

# Treasure Box Braille

Requirements Documentation

# Table of Contents

Outline	4
Requirements Specification [Authoring App]	4
Acceptance Requirements	5
R.1 Create new scenario	7
User Needs:	7
Required Features:	7
Acceptance Test Case (User Stories):	7
R.2 Load existing scenario	7
User Needs:	7
Required Features:	7
Acceptance Test Case (User Stories):	7
R.3 Save scenario	8
User Needs:	8
Required Features:	8
Acceptance Test Case (User Stories):	8
R.4 Read story aloud	8
User Needs:	8
Required Features:	8
Acceptance Test Case (User Stories):	8
R.5 Add text to story	9
User Needs:	9
Required Features:	9
Acceptance Test Case (User Stories):	9
R.6 Add sound to story	9
User Needs:	9
Required Features:	9
Acceptance Test Case (User Stories):	9
R.7 Add pause in simulation given pause duration	10
User Needs:	10
Required Features:	10
Acceptance Test Case (User Stories):	10

R.8 Clear braille cell pins	10
User Needs:	10
Required Features:	10
Acceptance Test Case (User Stories):	10
R.9 Display braille cell pins	11
User Needs:	11
Required Features:	11
Acceptance Test Case (User Stories):	11
R.10 Re-use content in simulation	11
User Needs:	11
Required Features:	11
Acceptance Test Case (User Stories):	11
R.11 Take Input During Simulation	12
User Needs:	12
Required Features:	12
Acceptance Test Case (User Stories):	12
R.12 Navigate application without visuals	12
User Needs:	12
Required Features:	12
Acceptance Test Case (User Stories):	12
R.14 Reset buttons	13
User Needs:	13
Required Features:	13
Acceptance Test Case (User Stories):	13
R.15 Removing lines from story	13
User Needs:	13
Required Features:	13
Acceptance Test Case (User Stories):	13
R.16 Use application on Apple Mac computer	14
User Needs:	14
Required Features:	14
Acceptance Test Case (User Stories):	14
R.17 Use application on Linux computer	14
User Needs:	14
Required Features:	14
Acceptance Test Case (User Stories):	14

# Outline

The following document discusses various requirements that a user will need as a teacher creating scenarios for visually impaired students. Each requirement is structured with listing the teacher's need, a short list of relevant features to address the need, and a user story to outline the acceptance criteria for the requirement.

## Requirements Specification [Authoring App]

Version 1.0

Feb 4, 2018

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Requirement	Priority (1-4) <small>*1 is the highest</small>	Completed	Date Reviewed
Provide facilities to create the flow of the scenario (ask questions, receive answers)	1	Y	Aug 21
Provide facilities to record audio	1	Y	Aug 21
Provide facilities to test the scenario using the provided software	4	Y	Aug 21
Allow user to create new scenario files	1	Y	Aug 21
Allow user to save and open scenario files	2	Y	Aug 21
Allow visually impaired individuals to navigate through the application using designated keyboard keys	1	Y	Aug 21
Set up a voice over system that reads selected content aloud	2	Y	Aug 21

# Acceptance Requirements

Number	Acceptance Requirement	Critical	Test Result	Comments
R.1	The application must be able to create a new scenario	Y	Accept	User will be able to create a new scenario at the start of the application or by heading over to the New file menu button
R.2-3	The application must be able to load a new scenario and save a scenario	Y	Accept	User will be able to load a new scenario at the start of the application or by heading over to the Open file menu button. User can also save a scenario by heading over to the Save file menu button
R.4	The application must be able to read the story aloud using text-to-speech	Y	Accept	After the user simulates the scenario, the application will read aloud the scenario line-by-line
R.5-10	The application must be able to add the following scenarios: <ul style="list-style-type: none"> <li>• Custom Text</li> <li>• Sound</li> <li>• Pause</li> <li>• Clear Braille Cell Pins</li> <li>• Display Braille Cell Pins</li> <li>• Repeat Scenario</li> </ul>	Y	Accept	User will be able to add text, sound, pause duration, clear braille cell pins, display braille cell pins and repeat a scenario by using the appropriate buttons shown on the main interface
R.11	The application must be able to take input during simulation	Y	Accept	User will be able to move to different parts of the story based on the input provided by the user during simulation. Input must be set using the Add User Input button on the main interface
R.12	The application must support keyboard controls	Y	Accept	User can perform all available actions in the application through the use of specific keyboard shortcuts, arrow keys and the enter key. A guide for

