Requirements Document

for

CSU Campus Assistant

prepared by

Group 2

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v2.1

**Introduction**

* **1.1 Purpose:** The purpose of this document is to define the requirements necessary for the CSU Campus Assistant. This requirements document is intended for all interested parties, including, but not limited to, the development team, the lead consultant, and users.
* **1.2 Scope:** The scope of this document includes everything from functional and nonfunctional requirements of the app, to interface requirements and hardware requirements. Also included, are the skills required by the user in order to use the app.These requirements were collected by the development team, and overseen by the lead consultant. Minor consumer input was collected, and considered as well.

1. **General Description**

* **2.1 Product Functions:** This app will provide users with insight about the facilities located on Columbus State University’s Main Campus. This insight includes: directions to buildings, user ratings of facilities, handicap accessibility information, news and events, and a brief explanation of the function of the facilities. The information will be shown in the form of text and icons. Users’ ratings will be provided in the form of color on the icons indicating the general consensus of
* bathrooms
* study areas
* dining options
* areas ideal for taking a nap between classes
* sports
* internet strength
* handicap accessibility
* More areas of interest can be added as they are made aware to the development team.
* **2.2 Similar System Information:** Data required for the app to display the correct information about points of interest will come from an Amazon Web Services relational database. One feature of the CSU Campus Assistant ( Get Me There) will rely on Google’s location software.
* **2.3 User Documentation:** Upon opening the application, the user will be presented with the choice to view a tutorial of the Campus Assistant, including, its primary features, how to use them, and generally how to get the most out of the assistant. There will be clear and concise instructional slides in the Google Play page of the application to give potential users a preview of the assistant. In addition to this, there may be an educational video posted through some 3rd party service demonstrating the campus assistant in action. These slides and video will highlight primary features and effectively present the user with a quick overview of the product. This will also serve as a form of advertising as well.
* **2.4 General Constraints:**
* time constraint in the form of project deadline (May 3rd ish).
* limits of Android Studio IDE.
* hardware platform constraints - User must be running at least Android v4.0 (Ice Cream Sandwich).
* access to location software
* access to data network/ wi-fi

**3. Functional Requirements**

* **3.1 Building a Main Menu**
  + **3.1.1 Description:** The main menu of the Campus Assistant will be composed of several options:

- how to use the application (see section 2.3)

- facilities and ratings

- ‘Get Me There’ tool

- map

- news

Each of these options will take the user to a new page that will display the appropriate information. These options should be easy to read, and appear clickable to the user. The main menu needs to perform like an interactive table of contents, meaning it should outline the features of the app as well as provide navigation to these features.

* + **3.1.2 Criticality:** This feature is very critical. Without it there will be no navigation to the functions of the app.
  + **3.1.3 Technical issues:** Unforeseen constraints of the IDE.
  + **3.1.4 Schedule:** This requirement will be undertaken at an early stage in the creating process of this app. All other features of the C.A. will be accessed from the main menu,so it is essential that the menu be one of the first features to be built.
  + **3.1.5 Risks:** The risks are very minor for this requirement. There’s no reason why the IDE should not be capable of achieving this desired functionality.
  + **3.1.6 Dependencies with Other Requirements:** The main menu will be dependent on the hardware requirements being met, in order to run the app. This requirement will likely be a dependency for every other requirements.
* **3.2. Facility Information Table**
  + - * + **3.2.1 Description:** This requirement must display a table that is composed of several columns:

- facility name

- quality of bathroom rating

- quality of study environment rating

- quality of sleeping environment rating

- quality of dining environment (if applicable) rating

- quality of handicap accessibility

Each row (representing a facility) must be clickable, so that the user can be taken to the facility’s information page, which will provide more detailed information about the location.

