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| **Central Wayfinder** |
|  |
| Technical Specifications |

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|  |
| **Date** |
| 12/08/2015 |
|  |
| **Version** |
| 1.0 |

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# 1 **Introduction**

Central Institute of Technology has a varied student base ranging from local to international students. Central is always looking for ways to expand and increase their target audience as to provide the maximum amount of students with industry-level qualifications, this leads to an increase in the number of rooms, buildings and campuses. Taking this growth into account, having an application to help students (as well as staff members) find their way around the campuses would be of great help.

The concept of the Central Wayfinder application was brought to the Information Technology department as a project for the students. The objective is to develop a quality, fully-functional application for all Central students to use in order to navigate around the campuses alongside the aid of in-building signage. In order to help the highest amount of students possible, the application is going to focus on ease of use as well as clear instructions to direct the user to their destination

The creation of this product will give new students an enhance experience at Central Institute of Technology. The development is set to start on July 28th, 2015 and to be completed by October 30th, 2015. User acceptance testing will follow the completion of the development, a period in which all issues should be reported in order to be addressed accordingly by the development team. This is also going to be the final project for the students of the Diploma of Software Development course.

## 1.1 Revision History

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| --- | --- | --- | --- |
| **Date** | **Authors** | **Reason** | **Version** |
| **30/07/2015** | Gustavo Tavares Dias | First Draft | 0.1 |
| **06/08/2015** | James McNeil | Review | 0.2 |
| **12/08/2015** | Lucas Angelon Arouca, James McNeil | Review | 1.0 |
| **24/11/2015** | Lucas Angelon Arouca,  James McNeil | Review | 1.1 |

## 1.2 Intended Audience and Reading Suggestions

The intended audience for this document is the project team (Development and Design teams), the clients (Neil Fernandes, Rob Morgan and Ann Bonna) as well as all other relevant stakeholders. Throughout this document the project will be broken up into sections for: Project Description, Functional Requirements, External Interface Requirements, Non-Functional Requirements and Other Requirements. There is also a glossary of common terms found throughout the document.

## 1.3 Project Scope

The goal of the Central Wayfinder application is to assist directing new students and staff in getting directions to different locations in the multiple campuses belonging to Central Institute of Technology. The current phase of the project is focusing solely on the Northbridge Campus. This will be especially important to students speaking English as a second language as the app will focus on using maps and visual cues, avoiding written directions. There will also be an accessibility option to show paths using lifts and ramps.

The software will be made available on both Android and iOS platforms to cover the vast majority of mobile device users.

The initial target audience for the application includes students and staff members located in the Northbridge Campus. Other campuses will be added in future versions. The development of the application is set to be completed by October 30th, 2015, with several weeks after this date set aside for user acceptance testing, troubleshooting and deployment. Due to the nature of the approval of iOS applications, extra time may be required to deploy the Central Wayfinder software to the Apple App Store.

# 2 Project Description

## 2.1 Product Perspective

This application will make it easier for new students to Central Institute to find their way around campus. It will give students directions to a class that they search for, showing them relevant photos of the campus for clearer directions. The app will be released on the App Store (iOS) and on Play Store (Android).

## 2.2 **Product Features**

The Application will allow the user to search for a room or location on the Central Campus and give directions to that location. The user will choose to start from the current location determined by the devices GPS or choose a predetermined starting location. A list of directions and a map will be displayed to the user. The Central Way finder will be as simple and minimalistic as is possible.

## 2.3 Operating System

Any phone that supports the Android operating system version 4.0 (Ice Cream Sandwich) or greater will be able to install the application and run the application from their device. Any phone that supports iOS 6 or later will be able to install and rum the application on their device .

## 2.4 Constraints

Central Wayfinder is designed to run on iOS and Android devices and so must be able to work on hardware of typical devices. Devices running the Central Wayfinder app will require an Internet connection to download. The design and code must be compact to keep data usage at a minimum. Central Wayfinder must be able to run correctly on the most recent versions of the two Operating Systems and be compatible with operating systems chosen (see 2.3).

## 2.5 User Documentation

There will a be a help screen on both versions of the application to better explain how to use the application to new users. The application will have a page on the central website containing FAQ’s, help similar the help on the application itself and also links to download from the Play Store or the App Store.

