ABSTRACT

Electricity crisis in Indonesia nowadays become reality, no longer a threat. In IT Telkom itself, costs incurred in electrical energy consumption is very large, even the numbers continue to increase every year, so there's a word to save the use of electricity on campus. One cause of electrical energy waste is due to the negligence of the user to turn off electronic equipment when it is not used anymore.

The objective of this final project is to give an option to save electricity by Building Automation System, which is controlled by a Programmable Logic Controller Omron CP1-M30DRA that automatically work in accordance with the respons from each sensors, LDR and SHT1 . Then working on the orders to each contactor, to turn off or tur on the lights and air conditioning. The system can also be monitored via Personal Computer.

The results obtained after tested is the system able to work well in accordance with the scenario where the program has been implanted using CX-Programmer by Ladder Diagram. The error rate between SHT11and a thermometer at 0.29 / oC, and it can be said to be quite good because the accuracy of the sensor in the datasheet that is equal to 0.4 / ° C. While for the testing of the light sensor, according to the LDR datasheet, resistance value of the sensor is inversely proportional to the lux value received. Where the greater the voltage value, then the smaller the resistance value, and it works with a fast response time, 17.5 seconds.

Keywords: *Building Automation System*, SHT11, LDR, *Programmable Logic Controller*