

Ease of Readability for Dyslexic People

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Introduction

- Dyslexia is a specific reading disability in word recognition, spelling and decoding.
- People with dyslexia require special adjustments to the text and text environment to be able to read better.
- Therefore, there is a need to identify user-interface requirements for readability for people with dyslexia.
- The requirements are proper font style, font size, font colour, background colour and spacing.
- Our objective is to make a software that accepts the file the dyslexic person wants to read and display it in readable format for them.
- Every word can be shown slowly letter by letter or every sentence could be shown word by word according to their convenience, instead of the entire word or sentence being displayed at once, enabling them to grasp and read properly, at their own pace.

Smart Reader

- Smart Reader is an application we plan to design to help people having reading disabilities read articles and text files without any difficulty.
- One major glitch with traditional text presentation is that there is a need for squeezing a lot of information into a small area.
- In our application, the file containing text is streamed in a horizontal fashion.
- Every word is broken up, and shown letter by letter.
- The user is allowed to select the font style, color and background color as per his needs.
- Users do not need to move their eyes from left to right and can instead focus on one particular point, while the letters are displayed.
- We have also included audio and a dictionary, to enhance the reading experience.

Proposed System

A] Algorithm

Step 1: Retrieve file from main memory

Step 1.1:

Open connection and access the file

Step 1.2:

if(inputstream !=null)

save string from the file

Step 1.3:

by using a while loop

append text to string s

Step 2: While(s!=null)

Step 2.1:

Split the sentence into words, and words into letters

Step 2.2:

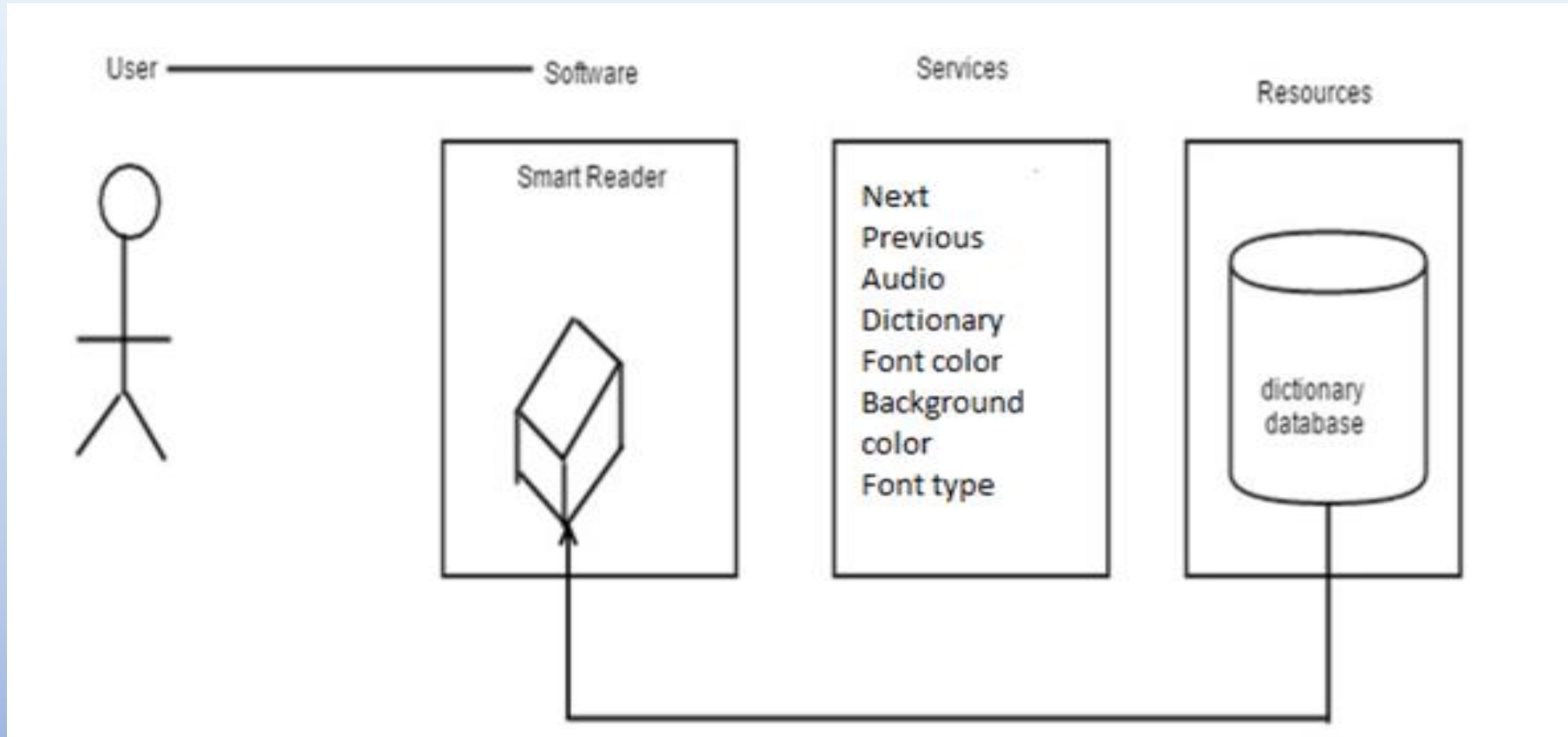
Display each letter using Next and Previous buttons

Step 2.3:

Display the word after the last letter

Step 3: Finish

B] System Architecture



- The architecture diagram gives an overview of the software used in the system.
- It provides the services offered to the user and the resources required for the development of the system.
- In this diagram, the user can access Smart Reader which is the software used.
- This software is connected to the database.
- The database is important for the dictionary, since it maintains an account of every word and its meaning.
- The services offered by Smart Reader include the options to import a new file as input, split the file, move to the next or previous character or word, listen to audio, and use the dictionary for reference while reading.

Functions

- 1) File Upload/Open
- 2) Split
- 3) Next
- 4) Previous
- 5) Audio
- 6) Font Style
- 7) Font Color
- 8) Background Color
- 9) Dictionary

Future Scope

Once the implementation of the proposed model is complete, Speed Reading can be further improved by adding the following functionalities:

1) **Web mining:**

In this project, we have a word file as an input which can be modified by taking an html file as an input from a website. The data from different html files can be processed further.

2) **Bookmark:**

Users can Bookmark the line they were on, so they can go right back to where they left off from.

3) **Images:**

We can include an image for every word in the database dictionary, so that when the user is not able to understand its meaning, he or she can refer the image beside the meaning to understand the word easily.

Conclusion

- In this day and age of digitization, even education and reading have become digital.
- We have conceptualized this application keeping in mind the requirements of dyslexic people and voracious readers who do not have the leisure of time or are expected to be extremely competitive.
- We hope our application can be of use to our users to sharpen their comprehension skills and provide a satisfying and fruitful experience.