

ABSTRACT

The house becomes a place to relax, works and activities. Comfort of the house needed to support daily activities. Room Lighting becomes one of the factors supporting comfort in the house. When doing activity and working at home will be more comfortable if a room has good Lighting. One of house Lighting comes from room lights. The most popular lamp used as a Lighting source is the LED light. LED lights are selected because they have brighter intensity of light and energy saving.

A sensor is a device used to detect any physical or chemical environment changes. In this final project use LDR sensors as a detector level of light intensity in the room. The sensor detects the state of light in the room and adjusts it to recommended light intensity, then sends the information to the LED light to light up using a microcontroller (Arduino). In this system, the sensor connected to the network within a wireless sensor network. The data from the sensor node sent to the coordinator node wirelessly using XBee and then sent to the server for processing. All information monitored on a server. Such information can be accessed, monitored and controlled using mobile devices or computers with internet access.

From the results of testing on XBee, the more distance the sensor node from the coordinator node, the delay will be greater. While the throughput will be smaller, and vice versa. In server testing, the delay on the monitoring process is smaller than the delay in the controlling process. While the throughput monitoring is greater than throughput controlling. The system has a reliability of 95.17% and availability of 95.4%.

Keyword : LED, Arduino, light sensor, XBee