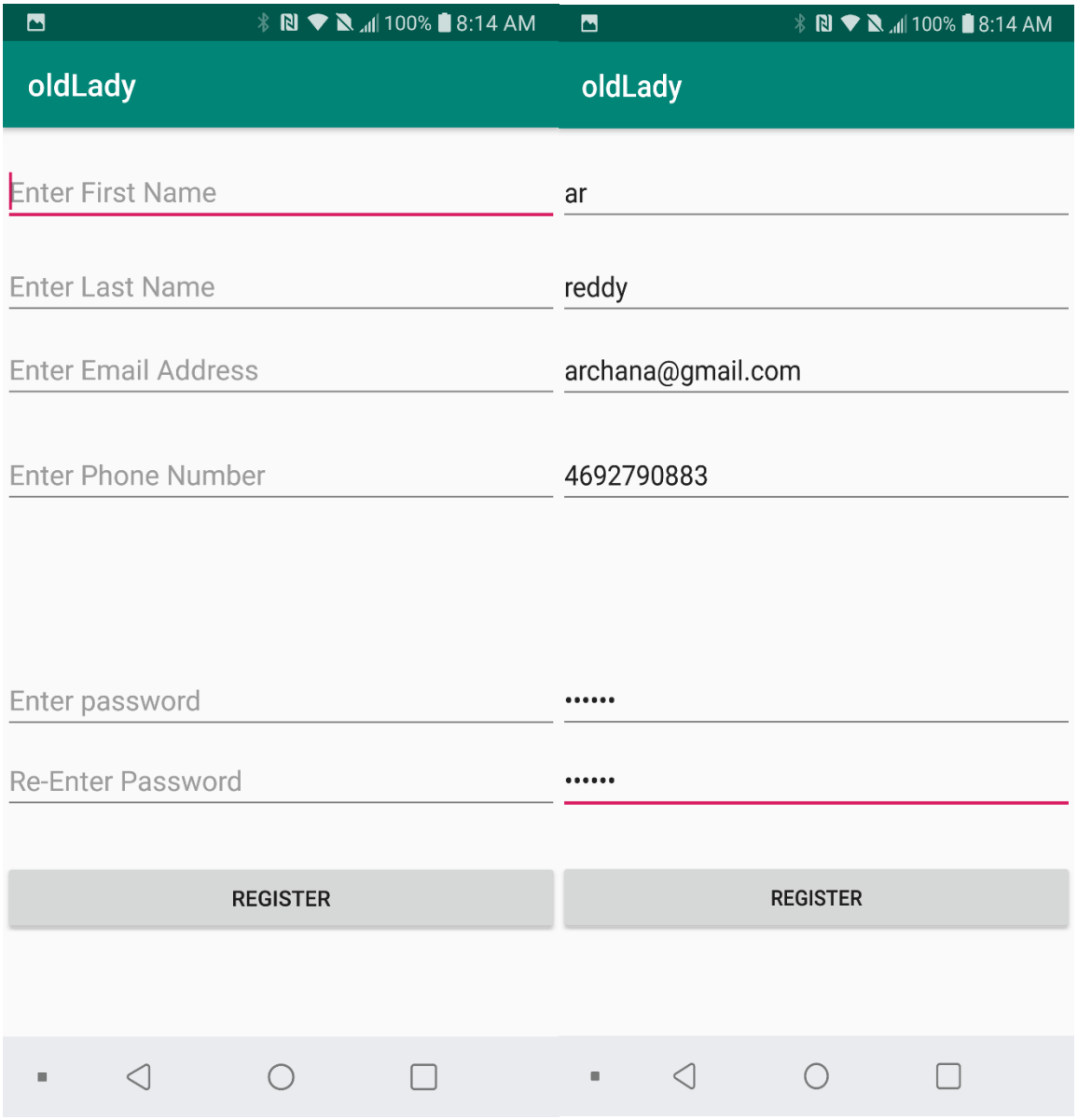
- Authentication has been implemented using Google Firebase API.
- Old-people are required to register an account.
- Old-people's Monitoring History are stores in the firebase such that they will be kept in track by the caretaker.

