# ABSTRACT

Quail rearing management (*Coturnix coturnix japonica*) using a terraced housing system has an impact on the environmental conditions of each level of the cage. Implementation of a control system or control of existing cage environmental parameters has an impact on the productivity of quails. Information about the parameters that are controlled each time can be used as an evaluation material in reducing quail exposure to heat stress and poor air quality for too long.

In this final project, a system design that can integrate each device into the cage environment using wireless communication is carried out. This system consists of a device in the cage that acts as a sensor node and a separate device as the base node. The quail environmental parameter data that is sent is then processed and stored on the IoT platform service via an internet connection for later display on an Android smartphone.

The monitoring system is designed to produce a base node that can collect data simultaneously every 5 minutes from 2 sensor nodes with a response time of ≤ 1 second, packet loss of 5.56% for sensor nodes 01 and 11.11% for sensor nodes 02. Calculation of HSI by The base node has an error of 0% with the largest value of 103.73 for sensor node 01 and 101.77 for sensor node 02 and data transmission by the base node to the server is done exactly 15 minutes with packet loss of 0%. The application can also read data from the server properly when the latest data is available.

**Keywords :** *Quail Cage Environment, WSN, Internet of Things, Monitoring*