TalkBox Requirements Document

Requirements:

1. Create a configuration app and simulator that can be used with a TalkBox device to help anybody who has a form of auditory or speech disorder communicate and convey intended messages to others.

2. The configuration app should be able to communicate with a TalkBox device and a talkbox device simulator that can simulate the functionality of the TalkBox.

3. The configuration app should allow users to change options easily with an easy to navigate GUI, the configuration will respond to all user needs and be as user friendly as possible.

4. The device can use several buttons that the user can press in order to play pre-recorded audio files, as well as be able to record audio files that can be saved and used with a TalkBox button.
   - In order to provide customizability, and adaptability depending on different users.

5. The configuration app should be able to allow for numerous specific options for the buttons and allow users to change recorded audio files on each button.
   - Avoids rigidness of configuration and allows users to change buttons that were already set without the needs of restarting the configuration.

6. The configuration app should also allow the user to change the images on the simulator, to better simulate the functionality of a real TalkBox. The configuration app should also allow the user to change the sounds played on the simulator. The simulator should play the sounds selected by the user in order to simulate the talk box.
   - Enhances the customizability and the usage of the TalkBox, and reduces and constraints on the user

7. The configuration app should be stored in a USB flash drive that can be used with an actual TalkBox device as well as simulated with the simulator.
   - This is essential in order to be able to use the application on different computing systems. Allows any computer to run and configure the TalkBox through a portable electronic file.

8. The TalkBox app should log any inputs made by the user while they are using the Talk Box app, the configuration app, or the simulation app.

9. Create a logger app that displays the most important information from the log and summarizes it.
   - This allows developers to see which features are being used most commonly by the users, and which features are not being used. This allows for developers to develop additional features based on the users use case.

Acceptance Test Cases:

Testing second requirement:

- Test if simulator works and can communicate with the configuration app, which is performed by configuring different instances and seeing if the simulator matches the intended TalkBox.
- Test if the configuration app can communicate with a TalkBox.

Testing Third requirement:

- Test if it is possible to navigate GUI, by checking the responsiveness of the available buttons.
- Test if GUI creation works.

Testing Fourth requirement:

- Check if the uploaded images/sounds are the same as those present in the simulator
- Check if a user's chosen files are of appropriate format, by not allowing the user to upload an in valid format.
- Check if Default sound/image files are on the disk.

Testing Fifth requirement:

- Making sure that the number of buttons on the simulator is the same as the number of buttons chosen by the user.

Testing Sixth requirement:

- Images selected by the user should appear on the buttons on the simulator. This can be checked by implementing a "Preview Image" which the user can use to look at the uploaded image.
- Sounds selected by the user should be played when the appropriate button is selected on the simulator and when the "Preview Sound" button is pressed.

Testing Seventh requirement:

- Settings selected on the configurator should result in appropriate selections appearing on the simulator.

Testing Eighth requirement
- The logger app outputs appropriate information for both simulation logging and configuration logging.