CONTROL HOME LIGHTS USING FUZZY LOGIC METHOD BASED ON ARDUINO

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ABSTRACT

Current technological developments encourage people to continue to think creatively, and compete to find new inventions. Not only exploring new discoveries, but also maximizing the performance of existing systems and technologies. The combination of hardware and software technology can create new innovations in helping people's daily lives. For example, household electronic devices, namely lights, are generally controlled manually. Generally, for setting room lighting, the on-off principle is used, namely using a light switch which is usually found on the wall. This is not efficient if the house is large enough or has a multi-storey floor because residents will have difficulty and spend a lot of time or energy just turning on or off the lights, and there is a possibility of forgetting to turn off the lights due to the location of the separate light switches. With such a manual method, the on-off principle can only turn on/off the lights, but cannot adjust the intensity of the light on the lamp and ignore the light outside. This often results in inconvenience and inefficiency in the use of electrical energy. Therefore, the idea emerged to create a smart light control device that can be accessed via a smartphone and uses the fuzzy logic control method. Using an Arduino microcontroller and fuzzy logic control can solve problems in turning on, off, explaining and dimming house lights. The fuzzy method is used as an algorithm to determine the amount of light intensity in the lamp based on the rules used.

Keywords: Smarthome, Fuzzy Logic, Arduino, Smart Lamp