



VeroScale: A Secure and Real-Time IoT-Based System for Material Weight Data Management

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By:

Indah Novianti Setyoningrum
001202200164

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VeroScale: A Secure and Real-Time IoT-Based System for Material Weight Data Management

ABSTRACT

Veroscale is a web application developed using Next.js and PostgreSQL to optimize material weighing processes in industries. The system implements role-based access control with four levels: administrator, manager, marketing, and operator. The application integrates IoT technology through RFID scanners and digital scales for real-time automation with approval workflows ensuring data validation.

Multi-layered security is implemented through JWT authentication and Arcjet protection. Responsive interface is built with Tailwind CSS for multi-device compatibility. The system shows optimal performance with 1.7- second loading time. This platform contributes to industrial digitalization through scalable solutions with complete audit trails for operational transparency.

Keywords : Role-based Access Control (RBAC), Weight IoT Integration, Real-time detection

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