				shortcuts can be found in the user manual
<b>R.14</b>	The application must support a reset button that resets the action of the all the buttons on the simulator	Y	Accept	User can reset the actions of all the buttons during simulation by adding a reset command to the scenario. The reset button can be found on the main interface
<b>R.15</b>	The application must support the ability to remove a specific line from the story	Y	Accept	User can remove a selected line from the story by pressing the remove button, found on the main interface
<b>R.16-17</b>	The application should be supported on Mac OS and Linux	N	Accept	The application is built with Java and therefore runs on any operating system.

## R.1 Create new scenario

### User Needs:

- Able to create a new scenario without requiring an existing scenario.
- Create empty scenario based on device specifications (buttons and cells)

### Required Features:

- New scenario

### Acceptance Test Case (User Stories):

**I want to** create a new scenario for scratch.

**So that** I do not need to have an existing scenario to start with.

**Story:** "Given that I know how many buttons and cells are on the device I tell the application these values and I am presented with an empty scenario. I may now begin creating my scenario."

## R.2 Load existing scenario

### User Needs:

- Load existing scenario for editing. The user must be able to edit an existing scenario.

### Required Features:

- Load existing scenario
- Modify the scenario

### Acceptance Test Case (User Stories):

**I want to** load an existing scenario.

**So that** I can modify the existing scenario.

**Story:** "Given that I already have an existing scenario file. I load the file into the application and can now edit the scenario."

## R.3 Save scenario

### User Needs:

-Save current story in application to a scenario file. User must be able to save current work and the file must be playable on ScenarioParser.

### Required Features:

-Save scenario (Export)

### Acceptance Test Case (User Stories):

**I want to** save my scenario onto my computer.

**So that** I can store the scenario for a later date.

**Story:** "Given that I am happy with my scenario and wish to save it. I use the save feature and choose a location I wish to save the scenario file to."

## R.4 Read story aloud

### User Needs:

-The device will read the proper lines in the scenario file using text-to-speech  
-The device will NOT read the line if it does not relate to user experience.

### Required Features:

-Support at least two of the following screen readers: ORCA, NVDA and Apple VoiceOver

### Acceptance Test Case (User Stories):

**I want the** device to read the story out loud.

**So that** my student can follow the story without having the need to read the text.

**Story:** "Given that I am using the application, the screen reader should read relevant lines so I am able to navigate and control the application with audio cues."



## R.5 Add text to story

### User Needs:

-Add text to story which could be read out by the device later. Text read by a speech reader is an important part of audio feedback for storytelling.

### Required Features:

-Add Text

### Acceptance Test Case (User Stories):

**I want to** add text to the story.

**So that** my student can hear the text when the scenario is played back.

**Story:** "Given that I type text into the application, the text will be stored in the scenario and will be read back at a later time to the student."

## R.6 Add sound to story

### User Needs:

-Add sound to story. Adding existing / pre-recorded sound to the scenario allows the user greater creativity without depending on the screen reader.

### Required Features:

-Add Sound

### Acceptance Test Case (User Stories):

**I want to** add sound to the story.

**So that** my student can hear the sound when the scenario is played back.

**Story:** "Given that I have a sound file I add it into the application, the sound will be stored in the scenario and will be played back at a later time to the student."

## R.7 Add pause in simulation given pause duration

### User Needs:

-The user must have the ability to add pauses to the scenario. The device will pause for a certain period of time in-between lines while reading the story based on the given pause duration.

### Required Features:

-Add Pause

### Acceptance Test Case (User Stories):

**I want the** simulation to pause for a certain period of time after a question.

**So that** my student can think about their response to the question and then answer when they are ready.

**Story:** "Given that I want to add a pause, I create a pause with a delay and a pause is added to the story."

## R.8 Clear braille cell pins

### User Needs:

-User must be able to clear the braille pins at a given time in the scenario. The Braille simulator will clear the pins if provided with a valid Braille cell number.

