**Software Requirements Specification**

for

**UDiscover Android Application**

**Version 1.0 approved**

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# **1. Introduction**

## **1.1 Purpose**

The purpose of this document is to provide a comprehensive description of the first version of the entire UDiscover Android Application. It will explain the intent, features, and functions of the app, the user interface. It will list what the app must do and how it will respond to user input.

## **1.2 Document Conventions**

This app is a conjunction of many high level requirements. The big requirement is that the app is able to show a map, and use a GPSs system based on the map that is used in this app.

## **1.3 Intended Audience and Reading Suggestions**

This document is intended for the team supervisor, the developers of the application, and any testers. It will be proposed to the supervisor for her approval. It will be available to Ursinus College and its Admission Office and Residence Life Office upon request.

The SRS is organized by overall details and then specific details about specific components of the application.

For testers, it is suggested to read the requirements and ensure they are being met without error.

For any general user, reading 2.4 (Operating Environment) would prove useful since it describes the currently supported platforms and versions for the UDiscover application.

## **1.4 Product Scope**

The *UDiscover* application will be a supplemental introduction for students new to the Ursinus College campus. Its goal is to facilitate the transition from the high school environment to that of the Ursinus College campus by familiarizing the student with key locations on campus. By providing a portable and simple way of navigating the campus, this system will ease new students and improve their experience.

Specifically, the system will provide a series of selectable services to the user. These services include a guided tour of the campus, directions to given locations on and around campus, and valuable information on given locations on and around campus.

## **1.5 References**

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

# **2. Overall Description**

## **2.1 Product Perspective**

This user app includes some function that that is a follow-on member of a product family. For example, the components of Google Maps may be used for the GPS function for the tour guide. The function of creating connections may relate to functions of finding users, adding users and messaging, possibly based on the Ursinus College user domain.

## **2.2 Product Functions**

The major functions of the UDiscover app will include:

* The ability to have a personalized tour based on user preference, such as; class schedule tour, main locations tour, art tour, weekend recreation tour
* The ability to query the app for directions to a given location on or around campus
* The ability to query the app for information regarding a given location

## **2.3 User Classes and Characteristics**

There are three primary user classes that are anticipated to use this product. These classes include:

* Prospective students
* First-year students
* Upperclass students

The First-year student user class will likely use the app the most, but will not have any additional characteristics relative to the other two classes unless reach goals can be achieved, such as the ability to login.

## **2.4 Operating Environment**

The software application will operate on the Android platform. It will be based on a version of Android 4.0 Ice Cream Sandwich that allows users with older phones to use it while still being forward compatible with newer Android Operating systems.

## **2.5 Design and Implementation Constraints**

The primary constraint of the UDiscover app is the interface with Google Maps. The UDiscover app will rely on the ability to utilize the device’s GPS to find directions on Google Maps.

## **2.6 User Documentation**

The instructions for using the application will be provided through the interface in the application itself. Users could contact the Ursinus College Tech Support or the original developers for help with downloading the app. If needed, a full and simple guide will be created and sent to the Ursinus College web development to maintain on the website.

## **2.7 Assumptions and Dependencies**

The project depends on the Ursinus College campus geography, so if a new building is added or renovated or a new entrance is added, the images/panoramas used in the application might be incorrect and all potential entrances may not be accounted for or described.

# **3. External Interface Requirements**

## **3.1 User Interfaces**

The user interface will be entirely through touch. Specifically, the user will interact with the software by touching the screen of their device according to what they want to happen. The GUI will consist of several menus that lead to individual services.

The main menu, the one that appears when the app is first opened, will contain a list of the three main functionalities; “Get Tour”, “Get Directions”, and “Get Information”.

When one of these buttons is interacted with, additional menus will appear until a final page has been reached and the service can be provided appropriately. During a tour or quest to find a destination, Beary the Companion Bear will be able to provide information and trivia if the user interacts with him.

