ABSTRACT

DESIGN AND DEVELOPMENT OF ELECTRICITY CONSUMPTION MONITORING SYSTEM AT WISMA YASMIN USING THE MQTT PROTOCOL

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The Internet of Things is a development of internet communication networks where data can be exchanged for information. The Internet of Things is also a very popular technology that makes human work easier. Currently, electricity is one of the basic needs for humans because electrical energy is widely used in everyday life. Until now, the measurement of electrical energy in the board house has been done manually, so the data obtained cannot be accessed in real-time and takes a long time to produce information, which can cause material losses due to uncontrolled electrical loads. Therefore, a system is needed that can monitor the use of electric power based on the internet of things at Wisma Yasin Boarding House. So the solution proposed by researchers to overcome these problems is to build a monitoring system using pzem sensors to measure current, voltage, and power parameters, in addition to monitoring the temperature using DHT22 and detecting smoke using mq2 sensors. Each sensor has a good level of accuracy, starting with the Pzem Sensor, with current parameters resulting in an average error of 5.91%, voltage parameters of 3.61%, and power parameters tested for one hour using a fan load of 33.06 W per hour and a laptop charger load for one hour of 34.8 W. For testing, the DHT sensor produces an average error difference of 0.11%, and testing the MQ2 sensor works fine.

Keywords : Monitoring, Internet of Things, Power Supply, PZEM Sensor, DHT22 Sensor, Mq2 Sensor