ABSTRACT

One of the lizard species favored by the Indonesian community is the Green Iguana (Iguana iguana), categorized under the Iguanidae family and classified as a herbivorous reptile. The Green Iguana is a cold-blooded creature that often spends more time basking to maintain its body temperature equivalent to the ambient conditions, aiming to optimize digestion. Therefore, enthusiasts or breeders of Green Iguanas require a solution for their care using the Internet of Things (IoT). The aim of this research is to design a habitat for the Green Iguana, facilitating automated monitoring of temperature and humidity using the DHT22 sensor component, which serves to detect conditions within the enclosure. Based on test results, the automatic sunbathing and humidity control system in the Green Iguana enclosure, based on IoT technology, has proven effective in maintaining an optimal environment for the Green Iguana. On the first day, during morning testing, an average error rate of 0.7% was recorded, while daytime testing showed an error rate of 1.6%, and nighttime testing resulted in an average error rate of 0.6%. On the second day, the average error rate during testing was 1.4%, with a daytime error rate of 2% and a nighttime error rate of 0.6%. The system was able to maintain temperature and humidity at levels consistent with 97% accuracy. Thus, this system successfully achieves the goal of designing an appropriate environment for the Green Iguana automatically through IoT technology. Quality of Service (QoS) testing yielded a throughput value of approximately 16099.6465 kbps and a delay of about 90.45441238 ms.

Keywords : *Green Iguana, internet of things, DHT22, Temperature, Humidity*