The Readable Reader

Apparently, there are no easily accessible e-pub readers for the visually impaired. If you have a condition or illness that affects your eyesight, but you aren’t blind, there is a whole industry of aids and tools, but these are usually expensive, or technologically outdated. Often both. We have not been able to find, for example an e-book reading application for iPads that allows the font size to be scaled beyond a maximum that is too low for some people.

## Problem statement

For a lot of people, the iPad, and other tablets can be a god-send: an easy to use device that is secure and always at hand. An application that would enable visually impaired people to read books and other long-form texts might very well substantially improve the quality of life for thousands, if not millions, of people.

But as far as we can tell, it does not exist yet.

A web-based application that would make e-books accessible, and be useful on a tablet, would be much easier to create, distribute and maintain than a native application. This would allow us to experiment with different ways of displaying text to address different kinds of impairments. For some people, a very large font-size would work. Others will need adjustment of the colors. For dyslectic people, specialized fonts exist, that could be useful for non-dyslexics. There are many more ways of helping people. One source of inspiration would be the current generation of assistive devices. But another one might very well be the world of speed-reading applications. They are also using tricks (such as giving different letters different colors) to improve the recognition of word-forms.

## Our Goals for the Readable Reader

We’d like a SPA that would allow the user to upload books in e-pub format, that can then be displayed in several different ways. The exact kinds of visualization is open to research. It is important that the software be built in a way that would allow researchers to add new display-techniques to the application.

Besides the diaplaying of the book, the UI of the app itself should be designed to be accessible to the target audience. You will receive help in adaptin the UI-design to visually impaired people.

We intend for this product to be a recurring assignment in DWA-semesters: Other student groups will adapt and improve in the version that you deliver. We will also make an effort to actually distribute the app. So your work might very well actually be used by many people.

## More details about the final product

* We already have the technology to open files in e-pub-format. We’ll give you example code.
* It would be useful if the app would integrate with cloud-storage like Dropbox or OneDrive. That way, we might allow users to share interesting books without having to host them ourselves.
* A program called Calibre is often used to convert between e-book formats, and to remove DRM. It is a “would-like-to-have” if the app would be able to provide similar services, possibly by running Calibre on the server.

## Research

There are two options for the research:

1. Focus on techniques for displaying text to visually impaired people.
2. Focus on intergration with could-services and Calibre.

The group may choose either direction for their research.