SFU

CMPT 275 Assignment 2
Group 2

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[REQUIREMENT DOCUMENTS]

Group 2

0 Revision History

Revision	Status	Publication/Revision Date	By
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2.0	Revised	June 2, 2011	Sherman, Vlad, Parminder, Ryan, Eric
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1 Introduction

1.1 Purpose

This requirement document is written in the format of a user manual. It specifies the functional and non-functional requirements for our product: iSpeakRead. The goal of this requirement document is to present our project to the end-users as well as give a detailed guideline to our system designers to implement this software. In order to balance both sides, this document is written neither too technically nor too vague.

1.2 Scope

Our product is an iOS accessibility application called iSpeakRead, created by our company iEnable. With our product, users can download books onto iOS devices and read them with Visual Assistance, or have them read out loud. This is done by using a text to speech translator, which allows for Audio Assistance for those with difficulty reading small text. As the books are being read to the user, the font of every word will increase so that would allow users to read along with the narration. Alternatively, users can choose to simply use the font magnification option and read at their own speed for Visual Assistance.

Another feature this application will have is it will be able to browse web pages while making use of both the Audio and Visual Assistance functions. This would allow users to access web content on their iOS devices without having to deal with unreadable font sizes.

Visually impaired and elderly people would benefit from iSpeakRead the most, as they are the ones who have the most difficulty reading tiny font sizes. However, people without visual impairments may also find this application useful if they do not want to strain their eyes on tiny font, or if they would rather listen instead of read.

1.3 Overview

In Section 2, the experience, expertise and goals of our intended users will be specified and clarified in detail.

For the application itself, all the significant feathers will be listed and linked to the design document for implementation use, and all the constraints, i.e., non-functional requirements will also be described in Section 3 and 4.

In Section 5, we will go through some tutorials to get familiar with the user interface as well as the function that our application provides.

At last in Section 6, some terms will be carefully explained.

2 Intended Audience:

2.1 Description

This application is intended for people with visual impairments that make it difficult to read books. Their goal should be to read a document or book on their mobile device with the assistance of this application.

Such users who suffer from myopia, hyperopia, astigmatism, and presbyopia, would benefit from using this program, since they will be able to receive the contents of books without straining their eyes or using corrective lenses. Users that have difficulty reading due to neck or back injuries would also benefit, since they would no longer need to strain themselves to read. Users without visual impairments would also benefit, as they can listen to books if they need to multitask and their eyes are directed elsewhere. An example would be while driving.

The environment that is intended for usage will be anywhere a user can listen comfortably to their i-device. Environments such as classrooms, buses, at home, and parks would be ideal.

2.2 Prerequisites

2.2.1 Background

It is assumed that the users' vision is adequate enough to navigate iOS, read large letters no less than font 36, and recognize large icons no smaller than the iPhone home button. It is also assumed that they understand English and do not have hearing impairments.