* + **3.2.2 Criticality:** The purpose of this table is to show an overview of the campus. Technically speaking, it is the map to all the individual facility pages. Ratings for each facility will be found here as well giving users a central place to find out more about the campus and if they would find corresponding resources helpful. Without this page the app would provide only general information about the building such as its name, with no facilities or or other information specified; the information table is critical to the application.
  + **3.2.3 Technical issues:** The construction of a grid/ table system in the IDE. The construction of a database to hold all the information to display in the table system. Developing a way for the users change to the rating of a facility to be acquired in real time (requires a database). Creating a map for the links on the table.
  + **3.2.4 Schedule:** This will likely be the second requirement satisfied by the development team, preceded only by the main menu.
  + **3.2.5 Risks:** The possibility of not being able to display icons and text in a grid/ table. If this cannot be achieved, a new IDE will likely be required, as this is the primary feature of the app.
  + **3.2.6 Dependencies with other requirements:** This requirement is dependent on the main menu to make it accessible to the user. If a database is used to store the data about the facilities, then this requirement will be dependent on the communication with that database.
* **3.3 Individual Facility Information**
  + **3.3.1 Description:** This is where the user can view more information about a specific building on campus. This feature needs to show a picture of the front of the building describe the main function of the building (classes, offices, food, etc.) show all applicable ratings to the building (study, sleep, etc.) Contain a set of instructions for finding handicapped entrances
  + **3.3.2** **Criticality:** This feature is very critical, as it is going to be one of the main reasons why people use this app. Why? Because this is where the ratings are. This is where the user will be able to make their decision about where to go eat, sleep, or study.
  + **3.3.3** **Technical issues:** The potential for technical issues is rather high here. That is the case when a feature has dependencies, and a lot of different information coming together. Information that the app displays will be displayed here.
  + **3.3.4 Schedule:** This will be the last of the critical features to be built. This page will be built after the main menu has attained full functionality, and the facility information table (functional requirement # 2).
  + **3.3.5** **Risks:** Since the potential for technical issues is high, the risk is high as well. However, with our timeline, and ability of our group members, this feature should come together fine.
  + **3.3.6** **Dependencies with other requirements:** This requirement is dependent on the information that the app uses, whether it is a database, or an array in the app itself.
* **3.4 Get Me There**
  + **3.4.1 Description:** ‘Get Me There’ is a feature that will use Google’s location

software as well as the device’s camera to display a directional arrow over a live camera feed. The directional arrow will always point toward the user’s destination, and will be accompanied by a display of the total distance away from the destination.

* + **3.4.2 Criticality:** This is the least critical feature in the current development phase.
  + **3.4.3 Technical issues:** Getting the arrow to display over the camera feed. Mapping the points on campus that will be destinations.
  + **3.4.4 Schedule:** This feature will be developed last.
  + **3.4.5 Risks:** This system could be used by entities not associated with the university, and could possibly be used for activities with ill-intended purposes(criminal activity).
  + **3.4.6 Dependencies with other requirements:** This requirement is dependent on the main menu to make it accessible to the user. It also may be accessible from individual facility pages. If a database is used to store the data about the facilities, then this requirement will be dependent on the communication with that database.   
    - * **3.5 Map**
        + **3.5.1 Description:** The map will simply be a picture of a map that users can zoom in on. This feature should

- be accessible from the main menu

- display all the buildings found on Main Campus

- allow the user to zoom in on the picture by spreading their fingers, or double-tapping an area of interest.

* + - * + **3.5.2 Criticality:** This is not a very critical feature, however it could be very helpful to a user if they happen to remember the general area of the desired building, but want reassurance before embarking across the \_\_\_ acre campus.
        + **3.5.3 Technical issues:** It is highly unlikely that there will be any technical issues with this feature, as it is a very basic function.
        + **3.5.4 Schedule:** This feature should be built once the main menu has been constructed. It would be a prime candidate to serve as the test link for the main menu.
        + **3.5.5 Risks:** Risks of this app are the chance that the link to the page containing the map will not work, which is highly unlikely. It should not take more than an hour to build this feature, thus the risk of time loss is minimal.
        + **3.5.6 Dependencies with other requirements:** The main menu is the sole feature that the map is dependent on.

**4. Nonfunctional Requirements**

* **4.1 Performance**
* **4.2 Reliability**
* **4.3. Data Integrity**
* **4.4 Usability**
* **4.5 Scalability**
* **4.6 Serviceability**
* **4.7 Maintainability**
* **4.8 Availability**
* **4.9 Regulatory**
* **4.10 Security**

**5. Interface Requirements**

* **5.1 User Interface**
  + **5.1.1 UI** The user will interact with this app by touching the screen of their smartphone in various ways. The app should respond to taps, swipes, spreads, turns, and drags.
  + **5.1.2 GUI:** The GUI will look different throughout the different features of the

app.

**In all features:** There will be a main menu button present at the bottom of the app at all times. From the main menu, the user can get to any page they desire, so it is really the only button necessary. Any feature of the app is only two strokes away, minus the individual facility information pages.

**Main Menu:** The main menu will have a link to all the features of the app. Each link is accessible by a tap.

**Facility Information Table:** The facility information table will hold a link to each of the individual facility pages (accessible through tap). The facilities will be organized alphabetically. Not all the facilities will be able to fit on one page, so the user will have to drag the table down or up to access all the facility pages in the app.

**Individual Facility Pages:** The individual pages will hold information about the facility in text and icons. Each of the icons are tapable in order for the user to rate that aspect of the facility. There will also be a link to the “Get Me There” feature.

**Get Me There:** Get Me There will have a camera feed that has an arrow displaying the general direction and distance to a specific facility. There are two ways to enter this feature: from the main menu, or from an individual facility page. If the user enters the Get Me There feature from the menu, he will first be asked where he is trying to go before the camera feed is displayed. If the user enters the feature from the individual facility page, then the camera feed will automatically show where he is trying to go.

**Map:** The map will be an image that the user can zoom in or out on. The map used in the application is the same one from Columbus State’s website.