<TALKBOX>

TEST PLAN

Version *<1.0>*
<02/24/2019>

VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	*Seohyun Jeong*	*<20/02/19>*	*Andrew Persaud*	*<21/02/19>*	Test Plan for midterm submission.

UP Template Version: 12/31/07

TABLE OF CONTENTS

1. INTRODUCTION

❖ 1.1 PURPOSE OF THE TEST PLAN DOCUMENT

the purpose of this document is to test cases and let other developers trace the possible bug. In addition, this document will discuss the unit test and GUI test and the test coverage.

2. UNIT TESTING

❖ 2.1 TEST RISKS/ ISSUE

This test is based on Junit test. each important class for our project is tested under Junit. Every class is intended to test, However, some GUI methods are tested manually and some backup classes are ignored.

❖ 2.2 ITEMS TO BE TESTED

Test Case	Short Description	Test Class
TalkBoxTest	Using Talkbox class, to test talkbox instance operation.	TalkBox
ControllerTest	Test each controller method to see that it does modify the actual model/view	Controller
MainFrameTest	Test every component on the main configurator window, then check coverage to see which methods weren't covered	MainFrame
MainFrameSimTest	Launch the simulator in coverage mode, then use every component to see which parts weren't used	MainFrameSim

❖ 2.3 TEST APPROACH

A tester class was used to automatically check certain components of each class. This was much more useful for the model and view classes; however, may aspects of the view classes had to be tested manually.

See (Tester.java) for exact junit tests.

TalkBoxTest

Tested each component of the model, by creating some lists and arrays and comparing them to those generated by the model (TalkBox).

Junit Test	implementation
getAudioList	Identical audio list generated, then compared to the audio list stored in Talkbox
getNumberOfAudioButtons	Number of buttons should be 5 for default audio sets
setAudioFilenames	Added a test audio set containing a unique audio file, and checked to see whether it existed in the model afterwards

- 3/3 junit test runs
- Coverage: 86.5%

ControllerTest

- Tested the important methods in the control class

Junit Test	Implementation
addAudioSet	Added an audio set, then compared the number of audio sets before and after. Then confirm whether the audioList exists at the last index of the database.
addAudio	Added “testFile” to Audio Set 1, then checked to see whether it contained “testFile”.
removeAudio	Removed “hi.wav” from Audio Set 1, then checked to see whether it existed afterwards.
getNumberOfButtons	Number of buttons should equal 5

- 4/4 Junit test runs
- Coverage: 82.4%

MainFrameTest

JUNIT Test	Implementation
testGUI	Open menu, select audio set, pressed start button, play sound file, press swap, then check to see whether each button was pressed

- 1/1 Junit test runs
- Coverage: 94.8%
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MainFrameSimTest

- Tested every GUI component by pressing all play buttons, swap, and exit
- Coverage: 97.6% (note: two methods were not used, as they are only used in JUNIT testing)

3. GUI TESTING

❖ 3.1 TEST RISKS/ ISSUE

We have realized that there were many methods that were GUI related which were tested. To compensate those flaws, we have used a manual tester for some tests.

❖ 3.2 ITEMS TO BE TESTED

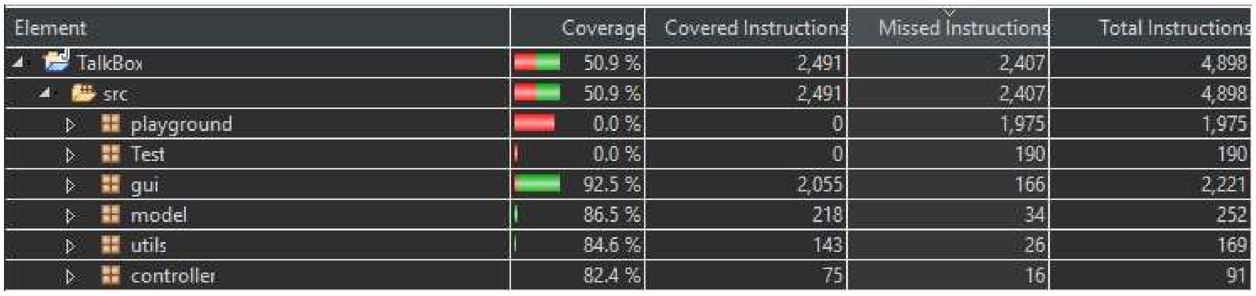
Test Case	Short Description	Status
(3.2.1) Swap button	Swap button does not swap between the audio sets	Resolved
(3.2.2) Exit versus Window Close	User is not able to exit through the app, without terminating the program	Resolved
(3.2.3) Custom Audio Set: uncheck	When unchecked, the buttons that are only used to make custom sets do not grey out, but remain useable	Not resolved
(3.2.4) Exit from Simulator	File > Exit should return the user back to the Configurator; however, it just terminated the program	Not resolved
(3.2.5) Audio set length	Having an audio set that has too many elements pushes some of the buttons out of view	Not resolved

❖ 3.3 TEST APPROACH

To resolve these bugs, we must first launch the program in eclipse using coverage mode. Then, we perform the actions that cause these bugs, and then confirm where in the code the error occurred.

4. COVERAGE

❖ 4.1 Coverage(screenshot of Coverage)



Element	Coverage	Covered Instructions	Missed Instructions	Total Instructions
TalkBox	50.9 %	2,491	2,407	4,898
src	50.9 %	2,491	2,407	4,898
playground	0.0 %	0	1,975	1,975
Test	0.0 %	0	190	190
gui	92.5 %	2,055	166	2,221
model	86.5 %	218	34	252
utils	84.6 %	143	26	169
controller	82.4 %	75	16	91

❖ 4.2 Conclusion

Both the model and the GUI see over 85% coverage.

The missing instructions in the model pertain to getters that retrieve the number of buttons and a specific audio list from the model. These are not used, as the methods that would use those arguments are not implemented in this particular version, and will be implemented for the final version.

The missing coverage in the gui relates to issue (3.2.3) on the previous page; when this issue is fixed, we predict that these instructions will be seen by the code when the box is unchecked.

The lowest coverage seems to be in Controller; however, the missing instructions are related to the missing coverage in model. The getters and setters in model are actually used by controller, so the missing instructions in model result in missing instructions in controller.

Note that *playground* and *test* are unused in normal operation; the former contains old code that is kept around for reference, while the latter is only used during JUnit testing.

While high coverage is seen across all parts, future implementation includes the ability to load audio sets onto a real Talkbox, as well as more methods to make the code more effective.