Project Proposal

Title	Thai Braille iPhone Application
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Semester / Year	Semester 2 Year 2/2554
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Description

This project is concerned with developing an iPhone application that allows blind people to input Thai and English text by touching the screen in the same way they would write Braille [1]. When used with the Voice Over [2] feature on iOS, a blind person can use this tool to send emails or text messages.

Background

Programmers and software developers in Thailand often do not think about the UI or accessibility [3] needs of disabled people. Now some people know about the accessibility features in iOS [4] devices, they are impressed by it and realize the true importance of technology is to make it universal for everyone to access and use mobile devices, even the disabled.

After discussions with the advisor, the author came up with the idea to make Thai Braille app for blind people to use to type text messages by touching like they are writing Braille inspired by a blind woman, the advisor's friend.

The concept of typing in Braille requires the user to tap the screen at least 3 times to represent the 6 dots of a Braille character. A Braille character is 2 columns and 3 rows, and each tap assigns a value to one row. When you finish 3 rows the value will pass to a matching algorithm to find the letter by the number of touches (ex. A is 133). Finally the letter is shown and read aloud to the user (using Voice Over screen reader technology).

Objective

- To develop Thai Braille application on iOS for blind people.
- To learn more about iOS and Accessibility.

Scope

- The users of this app will mostly be blind people who use iPhone.
- This application is only for iOS devices.

Methodology

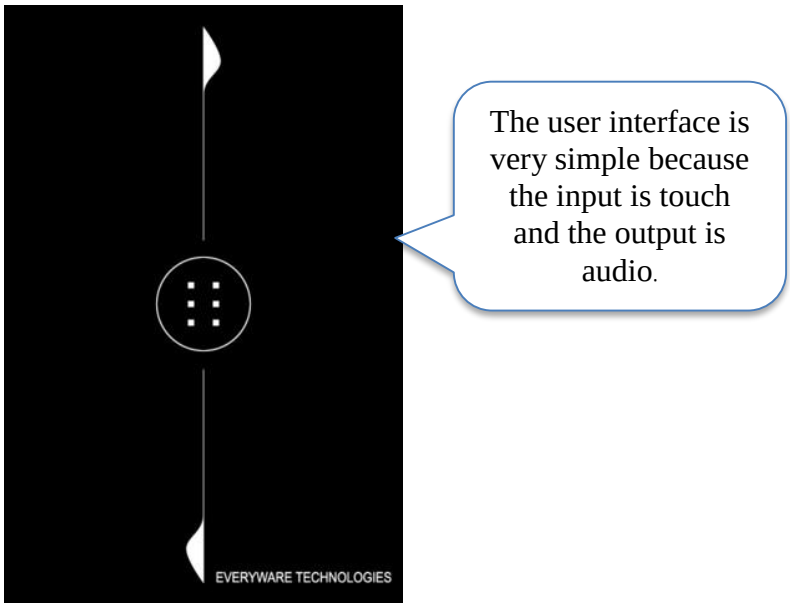
The requirements for this project are Xcode version 4.2[5] and iOS SDK 5.0[6] with Objective-C language to develop the app and include audio API.

There will be a meeting with the adviser every week on Monday and Tuesday to show the process and discuss about the forward of the app (structure, design, etc.). After the app development is finished, it will be test with real blind people and submit to App Store.

Related Research (The examples of similar applications)

TypeInBraille By EveryWare Technologies

TypeInBraille [7] allows user to write in Braille on their iPhone. The user can enter a character through its Braille representation using a sequence of three simple gestures. Each gesture is used to enter one of the three rows of a braille character.



The features of this application include: type notes using your fingers to enter Braille dots; edit the text (delete, select, copy, cut and paste) and navigate the text (character by character, word by word). You can send and copy your notes: via e-mail, text message, or to the clipboard and paste in any application (e.g., notes).

