ADAPTIVE PUBLIC STREET LIGHTING PROTOTYPE WITH DS3231 TIMER AS INTERNET-BASED BACK UP OF THINGS

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ABSTRACT

Installing street lights is very important to support human activities, including increasing safety while driving, providing lighting in the environment or preventing crime. In remote areas, street lighting is generally still controlled and checked manually, so it is necessary to make a design to facilitate monitoring and automate the on and off of the lights. This study aims to make adaptive public street lighting with a DS3231 timer as an internet-based back-up of things. The microcontroller used in this study is ESP32 which is equipped with a DS3231 Timer and an LDR sensor, which is useful for monitoring and controlling street lights. The ESP32 microcontroller will then send notifications in the form of automatic messages to the Telegram Mesengger application. The results obtained from testing the LDR sensor with input in the form of sunlight with reference to the on/off time have not gone well, while in testing the LED lights with the LDR sensor 6 times the test at the on/off time obtained a success percentage value of 66.67% and percentage error of 33.33%. Testing on the DS3231 timer with the original time obtained quite good results, namely the difference between the on and off times according to the actual time. Testing when there is damage to the lamp, ESP32 as a microcontroller works well marked by the entry of a notification to a telegram in the form of a "Light Off" message where the message will continue to appear until the light is on or meets the conditions of the LDR sensor or timer.

Keywords : ESP32, Telegram, Street light, LDR, DS3231 timer