Software Requirements Documentation

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TalkBox App Version 1
Group 3

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1. Introduction

1.1 Purpose

The purpose of this document is to illustrate the functionality of the TalkBox application. In addition, an overview of use cases and acceptance test cases is covered.

1.2 Scope

The TalkBox application acts as a medium for users that are speech-impaired. Clients simulate speech via push buttons on a user interface. The user can filter through grouped phrases or words depending on the information they wish to convey. If the user requires words and phrases spanning across multiple groups, they can create a custom group, selecting the sounds they desire.

When the desired configuration is set, the user is able to launch a sound board. The sound board provides access to the selected configuration with named buttons corresponding to the word or phrase.

Moreover, caretakers of the individual can record sounds if the default options do not suffice. The recorded sounds can go to an already created group, or the words and phrases can be completely customized.

The current version of the application currently runs on personal computers. Future versions will feature use on a Raspberry Pi.

1.3 Users

The overall intended users of the TalkBox application are the speech-impaired, caretakers of the speech impaired or users who do not speak English as a second language and need a means to communicate.

1.4 Definitions

Term	Definition
Audio Set	A group of words and phrases will be referred to as an audio set
GUI	Graphical user interface
FR	Functional requirement
Class-1	Speech impaired user

Class-2	Relation to speech impaired user
Class-3	All other users in need of producing simulated words and phrases
.tbc	Extension for saved TalkBox configurations. Used interchangeably with an imported or exported instance of a configuration.

2. Functional Requirements

ID	Class	Description
FR-1	1,2,3	User has access to a GUI to display the sounds and provide interaction
FR-2	1,2,3	User can Import and export configurations
FR-3	1,2,3	User can sample audio before committing to an audio set
FR-4	2,3	User is able to record audio to be added to an audio set
FR-5	1,3	User is able to use the words and phrases to communicate
FR-6	1,2,3	Users is able to toggle through audio sets once a configuration is loaded
FR-7	2,3	User is able to create an audio set that is fully custom i.e. All recorded sounds only
FR-8	1,2,3	User can customize audio sets with both recorded and pre-loaded sounds
FR-9	1,2,3	User can clear a customized set in case of error and start over
FR-10	1,2,3	User can name their recorded files/buttons.
FR-11	1,2,3	User can reuse recorded audio on other configurations
FR-12	1,2,3	User can edit file names

3. Use Cases

Note: All use cases assume the application is running.

Case	1
Class	1
Title	Quick start
Description	User loads application and instantly loads a pre-loaded audio set without any modifications
Events	1.) User chooses an audio set from the drop down list 2.) User clicks on 'Start' 3.) User uses the buttons to play sounds
Alternative Event	1.) User imports a saved .tbc file 2.) User selects an audio set 3.) User clicks on 'Start' 4.) User uses the buttons to play sounds
Further details	N/A

Case	2
Class	1
Title	Customize Audio Set
Description	User wants to create a sound board via the union of audio sets
Events	1.) User chooses an audio set from the drop down list 2.) 'Create custom audio set' checkbox is clicked 3.) Mouse is used to select file names in list 4.) With a name highlighted, "select" button is pressed. 5.) 1-4 is repeated until the desired files are chosen 6.) 'Add set' button is clicked. 7.) User selects the added set from the drop down list and clicks the "start" button
Alternative Event	1.) User checks "Create Custom Audio Set" 2.) Steps 1-7 are repeated as above 3.) User clicks the "clear" button if they decide to abort customization.
Further details	Customized sets should be saved if user wants to reuse them.

Case	3
Class	1,2,3
Title	Removable sounds
Description	User does not want their talkbox to contain a sound
Events	1.) User selects an audio set from the drop down list 2.) User uses their mouse to highlight a specific sound file 3.) User selects the "remove" button 4.) User saves the modifications
Alternative Event	1.) Steps 1-4 are repeated from above, but the user does not save their selection after realizing they regret some changes.
Further details	The files cannot be restored after saving at this time. The user needs to start a new .tbc from scratch if it is altered in undesirable ways. Also, files are deleted from the talkbox but not the users system.

