

ABSTRACT

Weighing livestock is an essential aspect of managing animal health and productivity, yet the manual methods commonly used remain inefficient and prone to errors. This final project aims to design and implement an Internet of Things (IoT)-based livestock weighing system for goats, cows, and sheep that can automatically record and manage weight data in real time. The system utilizes five 200 kg load cells installed at each corner of the weighing platform to detect the animal's weight. An ESP32 microcontroller serves as the central processing unit, collecting data from the sensors and transmitting it to a database server via an internet connection. The transmitted data is then visualized as graphs on a web-based interface to facilitate regular monitoring. The development process includes literature studies, hardware and software system design, system implementation, and performance testing on five different points of the weighing platform. Tools used in this project include Arduino IDE, ESP32, load cell sensors, and an Android tablet for display and monitoring. Test results indicate that the system operates as intended, achieving an average weighing accuracy of 97.08%. This system is expected to improve efficiency, accuracy, and ease of livestock weighing processes and to provide a practical solution applicable in various farming environments.

Keywords: IoT, livestock scale, load cell, ESP32, monitoring system.