IT351: Human Computer Interaction
Lab Assignment 4
Personalised Voice Assistant

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Objective:

1. To understand the speech to text and text to speech.
2. To understand the android app development using MIT app inventor.
3. To design and develop the HCI applications using the guidelines.

The following guidelines have been applied in the application:

1. **Strive for Consistency**

    A consistent central justification has been followed throughout the application.

2. **Cater to Universal Usability.**

    Speak keyword has been used which can be interpreted as a voice command by the user.

3. **Offer Informative feedback.**

    Provides feedback in case of errors.

4. **Prevent Errors.**

    Prevents errors by providing feedback and leniency to users.

5. **Permit easy reversal of actions.**

    Actions can be reversed by recording the voice command.

6. **Support internal locus of control.**

    The user can control the voice and also summon speech with customised texts.

7. **Reduce short term memory load.**

    Doesn't require the user to remember anything.

8. **Simplify task structure.**

    The application is simple to use and in terms of visuals and has a minimalistic design.

9. **Documentation and Help.**

    Provides a Help button to know about the voice assistant.

The application has 17 voice commands with 10 questions, 6 normal conversational voice commands and 1 action to open the camera. Unknown questions are redirected to the browser.
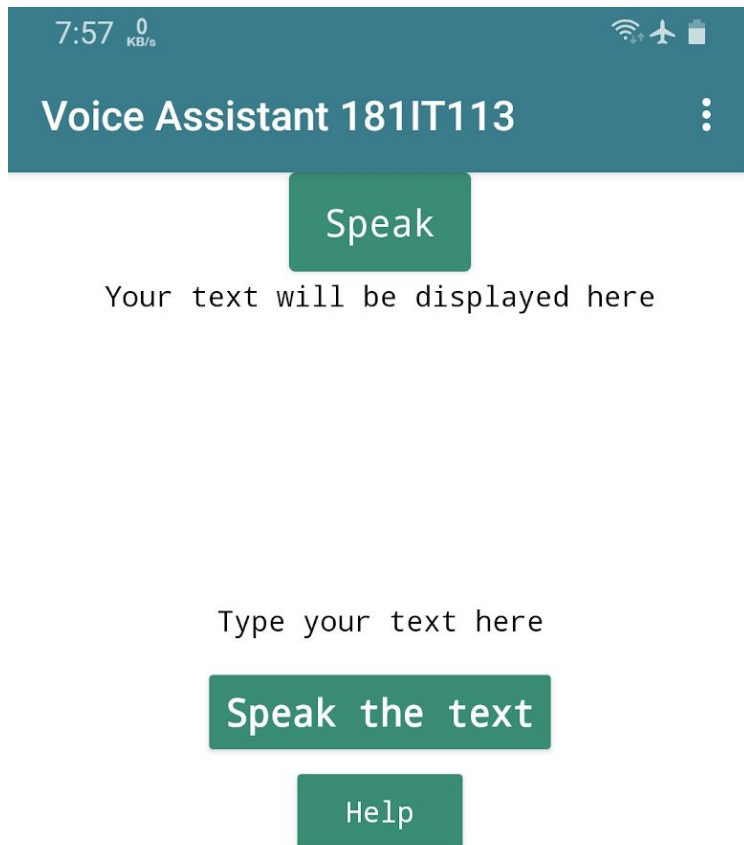
Fig 1. Home Screen

