Treasure Box Braille

Requirements Documentation

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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.

The user stories dictate what a successful interaction the user has with the application should be. The acceptance test case is satisfied if the user story can be successfully replicated using our application. By following this test case, we can determine which user needs are being met and which require further development.

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 and 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 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 craille 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.”