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Light Intensity Control Prototype Design Using Arduino Uno

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Abstract:

Electrical energy is a very important need for humans. Energy savings are a shared responsibility. Frequent power outages indicate that this is an energy crisis. This study aims to integrate Arduino with light sensors and motor drivers so that it can detect the light entering the room so that the lights in the room will adjust to the weather or outdoor light using Arduino Uno. This model is tested in an electrical engineering automation laboratory conducted in July 2018. The results showed opportunity to electricity savings during the experiment on 20 days. This research contributes to efforts to save the use of electrical energy by utilizing sunlight sources.

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The surge in fuel and electricity prices seems unavoidable. Due to the depletion of petroleum reserves in Indonesia. Consequently, there must be savings in electricity consumption by developing buildings that can save energy. because around 30% of the national energy supply is consumed by the building sector. Generally for lighting arrangements the room used the on-off principle, where on when the dark room lights are turned on and will turned off when the room is bright. With the principle of on-off, lighting regulation only based on the dark conditions of the room regardless of external contributions such as sunlight. When conditions are outside overcast room and the lights are off, means that the room is rather dark. However if the lamp is turned on then in the room become too bright and even dazzling. this often results in inconvenience and inefficient use of electrical energy. Therefore arrangements are needed lighting, good for comfort factors and the efficiency of electricity consumption [1]. The design of the light intensity control device, aims to control the intensity of the DC LED light automatically and can be used indoors or outdoors. According to Chen (1999: 2), an energy efficiency lighting system can be achieved by knowing standard lighting needs according to use in space, choose a light source energy efficient, using equipment appropriate to support the system, and optimize lighting control system and insert sunlight as much as possible [2]. The most effective way to save lighting and the source of light is to integrate both with lighting control, where light can be more easily managed and tailored to the needs. Control of the system lighting must be adjusted to needs inside it. This is very important, so that lighting in space can be utilized effective [3].

 Authors



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 References



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