

ABSTRACT

The use of electronic devices such as air conditioners, lights, and dispensers in the lecturers' office at Universitas Mandiri Subang is often not optimally monitored, leading to unnecessary energy consumption. This issue arises due to the absence of a centralized monitoring system that can display device status in real time and provide automatic alerts when devices are left on outside working hours. This study aims to design a web-based application called Hematrik.id, which supports real-time monitoring of electronic devices and electrical energy usage. The system was developed using the Framework for the Application of System Thinking (FAST) method, which includes the stages of preliminary investigation, problem analysis, requirements analysis, decision analysis, design, implementation, and testing. Hematrik.id is equipped with key features such as real-time device status monitoring, daily energy consumption logging, electricity usage history in graphical form, and automatic notifications when devices are detected operating outside of working hours. The system was tested using Black Box Testing and User Acceptance Testing (UAT). Test results showed that all system features functioned according to the specified requirements, and the system achieved a high level of user acceptance, with UAT scores exceeding 80% across all tested aspects. The system has proven effective in facilitating the monitoring of electronic devices and supporting energy efficiency in the lecturers' office at Universitas Mandiri Subang.

Keywords: Monitoring, Energy Efficiency, Web Application, Internet of Things, FAST