<u>User Manual</u>

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Section 1 - Getting Started

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1.2: *About Braille*
Braille is a form of written language for the visually-impaired, in which characters are represented by patterns of raised pins that are felt and interpreted with the fingertips.

Braille symbols are formed within units of space known as braille cells. A full braille cell consists of eight pins arranged in two parallel columns each having four pins. The pin positions are identified by numbers from one through eight. Two hundred and fifty-five combinations are possible using one or more of these eight pins. A single cell can be used to represent an alphabet letter, number, or punctuation mark.
(insert image of braille and from simulator)

1.3: *What is the Authoring App?*
The Authoring App is a tool for visually impaired/capable users to teach braille to visually impaired students. This is done by the teacher creating teaching scenarios for the student in which they decide the flow of each scenario as well as edit them at anytime.
Many other options for the student as well as the teacher can be found in greater detail in the following sections.

1.4: *Installation Instructions*
The download for our application can be found at https://github.com/ayaAllan/2311.
Locate the runnable jar file called AuthoringApp.jar in the version 1.0.0 release.
This should also contain the *FactoryScenarios* folders with it for you to store your audio/scenario files.

Section 2 - Main Menu

2.1: *Options for Visually Impaired Users*

In the lower left corner of the Main Menu, there is a check button to enable the option for visually-impaired users. This will do integrate a screen reader into the system. It is recommended for those who are visually-impaired to download and use a screen reader. Our app is fully functional with most popular screen readers. Our recommended screen reader to use is NVDA. We have tested the app using this screen reader.
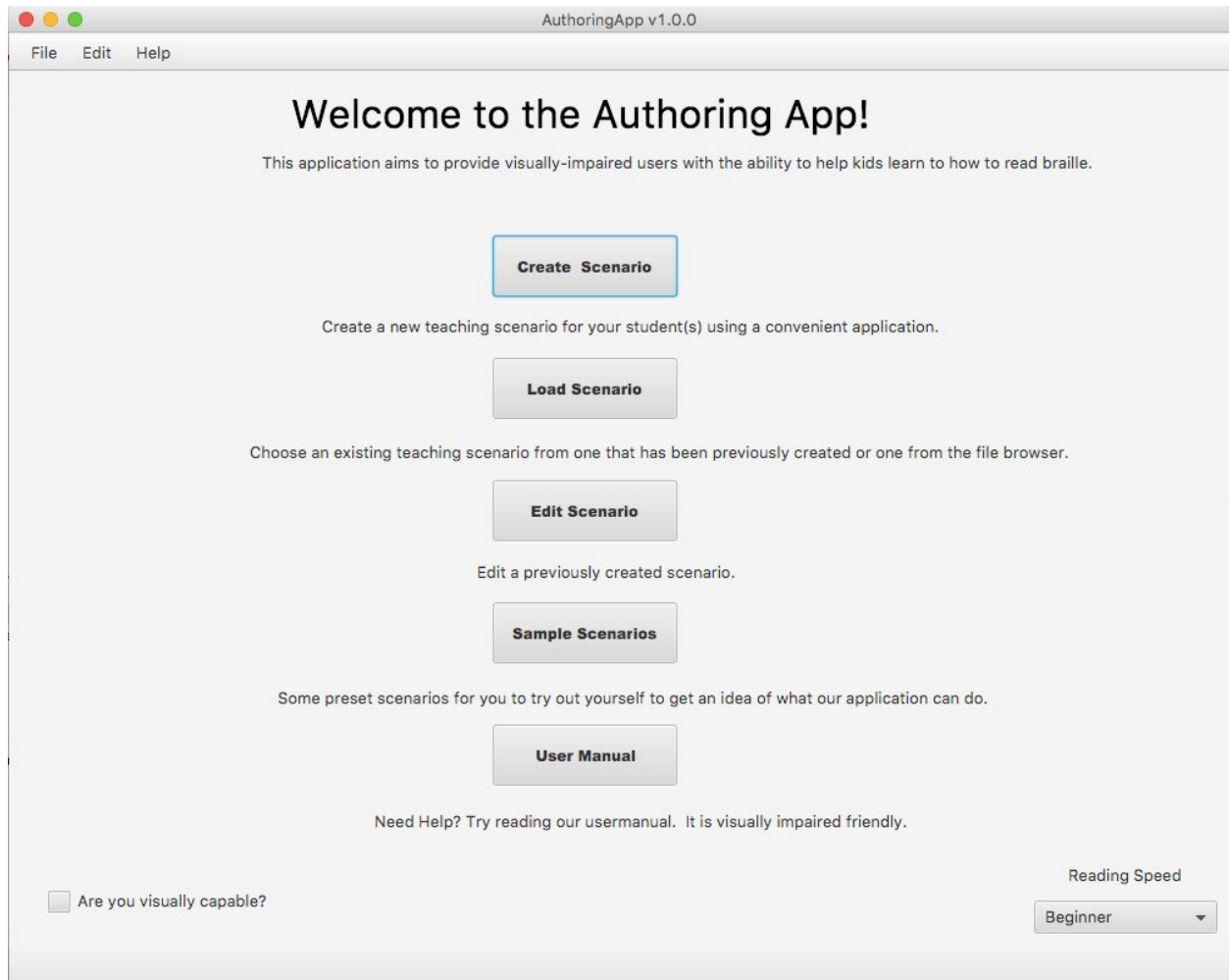

