Optimasi Query pada Sensor Suhu Ruangan Menggunakan *Principal Component Analysis*

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Abstract
In Internet of Things (IoT), a lot of data is sent to the cloud to represent what is happening on the device. To send a lot of data, it takes a lot of power to do that activity. Therefore, we need a way to save power by using query optimization. In this proposal, the author proposes a query optimization using Principal Component Analysis (PCA) method to save power on the device. The author takes the case of the temperature sensor in a room. Tests are carried out on a microcontroller with integrated PCA and temperature sensors, and data is sent to ThingSpeak via Wi-Fi. This system optimally can save power by 30.75% with an error of 8.17 x 10^{-5}.

Keywords: Internet of Things, Principal Component Analysis, Query Optimization