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The selected UI/UX design request is for a mobile application that will make it easier for gardeners and horticulturalists alike to maintain optimal soil conditions for their plants. The application will show the moisture and nutrient levels of soil in real-time and monitor changes over time. It will inform a user when the target moisture content for a plant has been reached and alert them when the soil is too dry. The application will track the amount of three primary macronutrients in the soil that are essential for all plants to grow healthy; nitrogen (N), phosphorus (P), and potassium(K). It will graphically display this quantitative data in a customizable dashboard that the user will find visually appealing and easy to use. The intent of this application is to help growers keep their plants healthy. A user of this application will be able to adjust their watering and feeding routine to meet the specific needs of their plants. The priorities of the application are for it to keep track of moisture and nutrient levels and to present data in a meaningful way to users so they can better respond to the needs of their plants.

Two competitive applications that have similar functionality to the selected mobile application design request are Flower Care and Gardner Manager : Plant Alarm. Both applications are rated “E” for everyone, however, they are geared toward specific individuals. Flower Care is intended for consumers that have purchased one or multiple associated sensors that are inserted into soil and transmit data on moisture, temperature, fertilizer, and sunlight to the application through Bluetooth (Beijing HHCC Plant Technology Co., Ltd., 2021). Gardner Manager : Plant Alarm is an application only available on Android operating systems and requires a user to manually enter data into the application to track the watering and fertilizing of plants (LemonClip, 2022). Demographically, these applications are targeted at any culture and age group that has a desire to improve the health of their plants, but each has constraints that limit their accessibility and usability even though they available internationally.

Both applications have a purpose of helping users take better care of their plant friends by allowing them to track growing conditions and enter notes that capture their personal observations. They were designed to encourage productivity by reminding users to tend to their plants and as a learning tool to provide insight on plant health. Both applications provide graphical representations to show changes in a plant over time that can help a user understand how their care routine impacts plant growth.

After an initial evaluation, the Flower Care application is only partially effective and efficient to use. While the application allows a user to monitor moisture, temperature, fertilizer, and sunlight levels, it does not inform a user when conditions are unfavorable. Many reviews for the application have expressed the desire for notifications that alert a user when levels are unfavorable so that they can respond quickly. Currently, users must log into the application to know what the soil conditions are. If a user does not regular log into the application, they will not know when to attend to the needs of their plants. The dashboard limits a user’s view to the statistics of one plant at a time even though viewing many at the same time or on the same page could be more efficient. The Gardner Manager : Plant Alarm application is effective to use because it sends alerts to remind a user to water or fertilize their plants. It is not very efficient because a user must interpret and manually enter data which is susceptible to human error.

Both applications are safe to use in the sense that they provide users with the ability to make corrections if the wrong action is taken. Users can edit notes and change details about their plants if a mistake is made. The Flower Care application requires a user to store all information in the cloud which is great for data recovery. It also requires internet and extensive high-level phone permissions like full network access in order to be used. This can create an unsafe user experience if the cloud is ever compromised by hackers. The Gardner Manager : Plant Alarm does not require an internet connection to work and stores data on the user’s device with fewer permissions than Flower Care. I think that this provides a user with a safer experience than with the Flower Care application.

The applications are useful to a user, easy to learn, and easy to remember how to use. They have simple interfaces with mostly parameterized input. Users can easily understand what information they need to enter because of drop-down menus, descriptive labels, and units for measurements. Both applications allow a user to track the growing conditions of the plants they add to an inventory which is helpful. The Flower Care application only allows users to monitor specific plant types which hinders is usability.

Only the Gardner Manager : Plant Alarm application encourages social engagement by allowing users to share their plant notes with friends on social media or by text. Flower Care does not offer a feature to facilitate social exchange. Both application are designed to be emotionally engaging. Flower Care uses bright colorful imagery to create a fun experience for users. There are cartoon-like characters that represent moisture, temperature, fertilizer, and sunlight. Their faces change to reflect how well a plant is doing in that area. Gardner Manager : Plant Alarm allows users to add their own photos of plants and displays information in a feed can be scrolled through in a way that many people are already familiar with. The interfaces for both applications are aesthetically pleasing overall and not cluttered with information.

**Figure 1**

Flower Care Application

Graphical user interface, application

Description automatically generated

*Note.* Screenshot taken from the Google Play store to show the application’s interface (Beijing HHCC Plant Technology Co., Ltd., 2021).

**Figure 2**

Gardner Manager : Plant Alarm Application

Graphical user interface, website

Description automatically generated

*Note.* Screenshot taken from the Google Play store to show the application’s interface (LemonClip, 2022).

**References**

Beijing HHCC Plant Technology Co., Ltd. (2021). *Flower Care* (Version 5.6.6) [Mobile app]. Google Play.

<https://play.google.com/store/apps/details?id=com.huahuacaocao.flowercare&gl=US>

LemonClip. (2022). *Garden Manager : Plant Alarm* (Version 1.8.2) [Mobile app]. Google Play.

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