# 3 Functional Requirements

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| --- | --- | --- | --- | --- |
| **ID** | **Name** | **Description** | **Priority** | **Status** |
| 1.0 | Mobile Application | The Central Wayfinder project shall be developed for the mobile environment. | High | Accepted |
| 1.0.1 | Android Version | Targeting the 23rd API and having the minimum requirement of the 15th API of the Android operating system. | High | Accepted |
| 1.0.2 | iOS Version | Targeting the 9th version and having the minimum requirement of the 8th version of the iOS operating system. | High | Accepted |
| 1.0.3 | Splash Screen | Containing the logo of the company. | High | Accepted |
| 1.1 | The Flow | The user shall be provided with the ability to navigate to a destination. | High | Accepted |
| 1.1.1 | Campus Selection | The user shall be able to select the campus which they would like navigation routes for. | High | Hiatus |
| 1.1.2 | GPS Location | The user’s location shall be automatically detected through the use of GPS technologies if the features are available. | High | Accepted |
| 1.1.3 | Manual Location | The user’s default location will be selected depending on the campus if GPS technologies are not available. | High | Accepted |
| 1.1.4 | Destination Selection | The user shall be able to select their destination through a search input. | High | Accepted |
| 1.1.4.1 | Quick Selection | The user shall have common areas to select from a dropdown list. | Medium | Hiatus |
| 1.1.4.2 | Accessibility Option | The user shall be able to get directions using the accessibility features available at the campus. | High | Accepted |
| 1.1.5 | Navigation Directions | The user shall be given directions inside the building to reach their destination through map images. | High | Accepted |
| 1.2 | About | Containing information about Central Institute of Technology and the personnel involved in the development of the project. | High | Accepted |
| 1.3 | Terms of Service | Containing information about the legal agreement binding the use of the application and the website. | High | Accepted |
| 1.4 | Privacy Policy | Containing information about the use and storage of any user data within the application and website. | High | Accepted |
| 2.0 | Website | Regarding the Central Wayfinder application. | High | Accepted |
| 2.0.1 | Description | The application description. | Low | Accepted |
| 2.0.2 | Images | Screenshots of the application shall be displayed on the website. | Low | Accepted |
| 2.1 | Links | Links to other pages. | High | Accepted |
| 2.1.1 | Google Play | Linking to the application page on the Google Play Store | High | Accepted |
| 2.1.2 | App Store | Linking to the application page on the Apple App Store. | High | Accepted |
| 2.2 | Web Portal | Containing instructions and information on how to add resources to the application. | High | Hiatus |
| 2.2.1 | Adding Locations | The user shall be able to add new campuses. | High | Hiatus |
| 2.2.2 | Adding Maps | The user shall be able to add new maps. | High | Hiatus |
| 2.2.2.1 | Adding Rooms | The user shall be able to define rooms within maps. | High | Hiatus |
| 2.2.2.2 | Adding Routes | To be done automatically through the system. | High | Hiatus |
| 2.2.2.3 | Changing Rooms | The user shall be able to edit the status of a room. | High | Hiatus |

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# 4 External Interface Requirements

## 4.1 User Interface

The UI will be designed to be simple and intuitive to cater for new students with out a full understanding of English. The Wayfinder application will display a map and a list of directions with relevant photos to help the user. The UI will be designed, where possible, to the current standards set forth by Google and Apple.

## 4.2 Hardware Interface

The Central Wayfinder application will be designed for both Android and iOS devices. An Internet connection will be required to download the application from the respective application stores (App Store and Play Store), and a mobile network connection (3g,4g) or GPS will be required for full functionality although an offline function will still be available. As much of the calculations as possible will be done on the web service end of the application so minimal hardware is required on the device.

Devices used must be able to run the required operating systems (see 4.3 Software Interfaces and 2.3 Operating Environment).

## 4.3 Software Interfaces

Android operating system version 4.0 (Ice Cream Sandwich) or greater will be needed to install the application and run the Android application from their device. iOS 6 or later will be able to install and rum the iPhone application on their device . Both operations systems will need to support network connection and GPS for full functionality.

# 5 Nonfunctional Requirements

## 5.1 Performance Requirements

For full functionality a solid network connection and GPS are needed. Any Android device capable of running Android 4.0.3 (Ice Cream Sandwich) and iOS device running iOS 6 or later will be able to run Central Wayfinder. Running as much of the calculations as is possible on the web service will enable the application to have as minimum hardware requirements as possible.

## 5.2 Safety Requirements

There are no safety requirements with this application, other than any normal hazards of a mobile device. The only hazard is a user using the device when they should not be, such as while driving.

## 5.3 Security Requirements

The Central Wayfinder application will not require a password or store any personal information.

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## 5.4 Software Quality Attributes

As both the Play Store (Google) and App Store (Apple) have approval processes prior to uploading applications, both code and design aspects should adhere to the recommended design and coding standards suggested by both Google and Apple.

# 6 Other Requirements

## 6.1 Data Requirements

The Central Wayfinder Application stores no user information on the device.

# Appendix A: Glossary

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| **Term** | **Description** |
| Stakeholder | Any person with an interest or concern in the Central Wayfinder App. |
| GPS | Global Positioning System |
| UI | User Interface |