**Project Proposal**

**Project Area:** Remote Plant Monitor – IoT Home Automation

**Team Details:**

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**Project Overview:** The Remote Plant Monitor aims to provide an efficient and automated solution for monitoring and maintaining the health of houseplants. Utilizing IoT technology, this system will enable users to remotely monitor soil moisture, temperature, and humidity levels, ensuring optimal conditions for plant growth.

**Problem Statement:** Many plant owners struggle to maintain the optimal conditions for their plants due to busy schedules, lack of knowledge, or being away from home. This often leads to under-watering, over-watering, or exposure to unsuitable environmental conditions, resulting in unhealthy plants.

**Solution:**This IoT project will check if the soil is dry and alert you when the plant needs watering. The project has two parts. The first part consists of the moisture sensing system, detecting when the soil becomes dry. Once the system detects dry soil, it will send a signal to the second part of the project. The second part has a flag on a servo motor and a limit switch. So, as soon as the signal reaches the second part, the servo motor switch gets triggered, and the flag starts rising to notify you about the issue.

**Objectives:**

* **Remote Monitoring:** Allow users to monitor plant conditions from anywhere using a mobile application.
* **Automated Alerts:** Send notifications when plants need watering or when environmental conditions are suboptimal.
* **Data Logging:** Record and analyze environmental data to optimize plant care routines.

**Future Development:** For future development, we plan to implement machine learning algorithms to predict plant health issues and recommend care routines. The system will be integrated with smart home ecosystems like Google Home and Amazon Alexa for enhanced convenience. We will expand the sensor network to include light intensity, pH levels, and nutrient content. Additionally, a more sophisticated automated watering system will be developed to adjust water delivery based on real-time data

**Conclusion:** The Remote Plant Monitor will revolutionize plant care by providing a smart, automated solution that ensures optimal growing conditions. This project will demonstrate the potential of IoT in enhancing everyday home automation tasks.