Development of IoT Based Controlled Bench Power Generation System

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Abstract

The need for automation in the power sector is growing as technological advancement increases. Automatic control is required for tasks like turning on and off a power supply unit (inverter, generator, etc.). Therefore, this project aims to develop an IoT-based controlled bench power generation system. The study employed php scripting language, MySQL, and other web technologies to develop an IoT-based control program to resolve the issue and create a web application for interaction with the bench power supply used in this project. The web application interacted with a database which was the driver responsible for sending the Boolean values for switching or off to the physical power supply controller. The experimental findings showed that the IoT-based controlled bench power generation system is viable and fast in operations. From the analysis of the results compared with the manually operated generator, the performance is excellent, with a 75% deviation. The average time to start the IoT system is 28.28 s, and the manually operated power system with 261.6 s. This made it possible to develop a web application that, depending on the Wi-Fi network's availability, allowed users to manage a bench power supply from various locations with very little time and ease.

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