Voice-to-Text Application

The primary objective of this application is to convert speech into text using Google's Speech Recognizer intent. This application is supported for devices with android version 5.0 and above.

Overview:

Speech recognition (SR) is the inter-disciplinary sub-field of computational linguistics which incorporates knowledge and research in the linguistics, computer science, and electrical engineering fields to develop methodologies and technologies that enables the recognition and translation of spoken language into text by computers and computerized devices such as those categorized as smart technologies and robotics. It is also known as "computer speech recognition", or just "speech to text" (STT).

Some SR systems use "training" (also called "enrollment") where an individual speaker reads text or isolated vocabulary into the system. The system analyzes the person's specific voice and uses it to fine-tune the recognition of that person's speech, resulting in increased accuracy.

Speech recognition applications include voice user interfaces such as voice dialing (e.g. "Call home"), call routing (e.g. "I would like to make a collect call"), search (e.g. find a podcast where particular words were spoken), simple data entry (e.g., entering a credit card number), preparation of structured documents (e.g. a radiology report), speech-to-text processing (e.g., word processors or emails), and aircraft (usually termed Direct Voice Input).

The term *voice recognition* or *speaker identification* refers to identifying the speaker, rather than what they are saying. Recognizing the speaker can simplify the task of translating speech in systems that have been trained on a specific person's voice or it can be used to authenticate or verify the identity of a speaker as part of a security process.

Features of Speech-to-Text app:

- Translates voice to text
- Provides the user the ability to scroll down to the bottom if the speech is long enough to exceed the display size.
- An alert dialog pops up if a user accidentally clicks on the back button.

Recognizer Intent:

The Recognizer Intent provides essential constants for supporting speech recognition. Few of them are:

- `ACTION_RECOGNIZE_SPEECH`

  Starts an activity that will prompt the user for speech and send it through a speech recognizer

- `EXTRA_LANGUAGE_MODEL`

  Informs the recognizer which speech model to prefer when performing `ACTION_RECOGNIZE_SPEECH`

- `EXTRA_PROMPT`

  Optional text prompt to show to the user when asking them to speak.

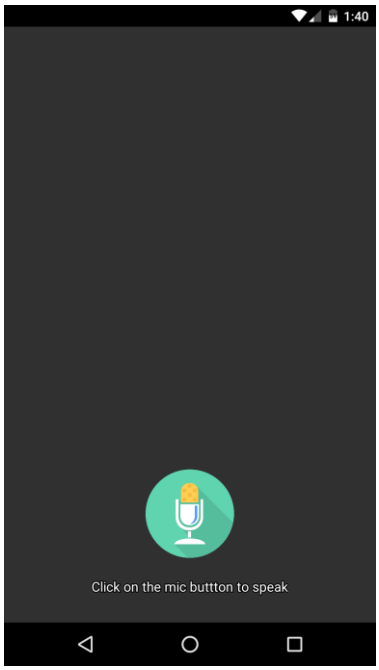
- `EXTRA_RESULTS`

  An ArrayList<String> of the recognition results when performing `ACTION_RECOGNIZE_SPEECH`.

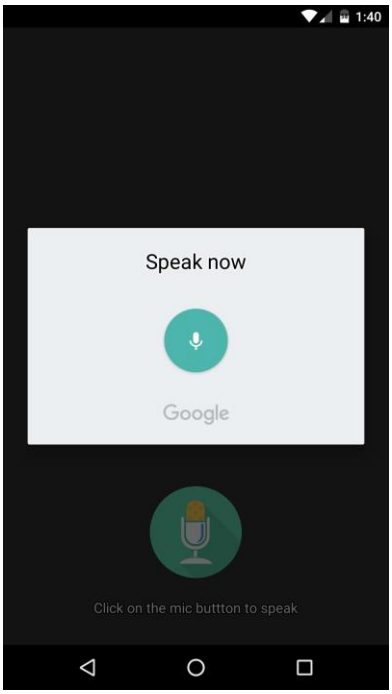
Screenshots:

Splash Screen

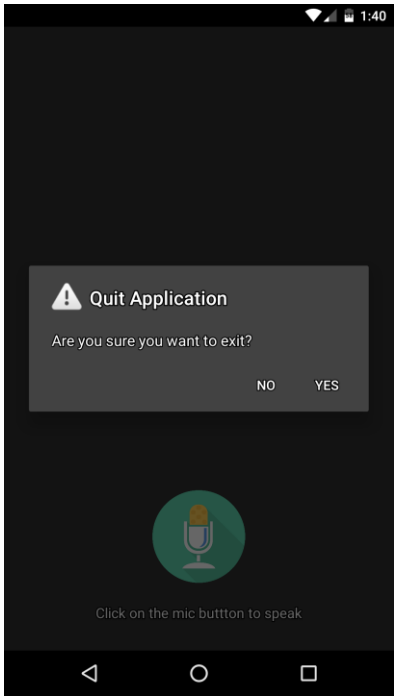
Main Activity



Speech Recognizer intent



Exit Application



Supported Device:

Any cell phone or tablet that runs on android 5.0 and above.

References:

[1] Wikipedia, the free encyclopedia. Speech Recognition. Last modified on 12 July 2016. https://en.wikipedia.org/wiki/Speech_recognition.

[2] Developer.Android.com. RecognizerIntent. https://developer.android.com/reference/android/speech/RecognizerIntent.html