

Perancangan Dashboard IoT untuk *Monitoring* Suhu & Kelembapan di *Cold Room* dan Ruang IT TIP TOP Bogor dengan *Framework* Laravel

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ABSTRAK

Suhu dan kelembapan yang tidak terkontrol di ruang penyimpanan dapat menyebabkan kerusakan bahan dan perangkat elektronik, meningkatkan biaya operasional, dan menurunkan efisiensi kerja. Monitoring manual berisiko mengalami kesalahan pencatatan dan keterlambatan deteksi perubahan suhu, sehingga diperlukan sistem otomatis berbasis IoT. Penelitian ini merancang sistem monitoring menggunakan ESP32, sensor DS18B20 dan DHT11, serta dashboard web berbasis Laravel untuk pemantauan real-time. Data dari sensor dikirim ke database MySQL dan ditampilkan dalam dashboard. Pengujian dilakukan untuk mengevaluasi akurasi sensor, kinerja sistem, dan efektivitas dashboard. Implementasi sistem ini diharapkan meningkatkan efisiensi, akurasi, dan fleksibilitas pemantauan suhu serta kelembapan, khususnya dalam pengelolaan lingkungan penyimpanan TIP TOP Supermarket.

Kata Kunci: Dashboard, IoT, Laravel, Monitoring Suhu, Sensor

IoT Dashboard Design for Temperature & Humidity Monitoring in Cold Room and IT Room TIP TOP Bogor with Laravel Framework

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ABSTRACT

Uncontrolled temperature and humidity in storage rooms can cause material and electronic device damage, leading to increased operational costs and decreased efficiency. Manual monitoring risks recording errors and delays in detecting temperature changes, necessitating an automated IoT-based system. This study designs a monitoring system using ESP32, DS18B20 and DHT11 sensors, and a Laravel-based web dashboard for real-time monitoring. Sensor data is sent to a MySQL database and displayed on the dashboard. Testing evaluates sensor accuracy, system performance, and dashboard effectiveness. Implementing this system is expected to improve efficiency, accuracy, and flexibility in temperature and humidity monitoring, particularly in TIP TOP Supermarket's storage management.

Keywords: *Dashboard, IoT, Laravel, Sensor, Temperature Monitoring*