

Requirements Document

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Requirements Document

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1.0 GENERAL INFORMATION

A. GENERAL INFORMATION

1.1 System Overview

Software Development Project, TalkBox Simulator, a piece of software that simulates the behavior of any TalkBox device. Has a user interface similar to that of the device. The number of buttons and their functionality is configurable. Is fully tested to behave as the hardware device.

1.2 System Requirement

In order to run this software, operating system should have Java Runtime Environment 1.8 (JRE-1.8)

1.3 Client Overview and General Requirements

The TalkBox device acts a way for user with speech impairments like lack of vocal cords, autism patients, patients with cognitive or motor dysfunction. The user can choose through a library of hundreds audio files that includes audio phrases, words, and songs, for people of all age groups. This device can also be used by kids as toys due to the easy of use, as well as people who do not speak English as their first language.

The user can also set desired audio sets allowing a vast amount of configurability depending on different users. The users can than save the configuration and port it to different device using an executable .jar file.

Also, users or caretakers can record custom audio and save it to an ever-expanding list of audio files. The users can than choose one of those files as a part of their configuration.

2.0 GETTING STARTED

B. GETTING STARTED

2.1 Setting up JRE 1.8

Type 'java -version' in Terminal/PowerShell to check JRE version. If no JRE available or version is lower than 1.8, download JRE from link below

<https://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html>

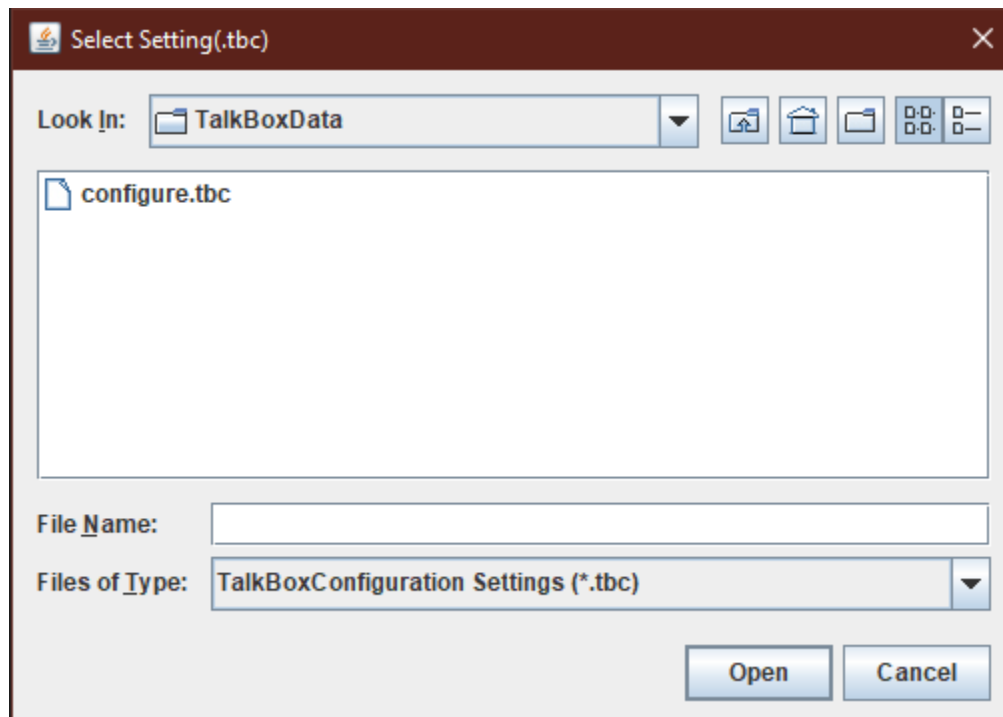
2.2 Download Software

Download and unzip 'EECS2311_group5-master' from link below

https://github.com/JacobJae/EECS2311_group5/archive/master.zip

2.3 Starting TalkBox.jar

Inside of 'EECS2311_group5-master' folder, go to 'TalkBoxV2/vM' and execute 'TalkBoxV2' jar file. Select 'configure.tbc' file inside of 'TalkBoxV2/TalkBoxData' which is default setting for new user.