Figure 1.0- the Main Menu of the Authoring App

2.2: *Button Functionality*

1. Create Scenario:
   This button is the first step towards creating a new scenario. Clicking here leads the user to the Scenario Setup. This prompt window requests three parameters: name of new scenario, number of braille cells, and number of buttons. More on this in Section 3.

2. Load Scenario:
   Clicking this button prompts a file selection window where the user can browse their scenario library. They can select from either the pre-made factory scenarios or any scenario they have previously created. More on loading existing scenarios in Section 4.

3. Edit Scenario:
   The Edit Scenario Button allows the user to revise a scenes in an existing scenario. This button reroutes to the Scenario Builder with the selected scenario open for editing. The user can use the Scenario Builder as usual (see: Section 3), creating new scenes or deleting old ones. However, the user cannot change the number of braille cells or button, since those are dictated in the Scenario Setup at the initial creation of the scenario.

4. Sample Scenarios:
   This button redirects the user to a narrated introductory video of the program's capacity. The video shows a basic walkthrough and how to create, edit, and load a scenario.

5. User Manual:
   This button redirects the user to this document; a detailed breakdown of the program and how to use it.

Section 3 - Creating a Teaching Scenario

3.1: *Intro*

This section is dedicated to providing a detailed description of how to create a scenario in Authoring App. This system is laid out in a user-friendly style that simplifies the process of creating scenes and condensing them into a scenario. Moreover, it allows the user flexibility in specializing each scene by having a malleable format. To start, click 'Create a new scenario'.

3.2: *Scenario Setup*

This preliminary step requires the user to name their scenario and decide how many braille cells and button they would like. The user must provide a scenario name or they will not be allowed to continue to the Scenario Builder as seen in the Figure 3.1. For the number of braille cells and buttons, the user can choose up to 12 cells and buttons from the drop-down window (Figure 3.2). After providing these three parameters, the user can continue to the Scenario Builder.
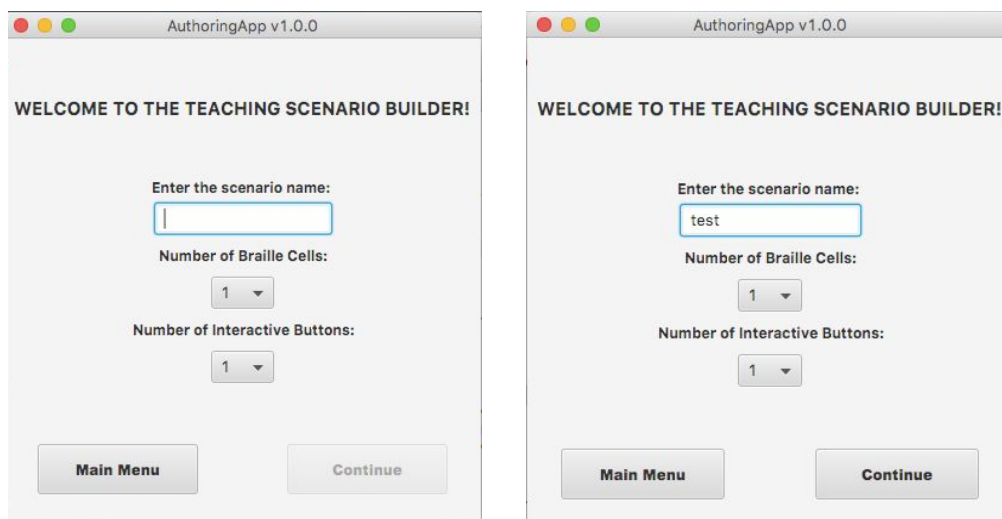
Figure 1.1- The 'Continue' Button is enabled only after a scenario name is provided
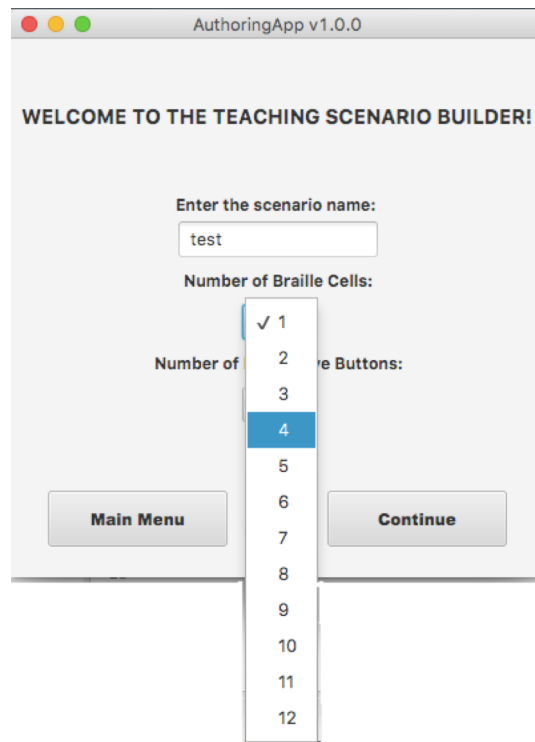
Figure 1.2- Select from the drop-down menu up to 12 braille cells and button

