

IoT Based Automated Mushroom Farm Monitoring System

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The rising demand for food production requires effective agricultural solutions. This project is one of the best artefacts which has been developed using the newest technology. The purpose of introducing IoT device to an industry like mushroom production is that, in agriculture domain it faces lot of difficulties with the environmental conditions when people attend to the production area. And the other reason why people are not interested to this high profitable business is that it requires regular monitoring rather than growing a plan in a pot. Because if there are no accepted conditions inside the mushroom house, always it gets infections from insects. To address those solutions we have developed an IoT system.

The proposed IoT system consists of two major sections. They are monitoring and controlling. In order to monitor the environmental conditions, the monitoring section comprises a DHT11 sensor and an LDR sensor. The NodeMCU microcontroller acts as the heart of this system. The controlling section consists of a cooling fan and a water pump. These two sections are combined through Ubidots.com which is easy to use IoT development platform.

The developed system continuously monitors the environmental condition inside the mushroom farm and sends the sensor data to the IoT server for the analysis and visualize. The threshold values of the measuring parameters are 29°C, 50%, and 85% for temperature, light and humidity respectively. If the sensor data do not rival to the defined threshold values, cooling fan and water pump operate automatically to balance the condition.

The system provides real-time values of sensors and plot them on a dashboard for the visual output and this can be used to implement a mobile application in the future.

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