

Sistem Pengendalian Dan Pemantauan Daya Listrik Berbasis Internet Of Things (Iot) Dengan Penerapan Logika Fuzzy Sugeno *(Control System and Internet Of Things (Iot)-based Electricity Power Monitoring System with the Application of Sugeno Fuzzy Logic)*
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ABSTRACT

This research aims to design and implement an Internet of Things (IoT)-based Internet of Things (IoT)-based electric power control and monitoring system. with the application of Sugeno method fuzzy logic. This system is developed to help household electricity users in monitoring electricity consumption in real-time, knowing problematic devices, and identifying the amount of electricity consumed. real-time, find out problematic devices, and identify the amount of (kWh) used in a certain period. The system uses Wemos D1 Mini microcontroller connected to the internet and PZEM-004T v3.0 sensor to read electrical parameters such as current, voltage, and voltage. v3.0 sensor to read electrical parameters such as current, voltage, power, and energy. The data obtained is sent to Firebase Realtime Database and displayed through a Nylo-based mobile application. through a Nylo-based mobile application. Sugeno fuzzy system is used to analyze five main input variables, namely time of use, power, energy, cost, and number of devices, which are then classified into three electricity usage levels: low, medium, and high. This system is expected to to improve the efficiency of household electricity use as well as provide useful information for decision-making related to energy saving.

Keywords: Sugeno fuzzy logic, electricity monitoring, IoT, Wemos D1 Mini, PZEM-004T, Firebase, Nylo, Flutter, household electrical energy.