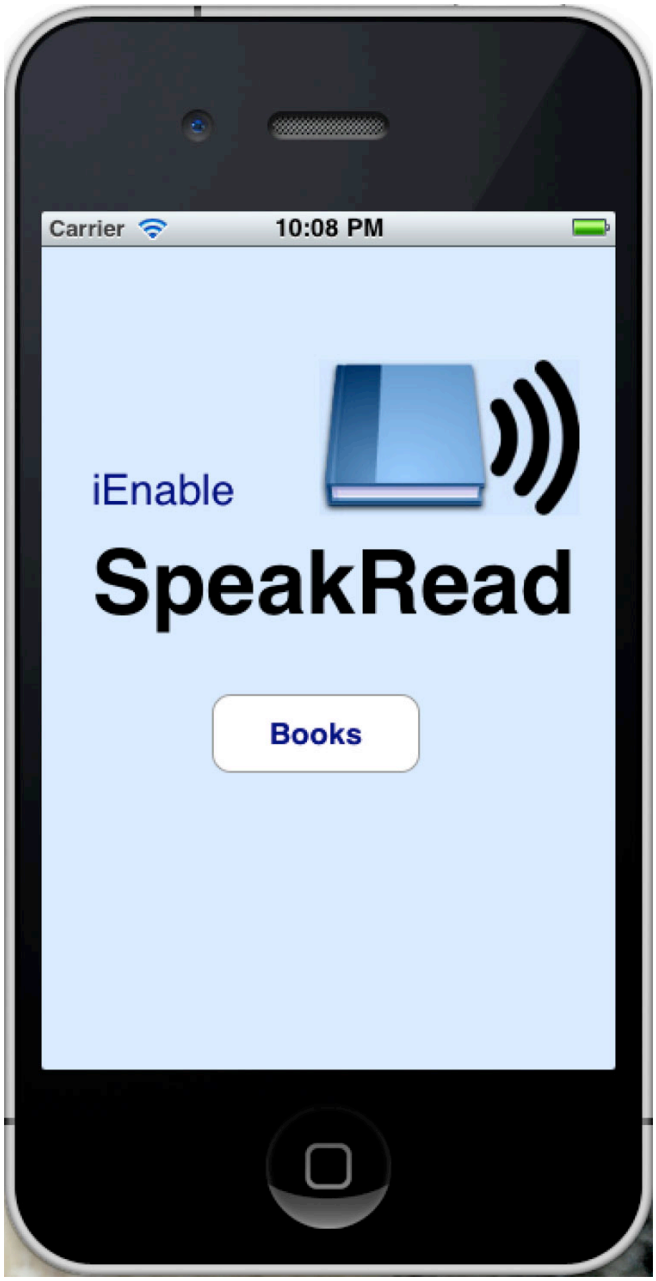
2.2.2 Experience

They should have prior experience with iOS and with the basic navigation of applications. And get familiar with the application's layout no more than an hour with the help of our tutorials in Section 5.

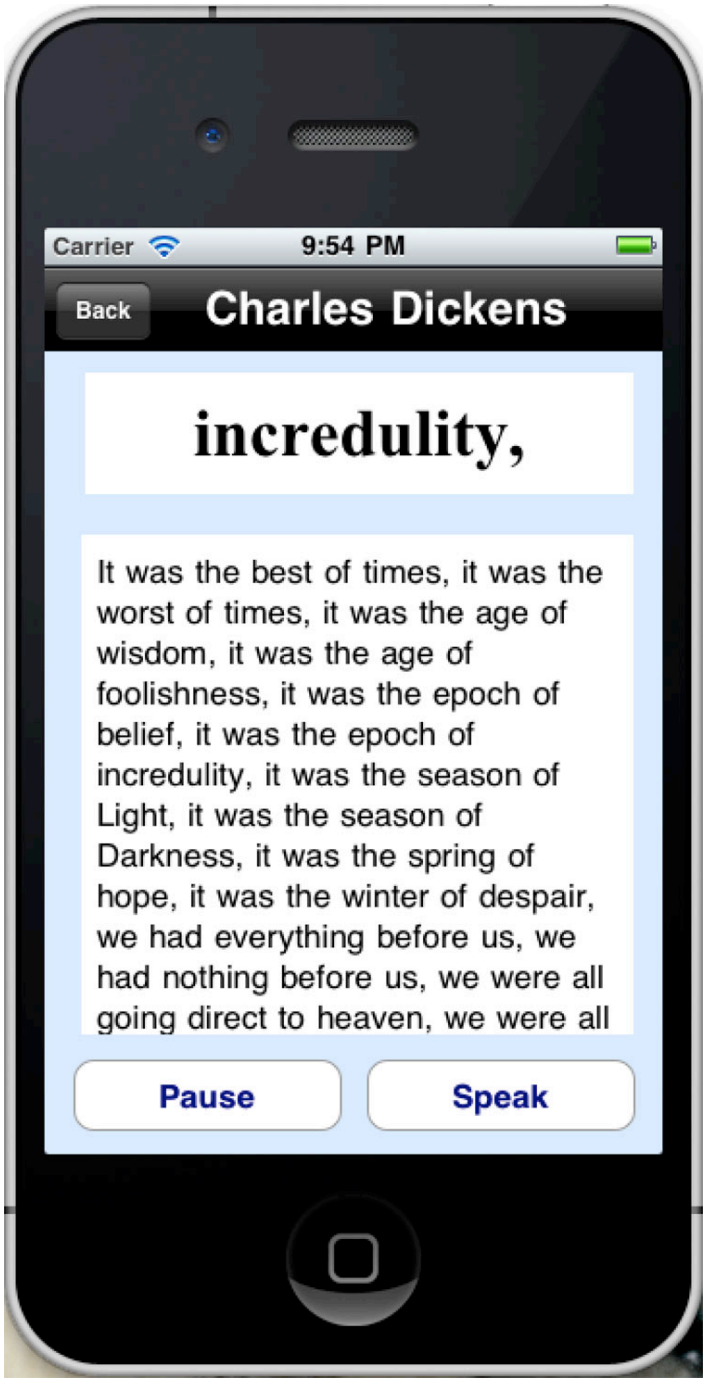
3 Features/ Functional Requirements

3.1 Main Menu:

Two buttons to select Book Menu or Web Browser in the final version. Only the book button has been implemented in this version.



