ABSTRACT

Electrical energy is the main energy needed in every human activity both in the household and industry. The increasing need for electricity consumption leads to increased costs and consumption of electricity energy from year to year. One of the ways that can be used to prevent the waste of electrical energy is in the presence of good and proper use. Proper use can be done by knowing the electrical load that is being used to provide information to the user.

The internet of things-based electrical energy usage monitoring system tool that allows data on electrical energy usage to be monitored at any location as long as it is connected to the internet using the PZEM-004T module which is integrated with the Raspberry Pi model 3B+ is a system designed and utilized to detect the type of electrical load. which is connected to the electricity network in the form of load types along with current and active power parameters using the K-Nearest Neighbors method.

In this study, a household electrical load detection system made using the K-Nearest Neighbor algorithm can detect the type of electrical load connected to the electricity network and get results with 99% accuracy. This system can determine the type of electrical load that is connected to the electricity network and can be displayed to the user of the type of load along with the current and power parameters.

Keywords: current, power, electrical energy, pzem-004t, and k-nearest neighbor