

ABSCTRACT

Solar-powered lighting is a type of lighting that utilizes sunlight as its energy source. However, it can still be problematic if the lighting becomes dim or even stops working due to various factors, such as weak power and voltage, and the presence of dirt that inhibits its operation. [1] This final project proposes an IoT-based monitoring and controlling system that functions to: (i) determine the brightness of the lighting by measuring current and voltage, and (ii) determine the amount of sunlight exposure, thereby optimizing the monitoring and controlling system for solar-powered lighting to assist managers and users.

This final project uses the IoT-based Blynk platform, supported by equipment such as a PC, Arduino, actuators, and sensors. Performance evaluation is conducted by measuring current, voltage, and light illumination. All evaluations and validations are conducted using computer simulations.

IoT-based monitoring and controlling shows the following discussion results: On the lightning lamp, it truns on automatically when the light is dark. Then the measurement when the light is bright, the graph shows fluctuating results. In volatge measurements, the results are static or fixed at 18V. After that in dark light, the measurement results on current and light illumination, seen in the graph show fluctuating results as well. Then for current measurements the results are fixed, but show a decrease once in an interval of 0.01V, whose original value is 12.7V to 12.6V.

Keywords: Monitoring, Controlling, IoT, Solar Powered Lighting