3.2 Reading Menu:



3.2.1 Book Loading:

When book has been selected, Reading menu opens and automatically loads the selected book on the screen. Several paragraphs can be displayed on the screen.

3.2.2 Visual Assistance:

The word being read will be enlarged and displayed on the screen. This word changes to the new word as soon as it has begun being read out loud.

3.2.3 Audio Assistance:

When user wants SpeakRead to read the document for them, user presses the SpeakRead icon in the top right hand corner. The selected word becomes the starting point for SpeakRead, and will start reading the words from that point for the user. Words are translated into audio and sent to the speakers or earphones. User can stop the reading at any time by pressing the SpeakRead icon.

4 Non-functional Requirements

4.1 Accessibility:

4.1.1 Large Distinguishable Icons:

Icons must be easily recognizable and large to increase readability and so they are easier to press.

4.1.2 Large Text:

Essential text for navigation and using features will be large and easily readable, as our target audience is people with visual impairments.

4.1.3 Readable Color Scheme:

Colors provide sufficient contrast while remaining pleasing and reducing strain on the eyes.

4.2 Simplicity:

4.2.1 Simple Menus:

Minimal number of menus and options to reduce confusion. Intuitive layout that is consistent with iOS operation. There will be a maximum of three layers of menu depth to keep things simple. Our version one has only two layers of depth.

4.3 Functionality:

4.3.1 Book Storage:

Books will be saved as a resource file inside the application. We will have a special folder for them. They will also be deleted from that folder.

4.3.2 Format:

All books will be downloaded as a .txt format and they will be parsed when read.

4.3.3 Text to speech conversion:

An Open Source library called OpenEars will be used to translate text to speech. This library must have easily recognizable speech and translate the speech in a timely manner. Under a second for starting the translation would be adequate, and speech that is recognizable by the majority of Canadian English speakers would be sufficient.

4.4 Stability:

SpeakRead must not crash iOS under any circumstance. This can be a problem when an incoming call is received by an i-device, since SpeakRead will be using the audio output. SpeakRead must accommodate the incoming call and pause its function to allow

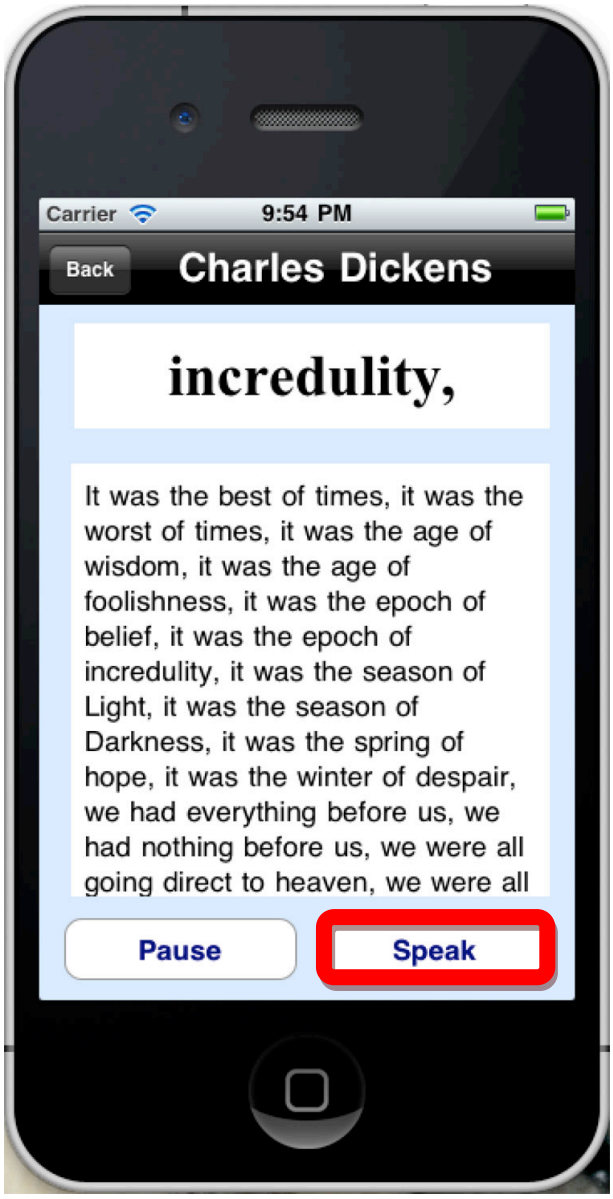
5 Tutorials

5.1 Opening a Book

- Press Book from the Main Menu
- Version One Preloads a text except for demonstration purposes.
- You are now in the Reading Menu

