

Requirements Document for the TalkBox

Purpose: TalkBox is a speech generating device that aids an individual who are unable to speak, to communicate. The purpose of the TalkBox project to help configure an individual's TalkBox device using two pieces of software: TalkBox Simulator and TalkBox Configuration Application.

Functional Requirements:

- The application will configure the user's TalkBox device.
- The application will allow the user to input the number of audio buttons they have on their TalkBox device
- The application will also allow the user to input the number of swap buttons and audio sets they require for their TalkBox device.
- The user will be able to load and save profiles they create in the configuration application.
- The user will be able to launch the simulator and the configuration from the Welcome window.
- From the Welcome window, the user will be able to record the audio for the buttons.
- The user will be able to run logging information from the Welcome window.
- When launched, the user will be able to view the number of buttons indicated previously in both the configuration application and simulator.
- The user will be able to load pictures and audio files already on their system to the application via drag and drop into the configurator.
- The user will be able to output audio when pressing a button.
- The user will be able to see an image associated with each button.
- The image loaded will be automatically resized to fit the button image.
- The user will be able to choose how long they want to record for.
- The user will be able to view all recordings in one folder.
- The user will be able to add more buttons.
- The user will be able to scroll through more buttons on the app.
- The user will be able to view loaded profiles in the configuration application.

Use Cases:

Loading pictures and audio into the configuration application

1. User launches the application and a Welcome screen appears.
2. User enters 6 in the text-field, for the number of audio buttons on their device.
3. User enters 4 in the text-field, for the number of swap buttons they want for their device.
4. User enters 5 in the text-field, for the number of audio-sets they want for their device.
5. User then presses “Configure” button and a configuration application appears.
6. The user will see 6 empty buttons on the left and 5 empty audio sets on the right, with the 1st audio set (audio set 1) highlighted.
7. Here the user can drag and drop picture files (jpg) and associated audio files (wav) to the 6 audio buttons, to configure audio set 1.
8. The user will be able to see the image on the button, if they choose to add a picture.
9. The button will be highlighted only if an audio file is placed on the button and by clicking on the audio button the user can hear the audio that was added to the button.
10. If the user wants to add another audio file or picture file the user can drag and drop the files change the
11. To configure the rest of the audio sets, the user can click on the audio set they want to configure and follow step 7 to configure the audio set that has been selected.

Result

Going back to the Welcome screen and clicking on “Launch Simulator” button, the user should be able to press on the button and be able hear the audio output they had loaded and see any images on the simulator they had configured. The swap buttons correspond to the order of audio sets, so Audio Set 1 will be in Swap 1 and Swap 2 will contain audio set 2, and so on. Since the user has 5 audio sets, the 5th audio set can be obtained by clicking on the Swap 4 twice. To get back to Audio Set 4, the user would have to click on Swap 4 again.

Adding recorded audio to the configuration application

1. User launches the application and a Welcome screen appears.
2. The user can record audio by clicking on “Record” button, which when pressed will take the user to the Record window.
3. On the Record window, the user can type in the name of the new audio file they want to create.
4. Pressing the “Record” button, the user can start speaking into their microphone to record their audio.
5. Pressing the “Stop” button will stop the recording and the folder contain the recording (TalkBoxRecording Folder) will open.
6. The user can listen to the audio.
7. The user can re-record, by keeping the same name of the file they had recorded, if they wish to do so.

Result

Following the steps of the previous user case (Loading pictures and audio into the configuration application), the user can add the recorded audio to the audio buttons, with the added benefit that the folder is already open.

Saving Profiles

1. User launches the application and a Welcome screen appears.
2. The user configures the TalkBox as explained in the previous two user cases.
3. When the user is satisfied with the configuration, the user can go to the Welcome window and click on the “Save” Button, which will they open to the Save window.
4. On the Save window, the user will be able to enter the name of the profile and pressing the “Save” button will save the current configuration.

Result

The user will be able to load the profile, if they press the “Load” button on the Welcome screen. It will open to a window where the user can choose saved profile and open the profile. The profile will be opened in the configuration application. The user will be able to make changes to the loaded profile. (Note: Pictures are not saved. The feature to add pictures was to only aid in the configuring process.)

Acceptance Test Cases:

- The user should be able to indicate the number of audio buttons, swap buttons and audio sets on the Welcome window.
- The user should be able to see the number of audio buttons and audio sets they had indicated in the beginning of the program, in the configuration application.
- The user should be able to configure the audio buttons for audio set selected.
- The user should be able to load pictures and audio files to audio buttons, according to the specified type of file (.jpg and .wav, respectively).
- The user should be able to see the number of audio buttons and swap button they had indicated in the beginning of the program, in the simulator.
- The user should be able to see the button picture after it is loaded, in both in the configuration application and in the simulator, if configured.
- The user should be able to record audio for buttons from the Welcome window.
- The user should be able to hear an audio when a button is pressed in the simulator and in the configuration application.
- The user should be able to swap through the audio sets created in the configuration app by using the swap buttons.
- The user should be able to load and save profiles created in the configuration application.
- When loading a profile, the profile should open in the configuration application, so the user can make changes.
- The user should be able to access and view the logging information from the Welcome window.