3.0 TALKBOX SIMULATOR

C. TALKBOX SIMULATOR

3.1 Client Requirements

- A physical device integrated with an application using Java. The device must have buttons that when pressed provides a set audio output associated with that button.
- Allowing user to switch between multiple (possibly infinite) amounts of button sets, each with different audio outputs.
- User can stop the audio playback anytime during the playback.

3.2 System Working

- The top portion of software consist of audio buttons. When it's clicked, corresponding sound will play. If user want to make custom voice audio file, click 'Configure' button.
- 'SWAP' button sets the next set of audio buttons.
- 'STOP' button stops the audio play.

3.3 Client Use Case

The system has a typical use case by users with verbal deficiency like unable to speak from birth or by accident as well as clients with non-verbal deficiency like brain disorder, cognitive, sensory or motor.

This device can also be used as a toy for children due to the simplicity of operating this device.

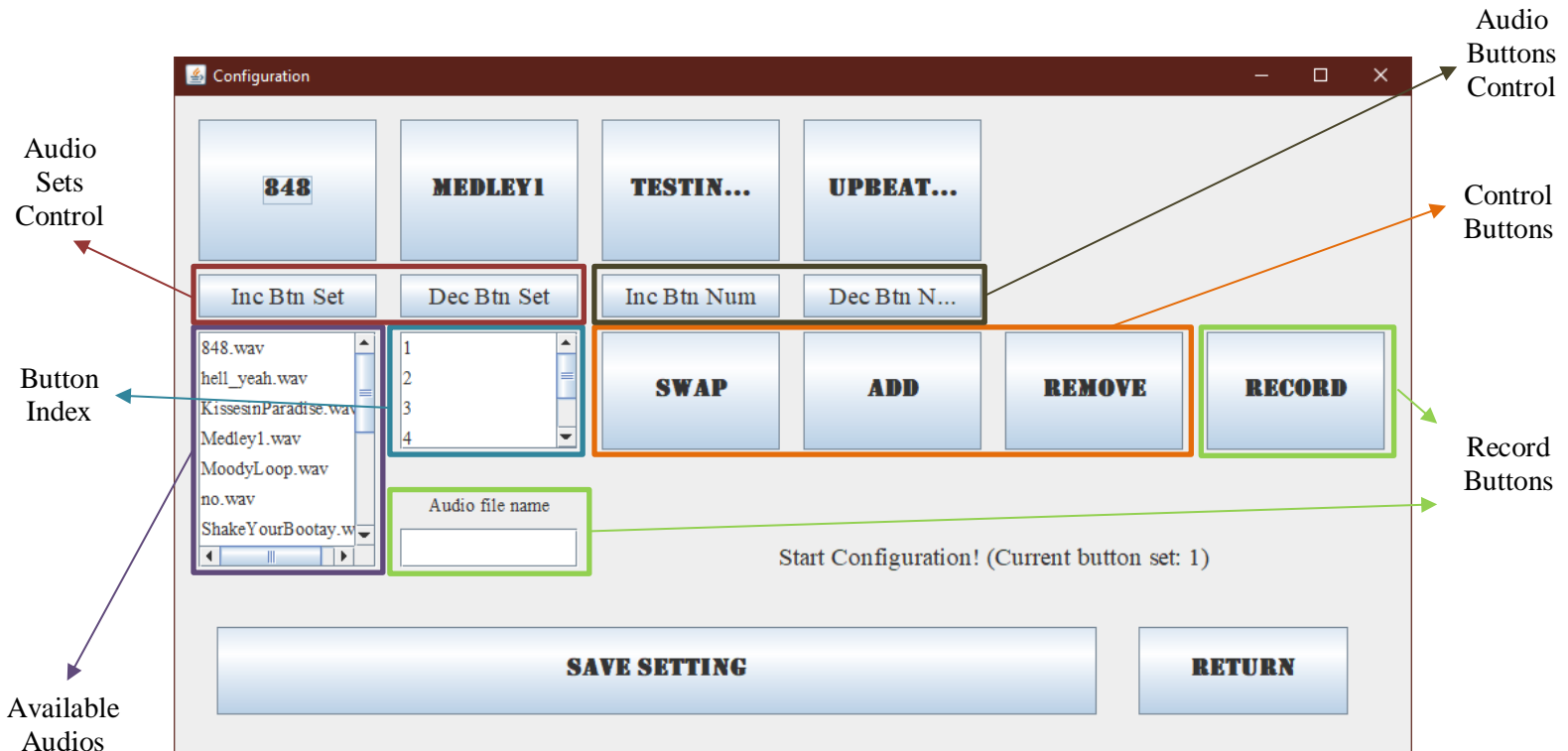
3.4 Acceptance Use Case: TalkBox App

Below are the Acceptance test cases for TalkBox application.

Event	Expected Result	Test: Pass/Fail
Start the Talkbox App	Prompts the user to select a configuration file from the system.	Pass
On selecting the .tbc configuration file	Loads every button: 1 st set of audio sets, control buttons, and configure and exit buttons	Pass
Audio button clicked	An audio output is provided depending on the button pressed	Pass
'STOP' button pressed	Audio playback is stopped if started	Pass
'SWAP' button pressed	Next set of audio set is loaded	Pass
'CONFIGURE' button pressed	Loads Configuration App and closes talkbox app.	Pass
'EXIT' button pressed	Closes talkbox (current) application	Pass

4.0 CONFIGURATION

D. CONFIGURATION



4.1 Client Requirements

- User can add/remove audio buttons from current sets.
- User can add/remove audio sets.
- User can record and save audio as per requirements.
- User can choose from hundreds of available audio files.

4.2 System Working

- Add and remove buttons allow user to add and remove selected buttons from current set.
- Inc./ Dec. btn Set allow user to change the current button set, and then change the buttons in that set.
- Record button allows user to record audio using device microphone if available. The user can also name and save the file using the text field provided.
