

## **ABSTRACT**

The growing level of activity today cause humans have no much time to take care of many things. As a result, little things like turning off lights, TV, air conditioning, and variety of other electrical equipment is often forgotten. For the landlord, this behavior can be detrimental because it would cause unwanted electrical bills. From a survey of 10 correspondents consisting of owners and tenants with rental rates that vary up to Rp10,000,000.00 per year, the data obtained the electrical equipment which often forgotten to be turned off when not in use, such as lights, laptops, and chargers. The reason is forgotten because of the rush to go to work or college. While the landlord difficult to determine and control the use of electrical equipment used by the tenant. Therefore, we need a system that is able to control and monitor the use of electrical equipment at any time.

In this thesis made a system that is able to monitor and limit the use of electrical devices and to control electrical devices automatically at a certain time. Used Raspberry Pi as a controller and a server, ACS712-05B current sensor to measure load on electrical devices, as well as the ADS7822P analog to digital signal converter. There are connected wirelessly with Android smartphone for interaction with users.

The results of field testing showed that a 170W lamp left on for 24 hours at an estimated cost Rp3439, 44 per day. With this system, the lights can be set to turn on only at night (12 hours) and requires a fee of Rp1719, 72 per day. Thus occurred a savings of 50%. Based on testing, program management monitoring and controlling power electrical devices successfully implemented. The system runs well and can help save energy.

Keywords: Electric power, smart home, Raspberry Pi, ACS712, ADS7822, Relay, Android Smartphone