RANCANG BANGUN PURWARUPA SISTEM MONITORING SUHU DAN KELEMBABAN KANDANG AYAM BERBASIS INTERNET OF THING (IOT)

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PROTOTYPE DESIGN OF INTERNET OF THINGS (IOT)-BASED TEMPERATURE AND HUMIDITY MONITORING SYSTEM FOR CHICKEN COOP

ABSTRACT

Today, Broiler chicken farmers rely on manual methods to maintain the optimal temperature in chicken coops. This approach presents a significant challenge: farmers often forget to monitor their livestock facilities' temperature and humidity levels, particularly in chicken coops. To address this issue, we developed the "Design and Construction of an IoT-Based Chicken Coop Temperature and Humidity Monitoring System as a comprehensive controller for the entire system.

In this study, the primary components utilized include a 5V step-down converter, a 3V step-down converter, an ESP32 microcontroller, a relay, a 5V fan, a 5W lamp, a DHT11 temperature and humidity sensor, and an LCD. This system allows for monitoring temperature and controlling lights in a chicken coop. Users can access these functionalities via Bluetooth by opening the corresponding smartphone application.

The results of this system model demonstrate the ability to maintain a temperature range of 22° to 25°C. This temperature aligns with the standards required for optimal chicken welfare. It can be concluded that the temperature monitoring and light control system is highly beneficial for poultry farmers, as it helps maintain an optimal environment within the coop, thereby contributing to their success. Furthermore, this system enhances time efficiency and human energy.

Keywords: Chicken Coop, Esp32, DHT11, Relay, Lamp, Bluetooth, Internet of Things