- A library of pre-installed audio files has been given to the user as well as the ability to record more.

4.3 System Testing

System testing is done using Junit, an inbuilt functionality in Java. The features tested are listed below:

- Loading audio sets.
- Loading audio files.
- Adding and removing audio buttons from current set.
- Adding and removing audio sets form the configuration.
- Recording and Saving new audio files.
- Saving current configuration in .tbc file.

Please refer to the testing document for testing of above-mentioned features.

4.4 Acceptance Use Case

Below is the acceptance test case the Configuration Application.

Event	Expected Result	Test: Pass/Fail
Loading. .tbc configuration	Number of audio files, audio sets, current audio set and audio buttons are loaded in GUI	Pass
Saving .tbc configuration	Current configuration is saved to the file	Pass
'RECORD' button is pressed	User is prompted to name the record file	Pass
'RECORD' button is pressed after naming the file	Recording starts using the device microphone	Pass
'RECORD' button pressed again after previous event	Recording stops and the file is saved and listed in audio file list	Pass
'Inc Btn Set' button pressed	Increase the set of audio-sets by 1	Pass
'Dec Btn Set' button pressed	Decrease the set of audio-sets by 1	Pass
'Inc Btn Num' button pressed 'Dec Btn Num' button pressed	Increase/decrease respectively the number of audio button in current set by 1.	Pass
'SWAP' button pressed	Switch the audio set to next one.	Pass
'ADD' button pressed (Audio file selected, Button index not selected)	User prompted to select the button index.	Pass
'ADD' button pressed (Audio file selected, Button index selected)	Audio file added to the indexed button on the GUI	Pass
'REMOVE' button pressed (Audio Button not selected)	User prompted to select audio button first	Pass
'REMOVE' button pressed (Audio button selected)	Selected audio button removed from the current audio set.	Pass

'SAVE SETTINGS' button pressed	Current configuration is saved to the .tbc file.	Pass
'RETURN' button pressed	Current configuration is saved to the .tbc file, configuration app is closed and talkbox App is opened with the new updated settings.	Pass

5.0 APPENDIX

APPENDIX

This section describes and depicts all addition information about the system. Use screen prints as needed to depict examples of text under each heading.