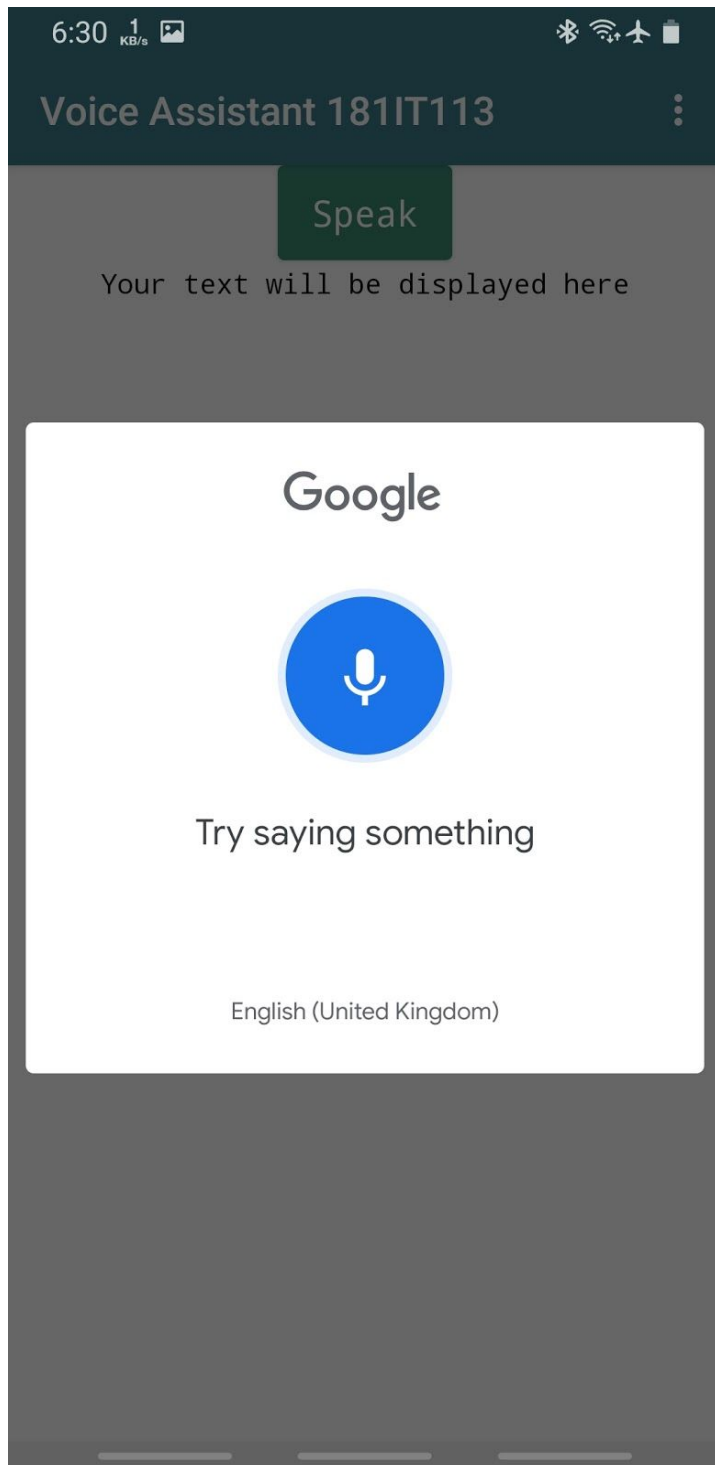There is an option for Speech to Text and Text to Speech.

Fig 2. Voice Assistant

Takes Voice commands and converts them into text and also answers the questions.

7:57 KB/s

Voice Assistant 181IT113 ⋮

Speak

what is corona

Corona is a type of virus. A newly
identified coronavirus, SARS-CoV-2, has
caused a worldwide pandemic of respiratory
illness, called COVID-19.