## **3.2 Hardware Interfaces**

The hardware interface includes:

* The use of an Android OS powered phone with Android 4.0 Ice Cream Sandwich
* The use of the touch screen functionality of the aforementioned phone

## **3.3 Software Interfaces**

The UDiscover app will have a software interface with Google Maps, allowing for in-app navigation. The data being sent to Google Maps will be locations, querying for directions. The data returned to UDiscover will be the directions to the given location.

## **3.4 Communications Interfaces**

The UDiscover app will have communications with the user’s device via the GPS of said device. It will use this GPS and communicate with Google Maps to provide relevant information.

# **4. System Features**

## **4.1 Navigational Pathfinder**

4.1.1 Description and Priority

The Navigational Pathfinder will utilize GPS location and a navigational functionality to provide a map display of the current location and the directions to the desired destination. This will be used only to provide the user with directions to a single location, as opposed to a whole tour.

This is one of the main functionalities of UDiscover and therefore has high priority.

A component that uses GPS to navigate has higher risk given the limited timeframe and potential complexity.

4.1.2 Stimulus/Response Sequences

* The Navigational Pathfinder can be selected directly from the main menu, provided the GPS is enable on the user’s device
* When the Navigational Pathfinder is first opened, user will be prompted with a list of location categories
* Location categories include; academic, recreational, residential, dining
* Each category will be represented by an expandable menu, each containing the appropriate list of locations
* User will then select a location from any given list from any given category
* Navigational Pathfinder will then provide a map with GPS directions

4.1.3 Functional Requirements

REQ-NAV-1: The system shall check that GPS is enabled on the device

REQ-NAV-2: The system shall notify user if GPS is disabled

REQ-NAV-3: The system shall display a series of location categories

REQ-NAV-4: The system shall allow user to expand each of the categories

REQ-NAV-5: The system shall allow user to select a location from a category

REQ-NAV-6: The system shall display directions to the selected location

REQ-NAV-7: The system shall indicate accessibility of the desire location

## **4.2 Virtual Touring**

4.2.1 Description and Priority

The tour feature contains different types of tours such as general tours and housing tours. These tours will utilize GPS and navigation to display a map and directions to each location in the tour. Every location of the tour will represent a stage. Every stage will have “Next Stage” and “Previous Stage” buttons to either progress the tour or return to a previously visited location.

The feature is of high priority. It introduces freshman and other users to the Ursinus College campus, though the Pathfinder feature is more important when it comes to getting immediate directions to a specific location on campus..

4.2.2 Stimulus/Response Sequences

* The Virtual Touring can be selected directly from the main menu, provided the GPS is enable on the user’s device
* The Virtual Touring menu will contain a list of types of tours
* These tours will include; Class tour, art tour, weekend tour, housing tour
* User will select a tour
* Class tour will provide another menu for selecting the locations of the user’s classes
* The other three tours will begin immediately
* A map with directions will then be displayed

4.2.3 Functional Requirements

REQ-TOUR-1: The system shall display a list of available virtual tours.

REQ-TOUR-2: The system shall allow the user to select a tour

REQ-TOUR-3: The system shall allow the user to pause the tour

REQ-TOUR-4: The system shall allow the user to resume the tour at the point it was paused at

REQ-TOUR-5: The system shall allow the user to input information regarding class schedule

REQ-TOUR-6: The system shall display the correct tour

# **5. Other Nonfunctional Requirements**

## **5.1 Performance Requirements**

There are no major Performance Requirements. The System must react within 10 seconds for the user.

## **5.2 Safety Requirements**

REQ-SAFE-1: The system shall provide safety warnings regarding its use

REQ-SAFE-2: The system shall have information about emergency call boxes and their locations.

## **5.3 Security Requirements**

REQ-SEC-1: The user must give permission to use their location in the GPS feature.

## **5.4 Software Quality Attributes**

* The application will have reusability in that it would provide different types of tours such as a general tour or a housing tour.
* The application would need to be maintained if it is in continual use in order to account for new buildings and other features on the Ursinus College campus.
* The application shall provide efficient directions that do not stray from the path to the destination.

## **5.5 Business Rules**

There are no specific business rules for the UDiscover application.

# **6. Other Requirements**

There are no further requirements for this software requirements specification.