3.3: *The Three Steps*

Step One- Name your scene. This is important because it always the user to distinguish between different scenes in a scenario and be able to go back to it in case they wish to edit.
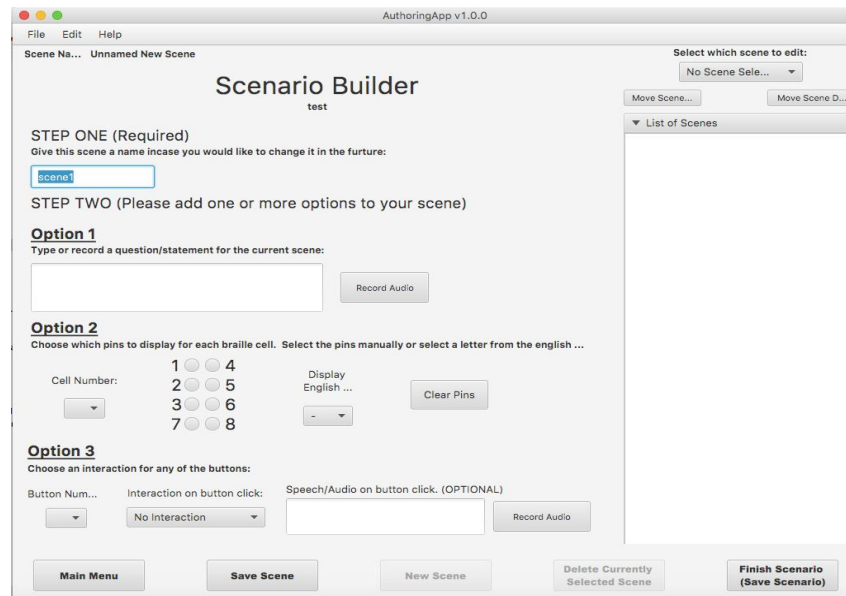

Figure 1.3- Provide a name to each new scene created

Step Two- The user is presented with 3 options to allow flexibility in customizing individual scenes. The user can choose to implement only one option, all three options, or any combination they wish.

> Option 1: This option allows the user to form questions and comments, typed or they can record an audio file using the 'Record Audio' button. For the scene we're building in Figure 1.4, we would need to implement options 2 and 3. Whereas, in Figure 1.5, we can simply implement option 3 for a 'Continue' button.

Figure 1.4- Here we're using option 1 to pose a question and provide multiple choices

Option 1

Type or record a question/statement for the current scene:

> You're doing super so far!
> Now, we'll move on to 3-letter words.
> Click Button 1 to continue.

Record Audio

Figure 1.5- Using option 1 to merely provide a comment

Option 2: This options is where the user can develop braille cells for their student. Depending on how many buttons the user indicated they wanted in the Scenario Setup window, they'll be able to select any cell and display any collection of pins they wish. Firstly, choose which cell you wish to implement from the drop-down menu. Secondly, choose pins to display in one of two methods: 1) manually by selecting pins from the sample braille cell (fig 1.6) or 2) using the second drop-down menu and browsing for an English language letter (fig 1.7). The 'Clear Pins' button resets the sample braille cell.

Option 2

Choose which pins to display for each braille cell. Select the pins manually or select a letter from the english ...

Cell Number:

1 ● ● 4
2 ● ○ 5
3 ○ ○ 6
7 ○ ○ 8

Display
English ...

-

Clear Pins

Figure 1.6- Manually selecting pins on the sample braille cell

Figure 1.7- Selecting letters from the drop-down menu

Lastly, the user can go back to the 'Cell Number' drop-down menu to implement the rest of the cells they requested.

