

# DESIGNING AND DEVELOPING AN AUTOMATED MONITORING AND CONTROL SYSTEM FOR LAYER CHICKEN COOPS BASED ON THE INTERNET OF THINGS (IOT)

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## ABSTRACT

Layer chicken farming still heavily relies on manual monitoring and control systems, resulting in inefficiencies and potentially decreasing productivity. To address this issue, an Internet of Things (IoT)-based control and monitoring system was designed using the ESP32 microcontroller and the Blynk application. The system is equipped with a DHT22 sensor to monitor temperature and an MQ-137 sensor to detect ammonia gas levels in the air. Additionally, the system can automatically control fans, pumps, and lights based on environmental conditions and preset schedules. Test results showed that the DHT22 sensor has an average accuracy of 96.97%, and the MQ-137 sensor responds effectively to changes in ammonia levels. Overall system testing indicated a 100% success rate, with all components functioning correctly according to specified conditions without errors. The system also displays real-time data via the Blynk application, allowing farmers to monitor and control coop conditions from a smartphone. The implementation of this system helps maintain a stable coop environment, improve chicken health, and increase egg production.

**Keywords:** IoT, Poultry Farming, DHT22, MQ-137, Blynk.