ABSTRAK

RANCANG BANGUN KONTROL MONITORING ALAT PAKAN DAN MINUM KUCING BERBASIS IOT

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Perkembangan teknologi Internet of Things (IoT) memungkinkan otomatisasi dan monitoring berbagai perangkat rumah tangga, termasuk sistem pemberian pakan hewan. Penelitian ini merancang alat pakan dan minum kucing otomatis berbasis IoT yang dapat dikontrol dan dipantau secara real-time melalui smartphone. Sistem menggunakan mikrokontroler ESP32 yang terhubung dengan sensor berat untuk mendeteksi bobot tubuh kucing, sehingga pakan dapat dikeluarkan otomatis sesuai kategori beratnya. Fitur kontrol minum disediakan secara manual melalui aplikasi. Seluruh data berat kucing dan aktivitas sistem disimpan pada Firebase Realtime Database sebagai riwayat pemantauan. Hasil pengujian menunjukkan bahwa alat berfungsi stabil dalam mendistribusikan pakan berdasarkan berat kucing serta mampu melakukan monitoring dan kontrol jarak jauh dengan akurat. Alat ini membantu pemilik hewan mengelola pakan dan minum kucing secara lebih efisien dan mudah dipantau.

Kata Kunci : ESP32, Kontrol dan Monitoring, Internet of Things (IoT), Alat Pakan dan Minum Kucing Otomatis

ABSTRACT

DESIGN AND DEVELOPMENT OF AN IOT-BASED CONTROL AND MONITORING SYSTEM FOR AUTOMATED CAT FEEDING AND DRINKING DEVICE

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The advancement of Internet of Things (IoT) technology enables automation and monitoring of various household devices, including pet feeding systems. This study presents the design and development of an IoT-based automated cat feeding and drinking device that can be controlled and monitored in real time via a smartphone. The system utilized an ESP32 microcontroller integrated with a load sensor to detect the cat's body weight – allowing the device to dispense food automatically according to defined weight categories. The drinking control feature was operated manually through the mobile application. All cat weight data and system activity logs were stored in the Firebase Real-time Database to support continuous monitoring. Experimental result indicated that the device operated reliably in dispensing food based on the cat's weight and provided accurate remote monitoring and control capabilities. To sum up, this system offers a more efficient and easily monitored solution for pet owners in managing their cats' feeding and drinking needs.

Keywords: ESP32, Control and Monitoring, Internet of Things (IoT), Automated Cat Feeding, Drinking Device