Option 3: The last option presented is interaction buttons, which are likely to be used in a variety of scenes. As in option 2, the user must select a button from the drop-down menu to implement; the number of buttons in the menu will also correspond to the number the user specified in the Scenario Setup. Secondly, the user must categorize the type of interaction the selected button will perform. There are 5 types of interaction available (fig 1.8) for the user to choose from:

> 1) 'No Interaction': this setting is defaulted to all buttons
> 2) 'Play Correct Audio Clip': this setting should be assigned to the button that corresponds to the correct answer, for it plays a short affirmative sound clip. In fig 1.4, if the answer was 'a', Button 1 would have this type of interaction.
> 3) 'Play Wrong Audio clip': this setting should be assigned to the button that corresponds to any wrong answer, it plays a short negative sound clip. In fig 1.4, if the answer was 'a', Button 2 would have this type of interaction.
> 4) 'Repeat Scene': this setting repeats the text in option 1. In fig 1.4, Button 3 would have this type of interaction.
> 5) 'Skip to Next Scene': this setting skips forward towards the next scene. In fig 1.5, Button 1 would have this type of interaction.
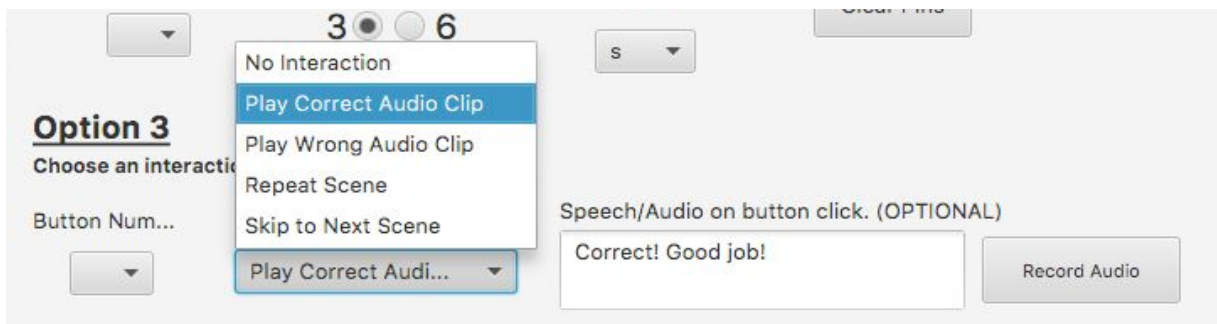
Figure 1.8- 5 interaction settings available and a comment box

For each button, the user can also choose to write out or record a comment as seen in fig 1.8

Step Three- Lastly, the user must save each scene before they can move on or exit. Note in fig 1.3, the 'New Scene' and 'Delete Currently Selected Scene' are not enabled because the scene has not been saved yet. After saving the scene, those buttons become enabled as seen in fig 1.9.

Figure 1.9- Saving a scene enables all buttons and adds it to the List of Scenes panel on the right

Now, the user can create a new scene using the 'New Scene' button or finish and save scenario by clicking the 'Finish Scenario (Save Scenario)' button.

3.4: *Creating and Accessing Scenes*

Picking up from fig 1.9, the user can create another scene by clicking 'New Scene'. This redirects to a cleared Scenario Builder where the 'Save Scene' and 'New Scene' buttons are not enabled (fig 1.10)

Figure 1.10- The Scenario Builder is reset for a new scene after the first one was saved

