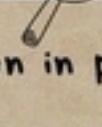


Plant Monitoring System

GROUP.34

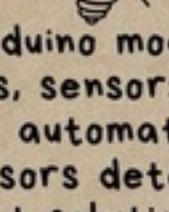
01 PROBLEM

The challenge lies in the need for increased attention in plant care. Absence of real-time monitoring and control of environmental factors hinders early detection of stress or disease, results in inefficient resource use, and restricts data-driven decisions for optimal plant care.



02 MOTIVATION

A plant monitoring system empowers growers to closely observe and control damage caused by environmental factor. Continuously monitoring plant health and environmental conditions enhances care, boosts productivity, conserves resources, allows remote management, and yields valuable insights across various domains, including agriculture, horticulture, scientific experimentation, and home gardening.



03 DESIGN & IMPLEMENTATION

The design incorporates plants equipped with Arduino module along with various electronic components such as, sensors like DHT11, BH1750, Soil moisture. This setup includes automated curtain and water supply whenever needed. Sensors detect issues and communicate with Arduino to implement solution, ensuring water supply or deploying a shed to protect plants from excessive sunlight. Data observed allows growers to make informed decisions, optimize plant care, create predictive models, and enhance overall plant health and productivity.

04 TESTING AND RESULT

Initially, we planned to include the MPU9250 module (gyroscopic accelerometer sensor). However, during implementation, a conflict arose with Arduino pins A4 and A5, which could be allocated to either BH1750 (Light Intensity) or the MPU module. Opting for BH1750 was the choice due to the impracticality of using MPU, as its rotation clashed with wires and other sensors. Attempts to incorporate Solar cells were hindered by irregular voltage, insufficient to power the 12-volt motor. Eventually, our model successfully provided accurate readings and effectively monitored plant conditions.

05 CONCLUSION

As this device can reduce the efforts and assistance for taking care of plants, it can be implemented in real life and in manufacturing with many more features added to it, like Bluetooth or Wifi enabled Technology which would connect Google assistant or Alexa to it. We can also include other sensors such as MPU9250 and NPK. We can also make the website where growers will get the messages and readings from sensors.



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