3.2 Home Page:

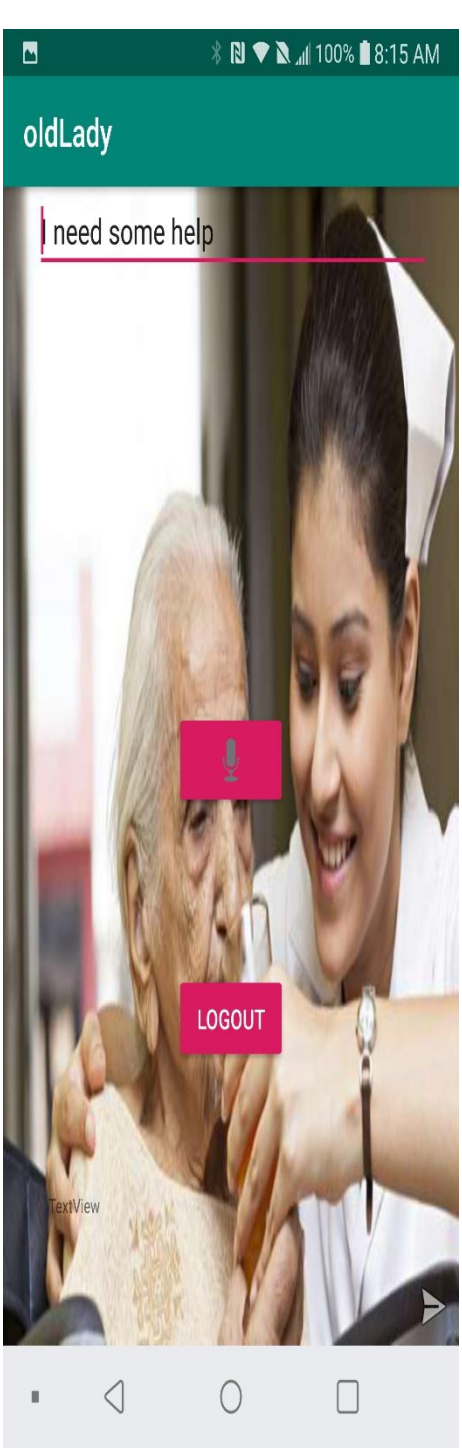
- The Log in Page of old person

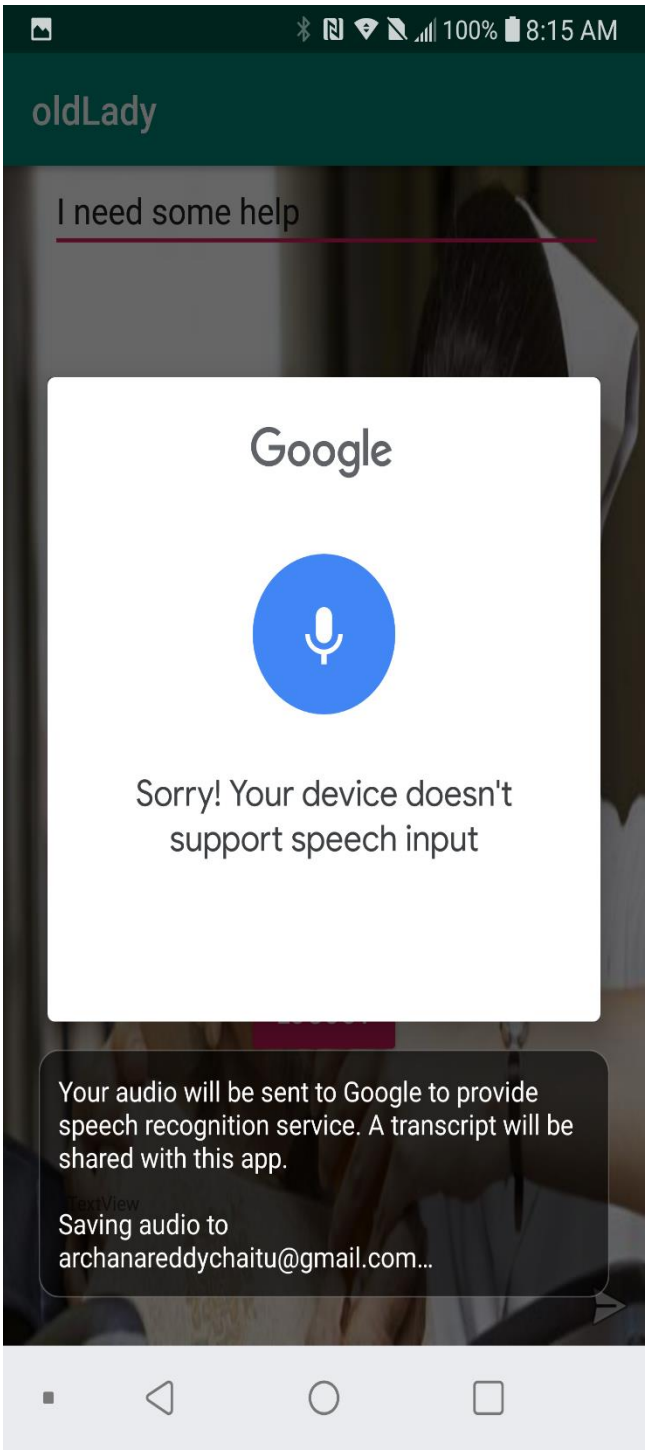


- Register Page of the Old Person

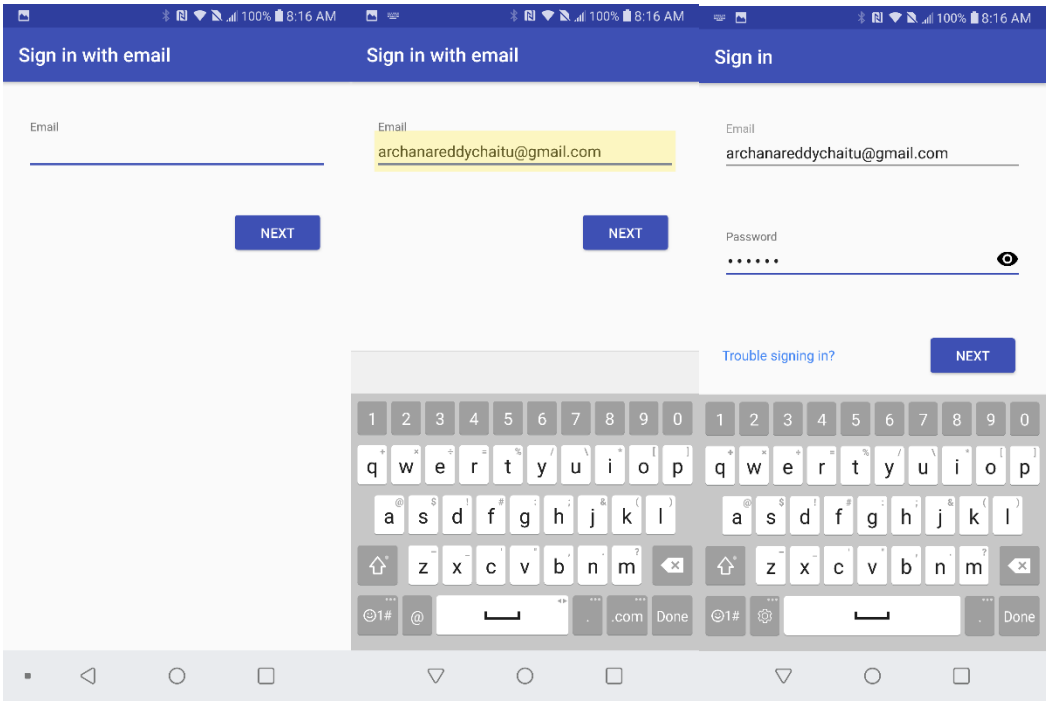


- Home Page of the Old Person

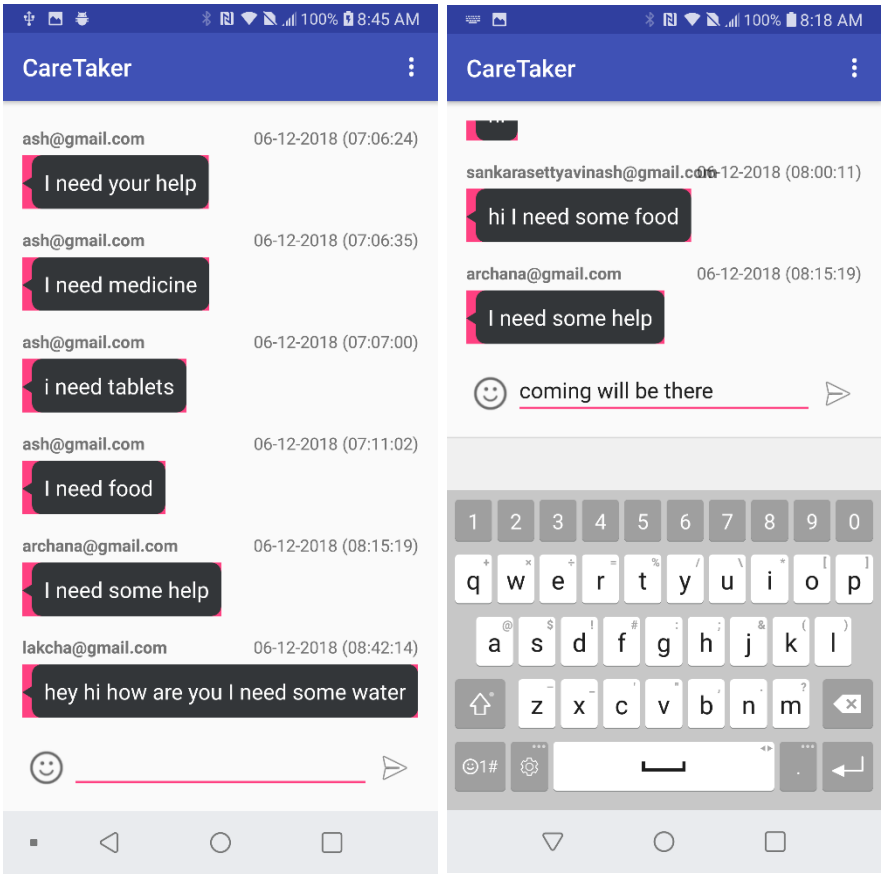




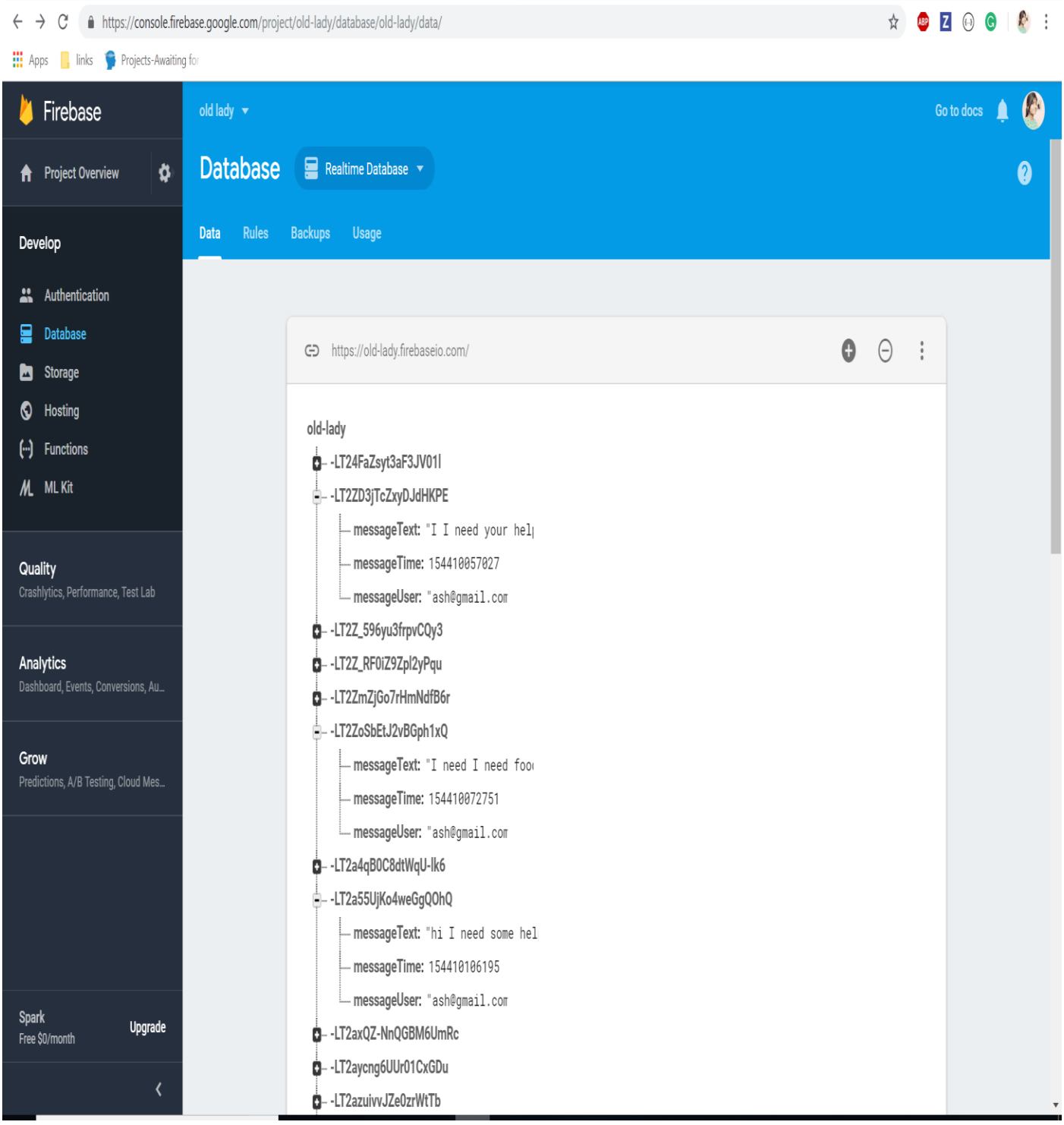
- Register and login of Care-Taker



- Messages log in Caretaker Application



- Storage in Database



4.Challenges

- **Analysis**
  The analysis of filtering of the data is very difficult as lots amount of data is being processed and the device need to be able to record everything without missing a word.
- **Battery Life of the android device**
  The app works only if the device is online and the battery should be constantly charged, and the android device should be online.

5. Future Enhancement

- We need to use microwaves detections sensors, if the old person forgot to turn off the microwave, the app detects that the microwave is on and helps us to keep from danger.
- We need to train the old-person's voice so that the speech to text conversion would be done easily as the old person's voice will be little shaky and unclear.

6. Conclusion

These days we have motion sensors and camera sensors which have made a quiet good progress but respecting the privacy the voice can be used to track someone's motions and we will be able to help them using the voice. This is a new approach if developed will have a very large scope and will be helpful for assisting the old-people.

7. Code

Coding was done on Android Studio using Java Programming language and can be found on the following link on GitHub.

https://github.com/ArchanaBasani/IotProject

8.References

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