

Indoor plant monitoring using IOT

Abstract:

Nowadays, a lot of individuals are quite interested in doing their own gardening. Indoor gardening has a variety of advantages, including the ability to produce organic vegetables, use of the plants in home design, and air purification. People's busy schedules are the major obstacle to indoor gardening because plants require more attention for their growth and health, necessitating the hiring of a "plant sitter" if they leave on vacation. This problem can be solved by automating the plant monitoring utilizing the "Internet of Things". The Internet of Things is used in indoor gardening to monitor weather, temperature, moisture, pH levels, and many other variables using various environmental sensors. IOT provides data on each of these elements via a Blynk app.

Keywords: Indoor planting, Plant sitter, Environmental sensors

11-08-2023

Objectives:

- To protect the plant from excess heat, by sensing the temperature and watering the plants without wasting by checking the moisture in the soil.
- The protection of plants from bird activity is accomplished through the implementation of overseeing mechanisms that ensure their survival.

Proposed System:

- To address the limitations of the existing system, we propose implementing a comprehensive solution, that employs a combination of various environmental sensors, DC motors to provide shade for the plants when there is excessive heat and smart gadgets like camera module. These sensors will constantly monitor variables such as solar exposure, temperature fluctuations, and the presence of birds.

Literature Survey – 1

- This paper includes integrating the NodeMCU (ESP8266) microcontroller as the core component, serving as a unifying element for the entire module. This consolidation incorporates an array of sensors include the temperature sensor, humidity sensor and moisture sensor that are linked to the microcontroller. The integration of these technologies provides a foundation for efficient resource management, enhanced plant growth, and automation.
- [1].Mubashir Ali, Nosheen Kanwal, Aamir Hussain, Fouzia Samiullah, Aqsa Iftikhar and Mehreen Qamar, “[IoT based smart garden monitoring system using NodeMCU microcontroller](#)” International journal research in Applied Science & Engineering Technology, pp. 117-120, May. 2020.

Literature Survey-2:

This paper undertakes an exploration of the soil moisture sensor's purpose, which is primarily centred on identifying moisture present within the soil. Soil moisture is a critical factor influencing plant health and growth. Maintaining the right balance of moisture is essential to ensure proper nutrient absorption and prevent water stress. Soil moisture sensors are devices designed to measure the amount of water present in the soil. They play a crucial role in assessing the water content of the soil, enabling precise irrigation management and contributing to optimal plant growth.

Literature Survey-3:

The primary objective of this paper is to illuminate the utilization of the Blynk app within the framework of plant monitoring systems. The discussion underscores the prevalent adoption of Blynk as a user-friendly and effective avenue for remotely managing and monitoring plant conditions. Blynk stands out as an influential IoT platform, offering the tools to design and tailor mobile applications according to the specific demands of individual IoT projects.