Shiny application for text reading with alignment method.

Context

Online literature on the subject of reading methods is rich; in March, 2014, a start-up named Spritz released an app claiming to enable people to read up to a pace of 1000 words per minute. One would finish Harry Potter bestseller during a standard lunch break.

The idea behind this innovation is to suppress any eye movement between the lines of a book and present the words one by one, rapidly, in such a way that the middle letter of each word is centered on a fixed red line.

I've reproduced the basics of this technology on a Shiny application. Shiny is a framework developed by R-Studio that allows quick publishing of any R algorithm as an online user interface.

Application

Issues and features

Several issues arose when developing this application.

First, we needed to wrap the file upload and the text processing downstream in a *reactive* context, thus avoiding reprocessing each time the user changes an input.

The second issue was how to control the time interval between consecutive words and let the user select it with a slider. The change in the slider should not reset the reading at its beginning (but a new upload should), so we set up a global variable *i* for the index of the word being read.

The function *invalidateLater* allows us to control how we reset the display of a word: its time argument is dependent on both the slider input and the pause button. Whenever the pause button is clicked, a variable is incremented; when it switches from an odd to an even number it delays the next word by an almost infinite number of seconds:

```
invalidateLater( ifelse(input$PAUSE %% 2, 1e10, round(6e4/input$speed)), session )
```

Eventually, a radio button allows bypassing the file import and displaying some dummy text in English. One of five examples is randomly picked:
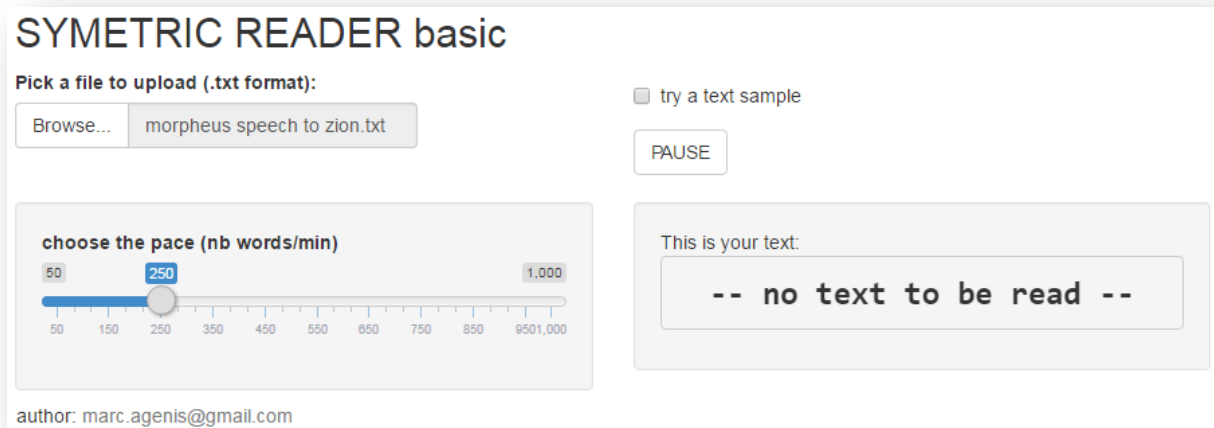
- A speech of Winston Churchill during WW2
- St Crispin's Day Speech from Shakespeare's *Henri V*
- The preface of *Democracy in America* by Tocqueville
- The speech of Morpheus in *Matrix: Reloaded*
- Fable de la Fontaine (*le Loup et le Chien*)

Overview

The application is available at this URL:

https://agenis.shinyapps.io/symetric_readaer_basic/

A screen shot of the appliscation is provided hereafter:

Pending improvements

Improvements are welcome, however each additional piece of code might cause a delay in the execution of the script that can be visible at high reading paces.

Some improvements are considered:

- Add a text-input zone, in order to copy and paste free text from the web.
- Color the central letter in red like in Spritz (requires some java code)
- Add a button to replay a text
- Improve the regex process to eliminate some special characters, punctuation or extra blank lines.