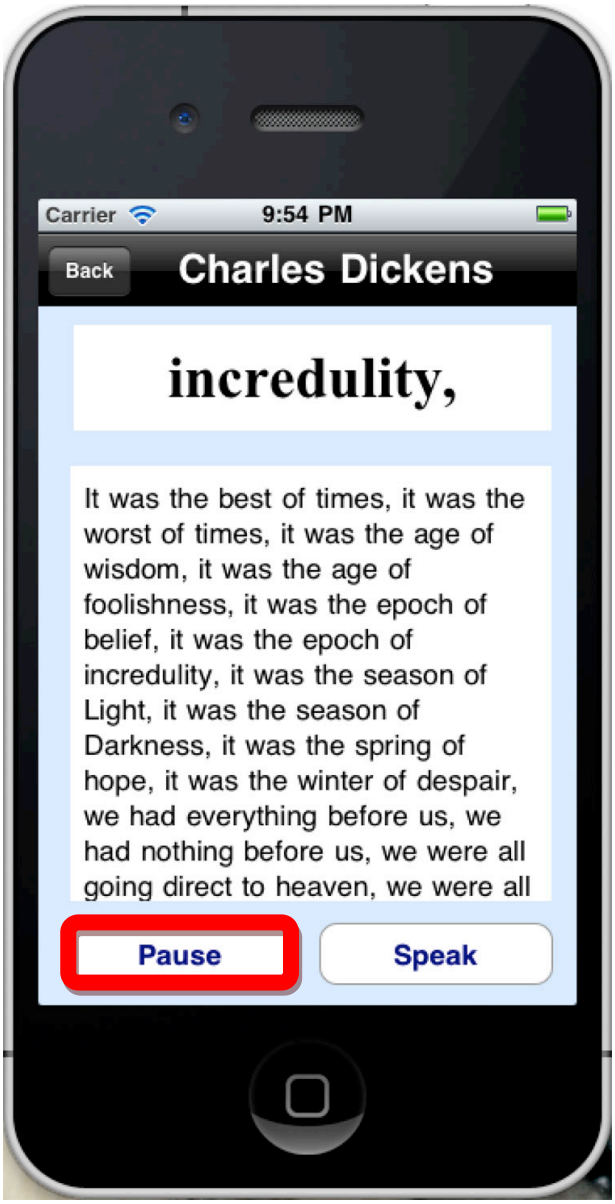
5.2 Starting Audio Assistance

- Press the Speak button at the bottom right to start Audio Assistance.
- Listen to the book being read to you through the speakers or headphones
- The current word will be displayed at the top of the screen and magnified so you can read along.



5.3 Pausing Audio Assistance

- Press the Pause button at the bottom left to stop Audio Assistance.
- Audio Assistance will stop reading at that point. If you want to continue, press the speak button again to resume from the same spot.



5.4 Going back to main menu

- From the Read Menu, press the back button.
- You will go back to the main menu, where you can choose web access in future versions.

6 Glossary:

Audio Assistance: Reading words to user through the speaker or headphone to assist users using audio.

Books: Free public domain books that are found online in plaintext format. These books have had their copyright expired and can be used for free by anyone.

Book Mark Memory: Ability of our application to remember the last place user was on in their last session, and load that spot again on their next usage.

iEnable: Name of our Company specializing in accessibility applications for iOS.

iOS: Apple Inc.'s operating system for their mobile devices, such as the iPod Touch, iPhone, and iPad.

Visual Assistance: Displaying enlarged words to assist users with reading visually.

Visual Impairment: Users who have difficulty reading small text, but are still capable of viewing large text and buttons.

Selection Maker: The highlighted word in the Read Menu that can be moved around by the user. Word that is highlighted is displayed in the text enlargement box at the top of the document. Highlighted word is starting point for Audio Assistance.

iSpeakRead: Name of our application which assists visually impaired users in reading.