Proposal

Plant Power

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Submitted in partial fulfillment

Of the requirements of CSC-431

Software Engineering course project

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**Preface**

This is a proposal for the PlantPower project for partial fulfillment of the requirements of a Software Engineering course (CSC431) project in the department of Computer Science at the University of Miami.

This proposal provides the scope and context of the project to be undertaken. It details the intended user group and the value that the system will have to them.

The intended audience of this document is the course professor and teaching assistants so that they can determine whether the project should be approved as proposed, approved with modifications, or not approved

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**1.0**   **Overview**

***1.1.***            ***Purpose, Scope and Objectives***

The purpose of this project is to create a system of automatic tracking and logging of plant conditions - such as pH, temperature, humidity, and nutrients - which will be displayed to the actor in a user-friendly interface for further data analysis.

The intended user groups for this system will be hydroponic agricultural technology companies or small-scale individual gardeners. The actors can use it in their home or at a designated production site.

Arduinos and sensors would be needed for the hardware, and for the software we will utilize React to create a frontend web page, and for the backend we need SQL and python.

***1.2.***            ***Project description***

This project will create a web page user interface to provide a seamless communication model to visualize the data of plants.

The actor will be able to choose what graphs are most important to them and those are the ones which will be displayed on the primary screen.

The actor will also be able to personalize their plant profiles by adding a new one for each plant that they wish to grow. This will provide an aesthetically pleasing and straightforward way to know what plants are growing at all times. If the actor notices that something is wrong with a particular plant, they will be able to go back and check to see if there have been any fluctuations in the growing conditions.

We will be designing and constructing the web application ourselves that will house the graphs and plant profiles. We will use the web framework React for this.

The data collection will be facilitated by an Arduino microcontroller board with Arduino Create, an integrated online platform for writing Arduino code and configuring boards.