After the user implements their second scene, they can switch back to the first one if they wish to edit it only after saving their current one. This is done using the 'Select which scene to edit:' drop-down menu in the upper-right-hand corner displayed in fig 1.11.
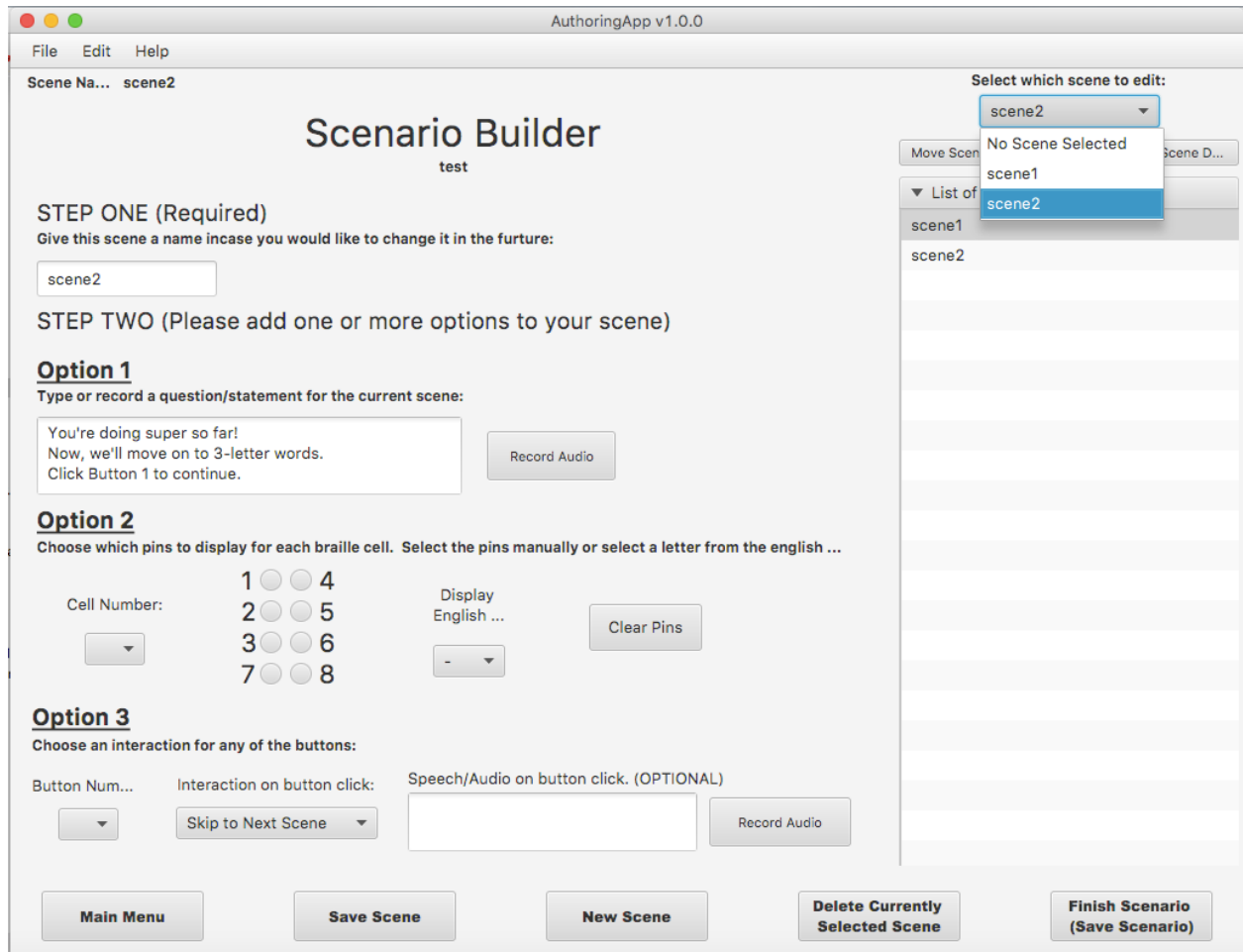
Figure 1.11- Saving a new scene adds it to the List of Scenes panel, where the user navigate through scenes they have created

Lastly, the user can reorder the sequence of the scenario by moving scenes using the 'Move Scene Up' and 'Move Scene Down' located under the 'Select which scene to edit:' button.

Once the user is has created all the scenes they wanted, they can now click 'Finish Scenario (Save Scenario)' button to save the scenario and exit back to the main menu.

Section 4 - Loading an Existing Scenario

4.1: *Navigating Currently Existing Scenarios*

The purpose of the *Load Scenario* button is to allow the user to view their fully implemented scenario. When you click on the Load Scenario button a window will appear prompting the user to select a Scenario he/she has created. Upin clicking the desired Scenario, simulation of the teaching scenario will appear . This is the same braille cells and buttons that the children will use to answer questions the teacher has created.

