We are developing Floradex, a plant identification application for smartphones. It will allow users the option to identify plants through an interactive dichotomous key, a keyword search, or a photo submission system. We see hikers as our main users, as they may encounter plants while hiking that they would like to identify, either due to personal interest or for more practical needs (i.e. to find out whether any given plant is poisonous). We see a smartphone application as a more convenient tool than field guides or books with dichotomous keys, as many people already take their phones on hiking trips and it would ideally be easier to use for amateur hikers. We would also like to be able to respond to the needs of gardeners, botanists, and nursery employees, who may not need to identify a particular plant, but may still want to look up growing conditions for a certain plant or to help educate others on plants by browsing through and identifying the submitted plant photos.

We looked into eight similar products to see what had already been done well and on what sort of features we could improve. Each product that we looked at already had at least one feature that we were considering. Many of the existing products had very limited databases (either by location or category of plants), so we would like to make ours more extensive in order to appeal to the identification needs of more users. In addition, we found that several of the competing products were not very accessible to users without preexisting knowledge of plants, so we hope to make our product usable by people with different levels of expertise regarding both plants and technology. Through the aforementioned improvements, an added emphasis on an attractive user interface, and the use of quality photos of different parts and angles of each plant for clearer identification, we believe our product will be better equipped to deal with our users needs than existing products.

We talked to two students who were frequent hikers and plant enthusiasts. They both expressed an interest in our product, as they often want to find out more about local vegetation. We received validation on many of our preliminary requirements, such as the need for an intuitive step-by-step search with pictures to help identify specific characteristics, location based searches, and the ability to compare pictures taken by other hikers to clarify what type of plant you’re seeing. They also suggested some requirements that we hope to integrate, such as a social component in which a user can look up a plant to see a map of all the locations in which other users have seen that plant, the ability to search for plants by common nicknames, and a section on common uses and interesting trivia for each plant.

The key requirements we would like to satisfy, from highest to lowest priority, are:

* **Easy-to-use and accurate search function:** While “easy-to-use” is a vague term, we hope that by employing the three different search options, we will cover the needs of users of all different levels of expertise. The dichotomous key will ask users questions about a plant’s characteristics in a step-by-step fashion with pictures to clarify what’ s being asked, so as not to overwhelm users. The keyword search would allow users to search by name, color, location, or other characteristics. Users should also be able to upload a photo of the plant that they want to identify and will be notified when another user successfully identifies it based on the photo.
* **Informative and interesting fact sheets for each plant:** Customers should be able to get more than just the name of the plant as a result of their search. Fact sheets should include growing conditions, edibility, common uses, and pictures of the plant in different locations or from different angles.
* **Location-specific information for features:** The user should be able to narrow down searches by location, which should make the search more accurate and less overwhelming. Users should also be able to see what plants other users have seen in their location, or in what location they will be able to find a specific plant.
* **Capability to “save” plants that a user has seen or is growing:** Users will be able to maintain a list of plants that they’ve seen or are growing. This would be part of the user’s social profile.
* **Uncluttered forum and identification pages:** The submitted photos should be laid out in such a way that they are easy to browse through, so that users feel more comfortable trying to identify them.
* **Interaction with other users:** This is a low priority feature, but an added social aspect would make our product stand out more from existing products.
* **Goal-setting capabilities:** Users would be able to create checklists of plants that they would like to see
* **Low price:** The app should definitely cost less than a field guide, and have a low enough cost that users are willing to buy it.

Because there are already products that use similar features, we believe that our product is feasible. All of the requirements use existing technology and, taken individually, are not extremely complicated.