Case	4
Class	2,3
Title	Record Audio
Description	User wants custom audio via recording
Events	1.) User selects an audio set from the drop down list 2.) The 'Record New Sound' button is clicked 3.) User enters a name they want the sound to appear as 4.) User clicks record and then stop when done 5.) File is added to the audio set selected prior to recording 6.) User is satisfied and saves the configuration.
Alternative Event	1.) User clicks on the 'create custom audio set' check box. 2.) The 'Add set' button is clicked 3.) User accesses the empty set added to the drop down list.

	4.) User records audio files until the new set is filled to their satisfaction 5.) User saves the file.
Further details	Memory issue. Version 1 saves all recordings on the users system, even if never used. Editing issue. File names are not editable in Version 1.

Case	5
Class	1,2,3
Title	Toggle through sets
Description	User accesses unselected audio sets upon start-up
Events	1.) User selects desired audio set 2.) User clicks 'Start' 3.) User uses the swap buttons to access any audio sets they did not originally choose
Alternative Event	1.) User follows any of the customizable options or import of a .tb 2.) User selects their customized set and clicks 'Start' 3.) User saves their configuration if any configurations have been made 4.) User clicks on 'start'.
Further details	N/A

Case	6
Class	1, 3
Title	Communication
Description	User uses the Talkbox to communicate
Events	1.) User follows any start up case above to open a sound board 2.) User encounters a peer 3.) User uses the buttons to respond. 4.) User swaps through audio sets to get a desired phrase if their current audio set is lacking a specific word or phrase.
Alternative Event	1.) User follows the default event.

	2.) User discovers they require additional words or phrases via reflection of their interaxtion.
	3.) If class-1 user, user gets class-2 user to record audio.
	4.) If class-3 user that does not speak English, user gets class-2 user to record additional words and phrases.
	5.) If class-3 user that speaks English, user records audio
	6.) .tbc configurations are saved.
Further details	The user must have a personal computer/work station that outputs audio.

5.) Acceptance Tests: Version 1

The following table depicts the acceptance tests for version 1 of the Talkbox App.

Event	Expected Result	Pass/Fail
Select Audio drop down list is pressed	List of all audio sets shows	Pass
Audio set from the list is selected	All the audio files in that list show	Pass
Audio file is selected and then play button pressed	Audio file plays in order to sample the sound	Pass
Create Custom Audio Set checkbox is selected	Add set and select buttons are enabled	Pass
Audio file from an audio set is highlighted, create custom audio is set and select button is pressed	Audio file name appears in the text area	Pass
Audio file name in text area, "create custom audio set" selected and the "add set" button is pressed.	New audio set is made with all audio files in the text area added to it	Pass
No Audio Set selected at start-up	Start button disabled	Pass
Clear button enabled and pressed	Any text in the text area is cleared.	Pass
Record New Sound Button is pressed	Dialog opens to enter sound name and the option to then record	Pass

Dialog opened to enter sound name and the option to then record (recording) and record button pressed after entering name	Recorded audio is added to the current selected audio set with the given name.	Pass
Recorded sound is played	Recorded audio works and is not silent.	Pass
Imported .tbc	Audio sets loaded with imported configuration	Pass
Exported .tbc	Current configuration saved in a .tbc file	Pass
Start button pressed	Currently selected audio set loads on the talkbox simulator	Pass
Talkbox simulator open Swap button 1 pressed	Audio set 1 appears on simulator to be used	Pass
Talkbox simulator open Swap button 2 pressed	Audio set 2 appears on simulator to be used	Pass
Talkbox simulator open Swap button 2 pressed twice or more times	The audio sets toggle in order starting from set 2.	Pass
File is pressed Exit is pressed	Confirmation message to confirm exit is shown	Pass
Add set enabled. Add set button pressed with no files listed in the text area	Empty audio set added to the drop down list that can have recorded audio files added to it	Pass.

6.) Conclusion

The current functionality of TalkBox version 1 is fully listed. The user is able to play pre-loaded audio, record their own audio, swap audio sets and create custom sets.