Step 1: Load the Authoring App
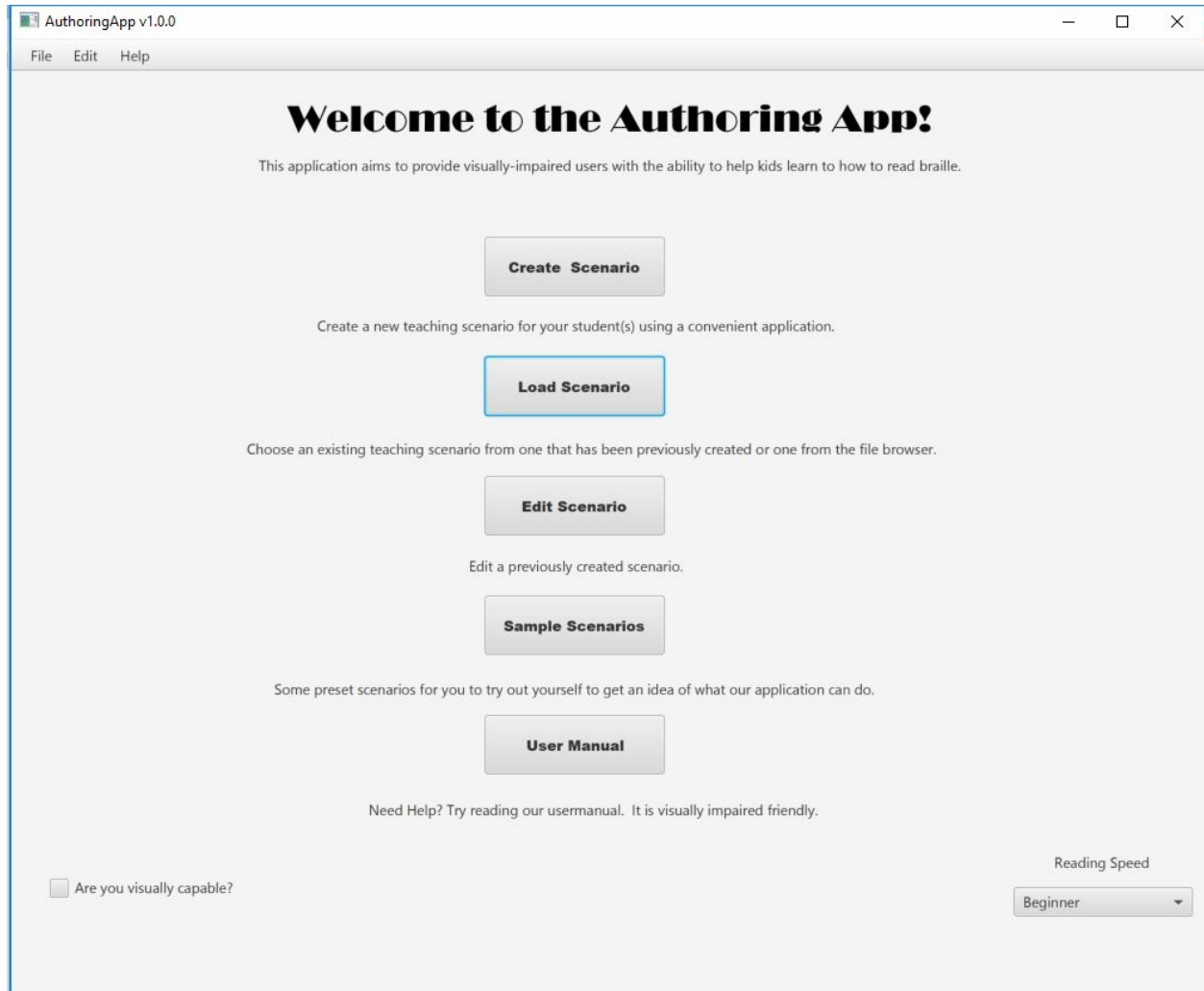
Figure 4.1 Main Menu

Step 2: In the Main Menu click on the Load Scenario Button
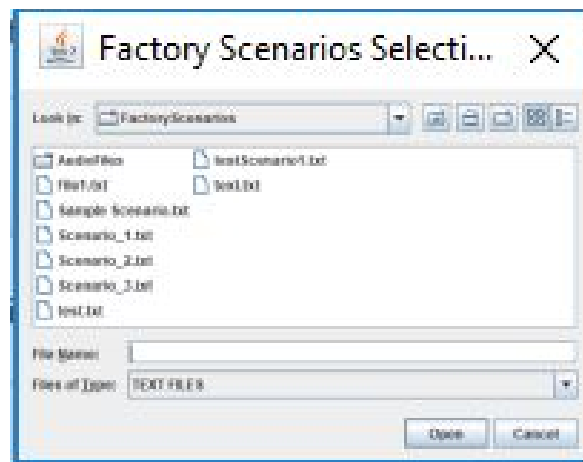
Figure 4.2 Factory Scenarios Selection GUI

Step 3: Select the Scenario you would like to load
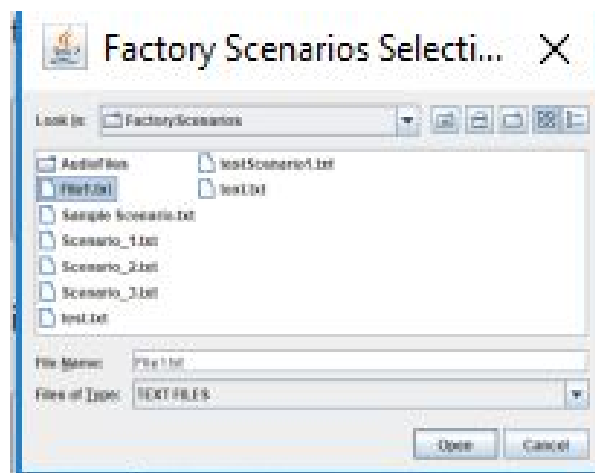
Figure 4.3: Selecting Scenario