### Required Features:

-Clear Pins

### Acceptance Test Case (User Stories):

**I want to** clear the pins for a specific Braille cell.

**So that** I can change the display of the cell to a new 8 sequence value.

**Story:** "Given that the Braille cell was already set to a sequence. I want to clear that sequence so I can change it to a new braille value."

## R.9 Display braille cell pins

### User Needs:

- User must be able to set the pins on the braille device. Displays an 8-character sequence of 0's and 1's onto the specified braille cell

### Required Features:

-Set Pins

### Acceptance Test Case (User Stories):

**I want to** the specified braille cell to display an 8-character sequence of my choice.

**So that** the device shows the new sequence of pins in the simulation to my students.

**Story:** "Given that I want to display a new sequence of pins to my students. I'll specify the braille cell and set its pin to the sequence of my choosing."

## R.10 Re-use content in simulation

### User Needs:

-Repeat previous instructions. Certain sections of the scenario should repeat if the repeat button is pressed. The user must be able to dictate the start and end of the repeat sections.

### Required Features:

-Recurring Text (Coming soon!)

### Acceptance Test Case (User Stories):

**I want to** repeat a set of instructions.

**So that** my student can press a button and hear the instructions again

**Story:** "Given that I have a task for my student to perform, I want the student to be able to press a button so the instructions can be repeated to them."

## R.11 Take Input During Simulation

### User Needs:

- User must be able specify points in the scenario when the student is asked for input. The response from the student will lead to a different part of the story.
- Take action based on input

### Required Features:

- Skip Feature
- Buttons

### Acceptance Test Case (User Stories):

**I want to** ask the student a question

**So that** my student can press a button corresponding to a response to the question.

**Story:** "Given that i have asked a question in the simulation, I want the simulation to run a set of tasks based on the students response to the question."

## R.12 Navigate application without visuals

### User Needs:

- Navigate and use all features of the application without use of visual aids. It is important to have the application be accessible.

### Required Features:

- Keyboard controls
- Accessibility: screen reader

### Acceptance Test Case (User Stories):

**I want to** use the application without visual aids.

**So that** I can access the program even if I am visually impaired.

**Story:** "Given that I am visually impaired, I can easily navigate the application using the keyboard and audio cues."

## R.14 Reset buttons

### User Needs:

-User should be able to add a reset buttons point in the scenario. Reset the action of the all the buttons on the simulator.

### Required Features:

-Reset Buttons

### Acceptance Test Case (User Stories):

**I want to** reset the action of all the buttons on the simulator.

**So that** when my students press one of the buttons, nothing will occur.

**Story:** "Given that I don't want to use the buttons on the simulation screen anymore. I want to be able to reset all of the buttons so when they are pressed, they do nothing."

## R.15 Removing lines from story

### User Needs:

-User must be able to remove events from the scenario. Remove a specific line from a story

### Required Features:

-Remove

### Acceptance Test Case (User Stories):

**I want to** be able to remove a specific line from the story without affecting the rest of the story.

**So that** when I make a mistake when adding lines or decide to change a certain line, I don't have to restart the entire story.

**Story:** "Given that I make a mistake when creating a story. I want to be able to return to that line and remove it from the story without affecting any other lines."

## R.16 Use application on Apple Mac computer

### User Needs:

-Use application on Apple Mac Computer

### Required Features:

-Apple Mac compatibility

### Acceptance Test Case (User Stories):

**I want to** use the application on my Mac.

**So that** I can use the application on my Mac.

**Story:** "Given that I am running the application on my Mac. I expect all features to work properly and to be accessible."

## R.17 Use application on Linux computer

### User Needs:

-Use application on Linux Computer

### Required Features:

-Linux compatibility

### Acceptance Test Case (User Stories):

**I want to** use the application on my Linux computer.

**So that** I can use the application on my Linux computer.

**Story:** "Given that I am running the application on my Linux computer. I expect all features to work properly and to be accessible."