Requirements Document

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Functional Purpose

The purpose of this program is to enable educators to teach visually impaired students how to read braille in a user-friendly environment that is both easy to navigate and supportive toward a wide range of educational options. From navigating between the two fundamental categories Quiz and Storytelling, educators may choose between adding content, modifying past material, or uploading audio recordings in order to enhance the learning experience for students in an enriching manner. Given this supportive environment, students will learn how to read letters and numbers based on their teachers' personalized curriculum. They will further interact with their teachers' assignments through the braille cell. This cell is comprised of 8 buttons and is directly modified according to the teacher's instructions noted on the program. As such, given this supportive, expansive and user-friendly software, teachers are easily able to personalize their curriculum with a wide range of educational material in order to ultimately provide students with the enriching and interactive academic experience that they deserve.

Use Cases

Description

Two types of individuals play interactive roles when navigating this software – the teacher and the student. While the teacher may add, modify or upload quizzes and audio recordings to the program, students will directly interact with the braille cell that corresponds to the teacher's assignments.

Precondition

In order to take advantage of the rich variety of options provided by this software, a braille cell with 6 to 8 buttons is required. This way, the teacher's material will modify the buttons on the braille cell according to its input and will provide students with engaging and educational assignments.

Interactive Engagement

As educators may choose between creating quizzes to uploading audio recordings, the software will directly accommodate given its back-end development and materializes the information using the braille cell and screen reader. On the other hand, while students respond by pressing buttons on the braille cell given instructions voiced by the screen reader, the software interprets student input and proceeds differently depending on whether the teacher created a quiz or an interactive story.

In order to ensure an enriching experience using this software, keep in mind that the software may not respond as anticipated to braille cells that do not have 8 buttons and therefore must be updated given that situation. Further, educators as well as students must take note of their usernames and passwords when creating their given accounts in order to easily navigate the work completed on their profiles as well as work that still needs to be complete.

Acceptance Test Cases

1. User needs

1.1

Is the objective of this software satisfying user needs?

1.2

Are there aspects to this software that are not required but you would like to be included? For example, would you prefer that this software supplies educators and students with the braille cell?

2. Assumptions

2.1

Teachers must be provided with the means to create and modify quizzes along with uploading audio recordings.

2.2

Students must be provided with the means to engage with the software through the screen reader along with the braille cell. This includes pausing and stopping the audio recording, or responding to questions using buttons on the braille cell.

3. Deliverables

3.1

The progression of software development involves:

- designing the layout of the GUI
- developing the architecture of the code
- creating test cases according to test-driven development
- completing the back-end code required to connect aspects of the software together

3.2

Teachers are able to create, modify and save quizzes and audio recordings.

3.3

Students are able to pause, stop and replay audio recordings. Students are able to interact with the work assigned using 8 buttons on the braille cell.

4. Tools

- login username
- login password
- 8-buttoned braille cell
- Computer with auditory capacity to play the screen reader