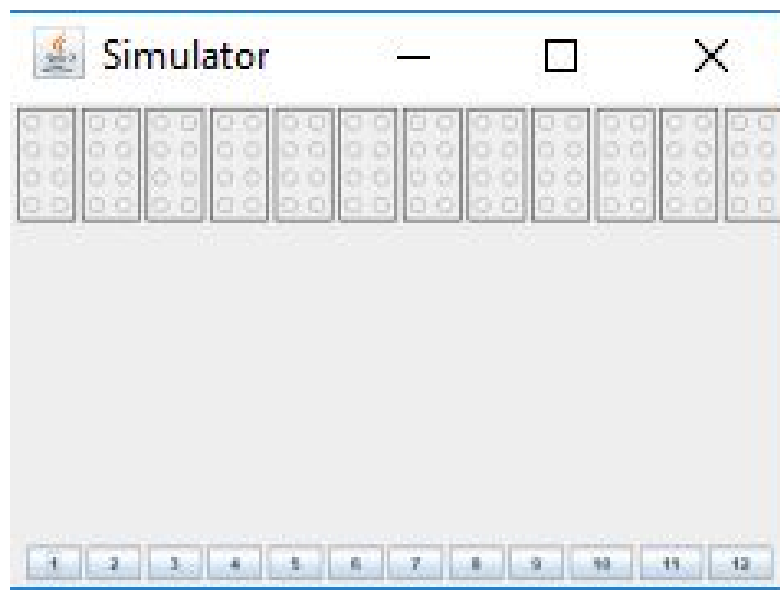**Step 4: The interactive GUI for teaching students**

Figure 4.4: Interactive GUI

Section 5 - Editing an Existing Scenario

This section instructs the user on how to edit an existing scenario. Note that the Edit Scenario button does exactly what the Create Scenario button does, except it loads the data from the object that was stored when the user created the file, instead of creating a brand new scenario.

Step 1: Load the Authoring App and Select the Edit Scenario button
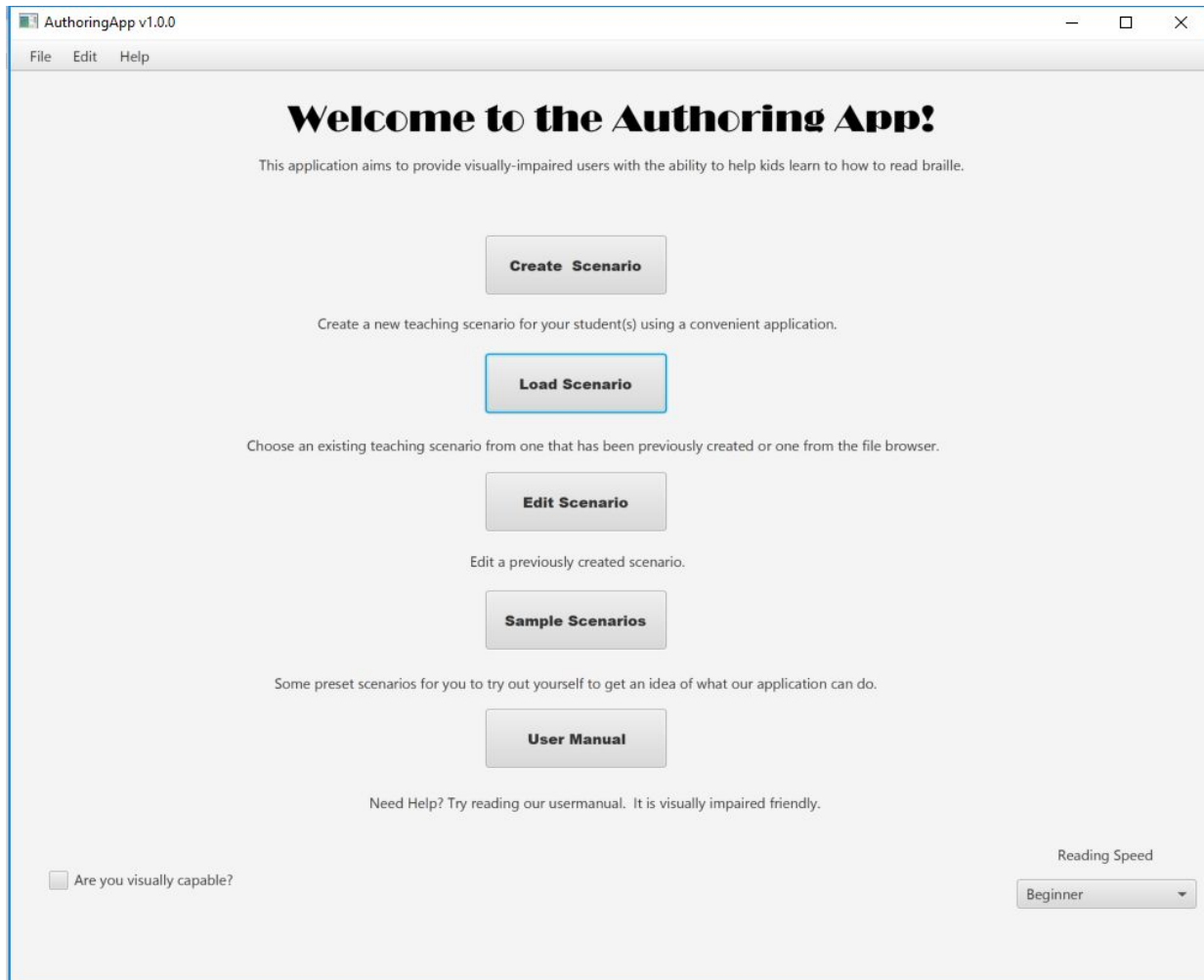
Figure 5: Main Menu

