

Abstract

Telkom University is faced with the problem of using an Air Conditioner (AC) as an air conditioner. The problem faced is the contribution to electricity consumption which is quite large due to excessive use of air conditioners such as letting it turn on regardless of whether or not the room is used. From the problems above, in this final project, a surveillance and automation system in the AC is built at Telkom University. This system uses the DHT11 sensor as a temperature sensor to detect the temperature of the room and the pyroelectric infrared sensor (PIR) as a motion sensor to determine the presence of people in the room. The number of sensors used will be calculated and analyzed based on the area used to get the required amount. The two sensors are connected to a microcontroller that has an embedded Wi-Fi module. Data from the two sensors will be sent to the gateway that will manage the data. Data from the management of the gateway will be sent to the actuator wirelessly to be able to determine the condition of the AC in the room. The data that has been managed will also be sent from the server/gateway to the web application for monitoring the condition of the room and the air conditioner in the room. The results of the implementation of the automation system using DHT11 and PIR can run with 92.5% accuracy and can be monitored by the web application.

Keyword : *Air Conditioner, electricity consumption, DHT11, Pyroelectric Infrared Sensor*