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The Application of Internet of Things for Control Energy Usage in Classroom

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Abstract

According to the problem of high energy usage in the classroom due to the survey result. Several students tend to forget to turn off the light, air conditioner, and other electronic equipment after use of the classroom, thus causing waste of energy consumption. This paper proposes the solution for the problem by demonstrates the prototype of the implementation of IoTs systems usage in the classroom for energy saving. The classrooms implemented with automated lighting control systems to save energy when no people present in the room. The proposed IoTs system used ESP32 and sensors with firebase to detect movements and temperature in the room. The movements were detected by IR sensor and HC-SR04. The humidity and temperature were measured by DHT22. The systems will receive and send data to the Firebase to command the devices via mobile and computers in order to increase convenience and safety for users. The results of the study show more than 15% saved on the annual electrical charge.

Keywords: Microcontroller, ESP32, Firebase, IoTs