Speak the text

Help

Fig 3. First answer

The voice assistant takes the question of what is corona and answers it.
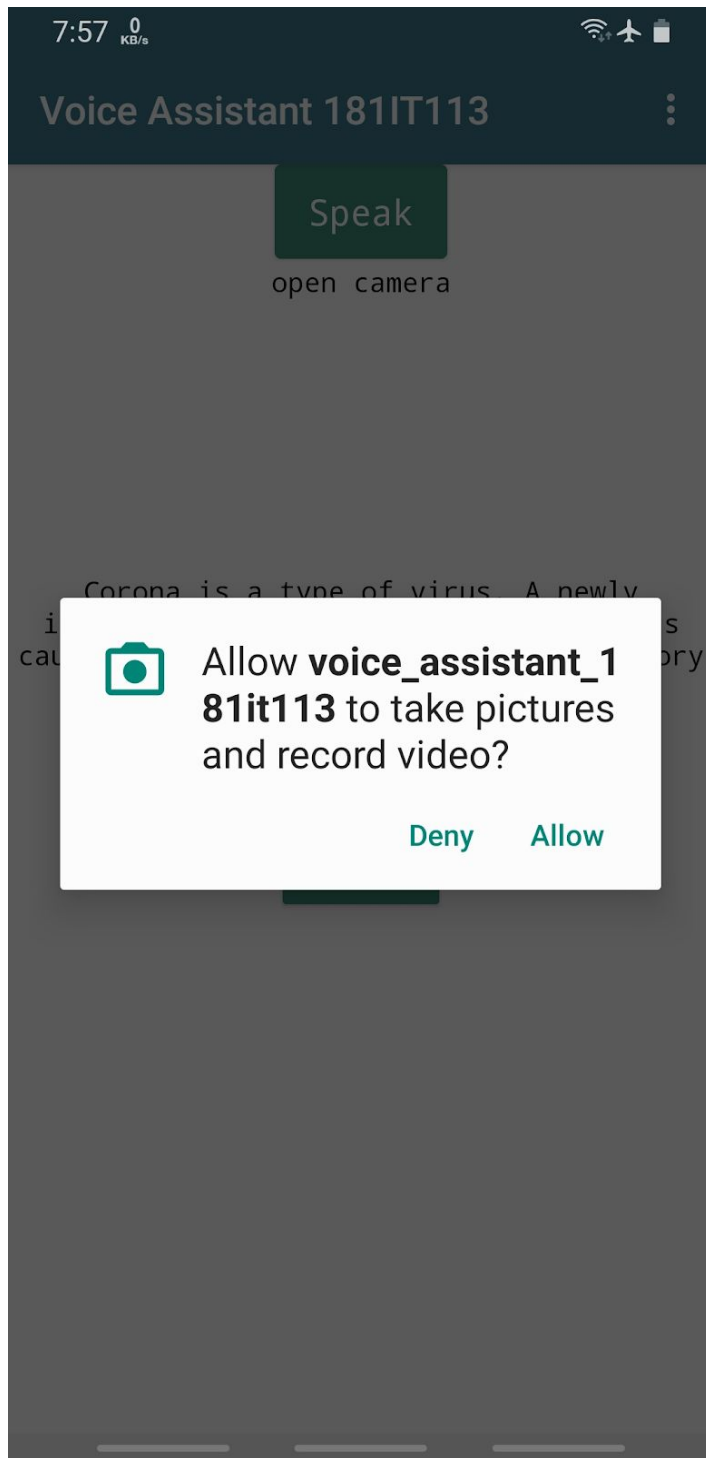
Fig 4. Opens camera

The voice command camera opens the camera.
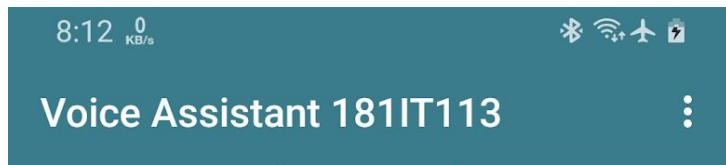
Fig 5. Text to Speech

The typed text is converted to speech.

