Instructor Review #2

sddec24-16

**Problem Statement**

1. Does your problem statement reflect important global, societal, human, environmental, or economic issues?

-Our primary focus is on the difficulties with growing plants, with difficulty varying between different types of users based on background knowledge.

-Additionally difficulty of time monitoring, measuring, and learning about plants

Global: We mention “large-scale farmers” in terms of verifying plant quality, but we could potentially elaborate.

Societal: We mention how many people have difficulties growing plants.

Human: Differences in background knowledge / experience

Environmental: While our device is tangentially related to environmental issues, we don’t actually seem to mention it explicitly, aside from helping prevent any issues with plant health. We could play up the positive environmental impacts more.

Economic: We do not mention any economic issues, aside from the time it takes to care for a plant. We could mention how it could also save money by preventing plants from dying due to non-ideal conditions. For the farmer side of things, we could mention how they could sample one of their crops to ensure the quality of their produce, which has economic impacts.

1. Does your problem statement reflect user needs?

-In relation to plant care, we do address user needs. Specifically, we focus on the time and knowledge required to care for a plant and how different users may have different concerns or desired outcomes from using a plant care device.

-Most of it boils down to simplifying required user knowledge of plants, and saving time by automating the watering and fertilization process.

**Users**

1. Have you identified new or different users for your project?

Our intended userbase is still pretty much the same, hobbyists who want a deeper look into what they’re doing or just people who don’t want to worry about a particular plant for an extended period of time.

1. What have you learned about your users' experiences, perspectives, or contexts?

We plan to get to “good enough”. This isn’t research equipment and our users likely aren’t interested in such. But it also needs to be durable and easy enough to use for someone who isn’t technically inclined.

**Requirements**

1. Are your requirements feasible?

The physical size requirements are far fetched and need to be revised our microcontroller and sensors are supposed to fit within the palm of the users hand. The power requirements being that our microcontroller needs to be powered by a 12v wall adaptor is feasible. The mobile app requirements are to read and access sensor data about their plant along with having an individual account for each user which are definitely feasible.

1. Do your requirements address the problem and user needs?

The requirements focus on a clear need for automated plant care with minimal user intervention. The device is designed to handle watering and provide sensor data to the users meeting the need for convenient and efficient plant care.

1. Are they specific and comprehensive enough?

The physical constrains are vague and likely need to be revised. The software requirements are more specific although they could still be more comprehensive.

**Engineering Standards**

1. Are the engineering standards you listed still applicable?

For the most part yes. We still intend to hit a water resistance rating of IP55 (i think) and utilize the various standards relating to wifi and power. Given the small scope of the project I think we have essentially abandoned OWASP standards. Primarily due to none of us being security focused and not really able to understand what they mean. We aren’t even bothering with HTTPS so security is not a priority.

1. How are you applying your engineering standards?

We are selecting parts rated for our desired standards. Waterproof enclosure and fittings and IEEE 802.11x compatible wifi module for example.

1. Are there additional standards that might be relevant? How will you apply them?

-Potentially standards on battery usage (if we do end up incorporating a rechargeable battery system). We would apply them by taking the standards into account when selecting a battery to use.

-Power subsystems, something about separation of analog GND and digital GND vs power GND.

-Something in relation to consumer electronics.

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-”Can you justify not using the specific standard” is a good way of determining whether to have a standard for the project or not.

-Scoping project: think about it as if it were are real product for end users, specifically hobbyists.

-Message professor when submitting revised design doc.