

ABSTRACT

The demand for electrical energy continues to increase. However, excessive consumption of electrical energy can lead to several issues, such as tripped circuits and escalated costs. To avoid electrical trips and excessive power consumption, we have developed a prioritized socket system. The sockets include crucial components such as the PZEM-004T sensor in the main circuit, capable of measuring electrical power with very low error, and the ACS712 sensor in the sub-circuit, capable of measuring electrical current with 99.85% accuracy, making these sensors suitable for monitoring. Additionally, non-priority sockets can interrupt the power flow when the electrical power exceeds the limit, while priority sockets remain active. The mobile application can display real-time data, historical data, and control the switching of prioritized sockets. This system comprises three subsystems: the main circuit, the sub-circuit, and the mobile application. The current to the priority sockets cannot be interrupted, while the nonpriority system can be interrupted when the electrical power load reaches 375 Watts. The mobile application is utilized to control the switching of prioritized sockets and to monitor the incoming electrical power loads. This system needs to be connected to the internet for proper functioning.

Keywords: IoT, Electrical Power, Control, Monitoring