Step 2: The Edit Scenario window will pop up
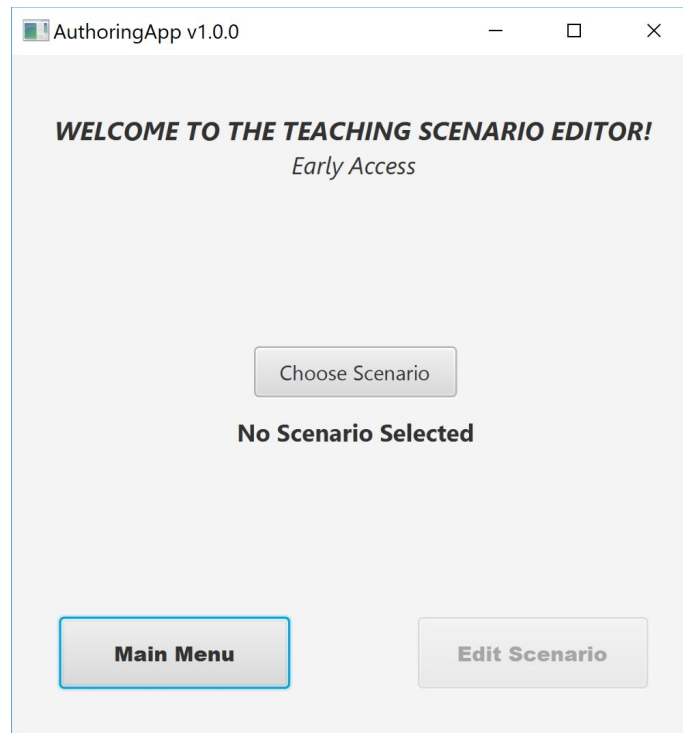
Figure 5.2: The Edit Scenario GUI

Step 3: Choose a scenario
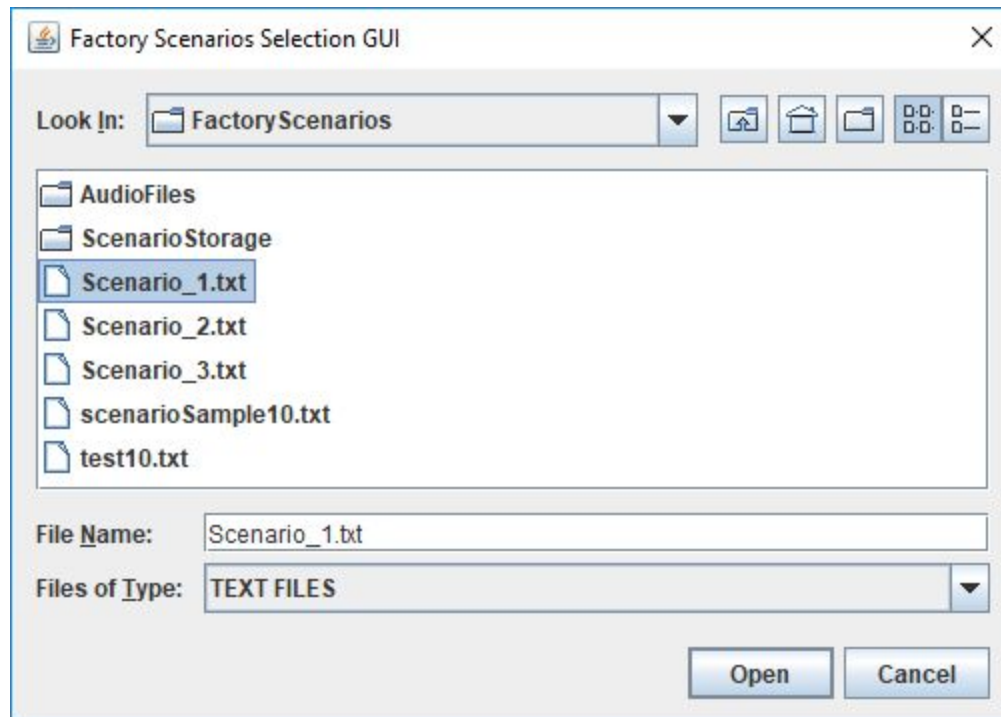
Figure 5.3: Choose a Scenario

Step 4: Select the no longer greyed out Edit Scenario button

Figure 5.4: Select the Edit Scenario button

Step 5: Scenario Editor

Step 5: Edit the Scenario