

# **Implementing Speech-to-text Technologies for on-the-go CRM**

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## **Abstract**

SuiteCRM is an open-source customer relationship management (CRM) tool built as a fork of SugarCRM. The software is intended to allow users to track business critical information and store the data on a database that is accessible to multiple personnel across an organisation. A typical use-case of the software would be accessing a customer account to record notes on a meeting that had been attended. This information is then stored and can be used or accessed at a later date. This is an advantageous piece of software for any business that is increasing its customer base and needs to keep up-to-date records of its customer's activities.

Whilst this software is undoubtedly beneficial within a business environment it has not adapted well to the ever evolving business world. This technology requires users to be connected to a laptop or desktop computer to input or retrieve data. In the past this was convenient, but in a day where most people have a smartphone the desktop method seems archaic and unrefined. Modern smartphones are pocket sized computers that are almost constantly connected to the web. The natural jump therefore is to enable sales professionals to have access to the CRM technology on their mobile devices.

This dissertation documents the development of an Android application that connects to SuiteCRM and is able to call CRUD (Create, read, update and delete) functions on data stored in the CRM database via a REST API. The application implements speech-to-text processing to navigate the UI (user-interface) and create the REST calls to the database. Implementing speech-to-text technologies is a primary focus of the project as it will allow end users to multi-task (travel) while accessing customer records.

The development of the application consisted of three main parts that presented various development challenges. The three components are; the speech-to-text processing, the Android SDK (Android Studio) and the REST API. The primary goal was to get these three components working harmoniously to provide a prototype that would allow the user to speak a set of relatively concrete (some slight prescribed flexibility) commands that the app would then turn into instructions that make the appropriate REST call to the database. After this problem was solved in a timely manner the project took a turn towards usability and end-user testing.

The project succeeded in its aim to harmonise the components, but then evolved into an exercise of refining the app so it was more easily navigable and user-friendly. The objectives for this project were constantly evolving, but the initial objectives for the project were met and this project has extended its initial plan and laid the way for future work in this area.