**Requirement Collection and Analysis**

**Project Title: Personal Assistant App**

**Student Name(s): Brendan Geary**

1. **Purpose**

The expectation for the applications is the creation of a personal assistant application for mobile devices that utilizes the device’s microphone along with speech-to-text and text-to-speech capabilities.

1. **Intended Audience**

Expected Stakeholders:

Users: The ones who will be interacting with the personal assistant application on a day-to-day basis

Google: The ones who will be enabling interactivity between apps as and their search engine with respect to their own guidelines

Android: The ones who will be enabling interactivity between apps as well as the phone’s own in-built applications within their own guidelines

1. **Intended Use**

The application will serve as a personal assistant AI capable of performing tasks asked by the user such as setting timers, alarms, reminders, ect. through the use of the Android device’s first party applications.

1. **User Stories**

| **User** | **User Acuities** | **Activities Related Features** |
| --- | --- | --- |
| User | Set an alarm | Assistant interfaces with the phone’s in-built alarm application |
| “” | Set a timer | Assistant interfaces with the phone’s in-built timer application |
| “” | Set a reminder | Assistant interfaces with the phone’s in-built calendar application |
| “” | Asks a question to be searched for online | Assistant searches the internet using the phone’s default browser and displays the results |
| “” | Open an application | Assistant searches the phone for the specified application and starts it |
| “” | Lower/Raise System Brightness | Assistant adjusts the system’s settings to increase/decrease the brightness of the device |
| “” | Set assistant’s name | Assistant changes the name it responds to in accordance with the given name |

1. **Acceptance criteria**

The accepted criteria for any action the user can take is for the assistant to be able to correctly interface with the required external programs in such a way to achieve the desired request made by the user.

1. **Scope**

The main goal of the project is the creation of an automated assistant that, using the users’ devices’ existing functionalities, is capable of streamlining the creation and execution of tasks that a user may want to do.

1. **Nonfunctional Requirements:**

* **Functional requirements:**
  + Security requirements:
    - Sensitive information must remain local to the user’s device
      * This could include search history, task log, etc.
    - Any sensitive information must be stored using a form of encryption
      * Applicable to autofill information used by internet applications
  + Practical requirements:
    - Able to manage user needs (timers, alarms, calendar, ect.) through standard first party apps on device
    - Ability to open and close applications on the user’s behalf when requested
    - Capable of adjusting certain system settings when asked
    - Able to utilize search engines on behalf of the user to accomplish tasks
  + Extra requirements:
    - Customization options for the application on a user-to-user level
      * Users can customize the assistant’s name
      * Users can customize their own name
      * Users can customize the voice of the assistant
      * Users can customize the application’s colors
* **Nonfunctional requirements:**
  + Security
    - Encryption standards such as SHA256 would be used to encrypt the user's private data.
    - Full transparency would be available for the user, allowing them full access to the type of information kept by the application.
  + Accessibility
    - By using Android permissions for folders, temporary storage for the application can be saved to a location wherein the user has full access to the contents.
  + Performance
    - Performance can be reasonably guaranteed thanks to the fact that Android applications are predominantly created using Java and therefore the device is already geared to running java applications
  + Reliability
    - Reliability can be assured through the use of accredited API’s from big name tech companies, ensuring that the standards of performance fall in line with industry standards.

1. **Assumptions and Dependencies**

This software depends on Android’s default applications to be activated on the users’ phone, otherwise the application would not be able to function as the middleman between the user and the desired task. The same can be said with Google’s functionalities within the assistant such as web search, mapping, etc.

1. **Definitions and Acronyms**

AI: Artificial Intelligence

API: Application Programming Interface