Multitouch Braille Prototype [8]

Technical Documentation and Algorithm Design

Darren Lunn and Simon Harper
Web Ergonomics Lab School of Computer Science University of Manchester UK

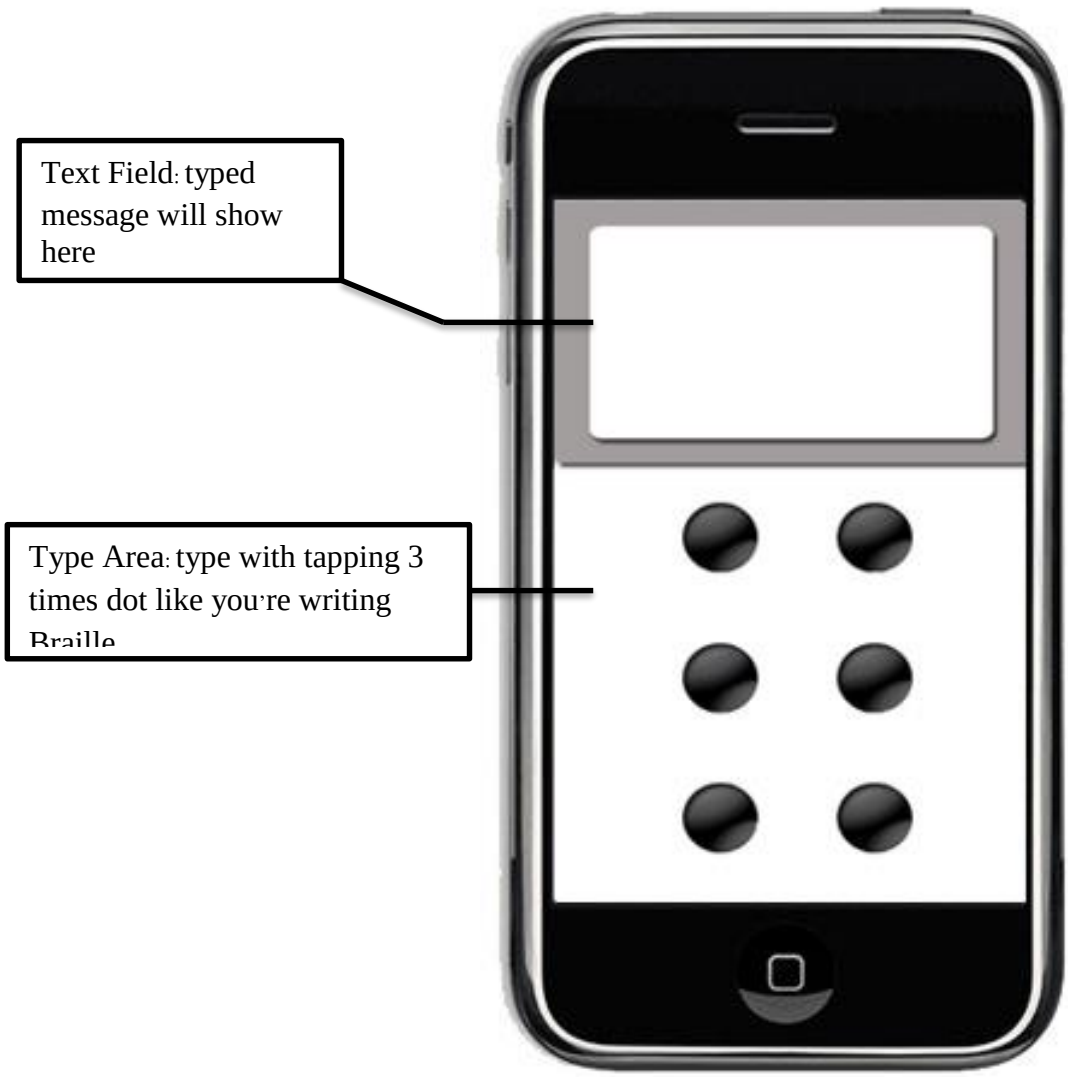
Multitouch [9] Braille Prototype is the project that aim to research about how to write Braille, by simple multi-gestures on the Trackpad [10] by separate the trackpad into 6 cells to be a Braille keyboard layout. And another thing is to use a simple multi-gestures to launch and control application on the computer.

Initial Design

App Icon:

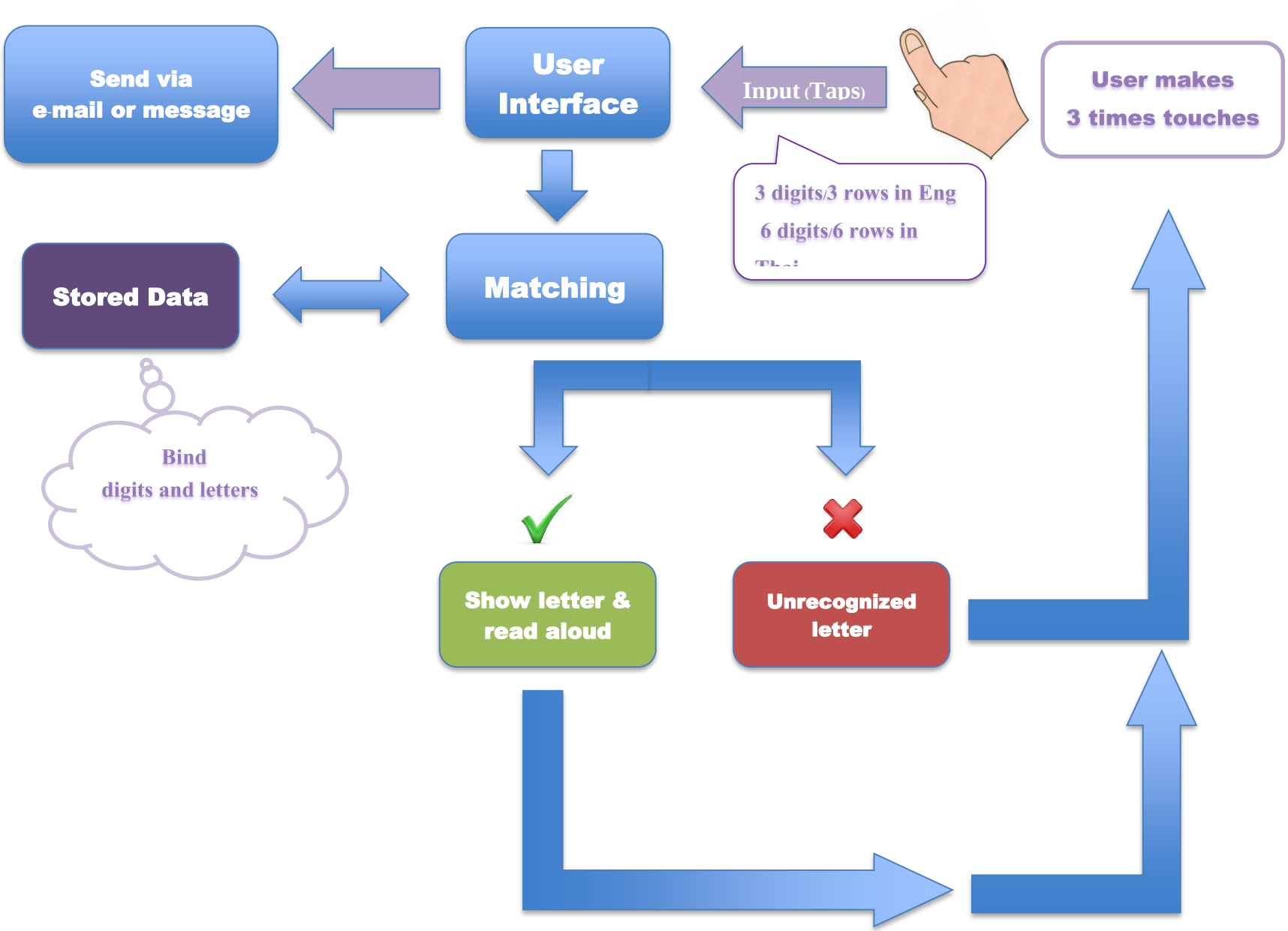
The icon is means eye of the blind people.

User Interface: the user interface may look simple because mainly focus on touch and Voice Over.



Another feature is assign to use by touch and will show you on next page.

Implementation



Sample of uses:

Type: tap the screen 3 times by use 1 or 2 or 3 fingers each time (3 fingers is represent blank dot)

Example: Tap 1-3-3 is "a"

Delete: swipe 1 finger to the left is delete 1 character each time

Reference

[1] Braille, URL: http://en.wikipedia.org/wiki/Braille
[2] Voice-Over, URL: http://en.wikipedia.org/wiki/Voice-over
[3] Accessibility, URL: http://en.wikipedia.org/wiki/Accessibility
[4] iOS, URL: http://en.wikipedia.org/wiki/IOS
[5] Xcode, URL: http://en.wikipedia.org/wiki/Xcode
[6] iOS SDK 5.0, URL: http://developer.apple.com/technologies/ios5/
[7] TypeInBraille, URL: http://www.everywaretechnologies.com/apps/typeinbraille
[8] Multitouch Braille Prototype, URL: http://wel-eprints.cs.manchester.ac.uk/133/
[9] Multitouch, URL: http://en.wikipedia.org/wiki/Multi-touch
[10] Trackpad, URL: http://www.apple.com/magictrackpad/