Fig 6. Casual questions
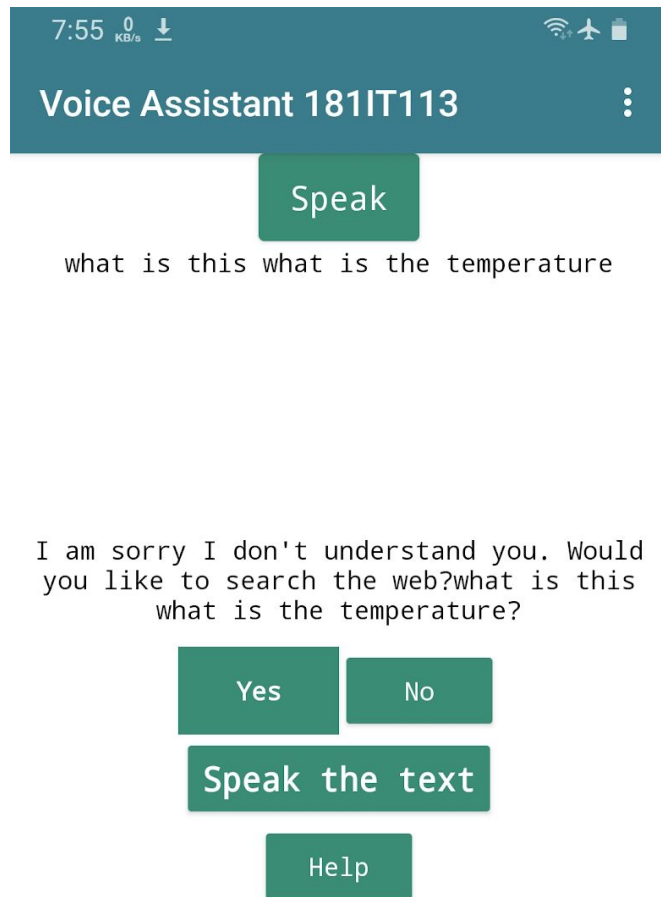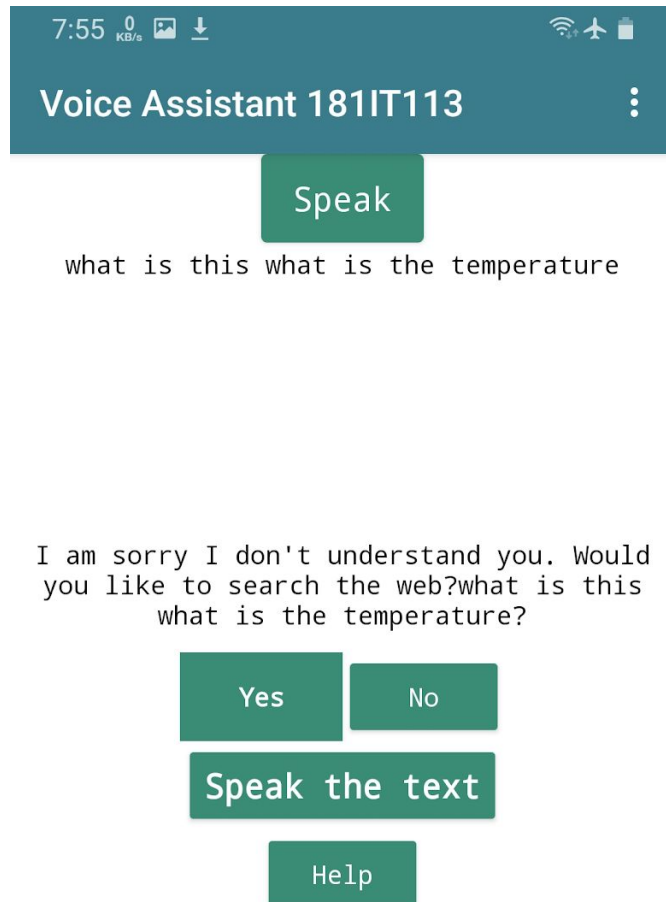
The voice assistant also answers some casual questions.

Fig 7. Unknown voice command

The voice assistant directs to the internet in case of unknown commands.

Fig 8. Help button

This provides documentation of the voice assistant application.