

ABSTRAK

Pengelolaan operasional armada perusahaan di PT Tirta Sriwijaya Maju (Perseroda) Palembang sebelumnya masih dilakukan melalui pelaporan *WhatsApp* dan pencatatan *Microsoft Excel* secara terpisah, sehingga menyebabkan data tidak terintegrasi, proses pemantauan tidak efisien, serta tingginya risiko kesalahan pencatatan dan keterlambatan informasi. Penelitian ini bertujuan untuk membangun aplikasi *monitoring* operasional armada perusahaan berbasis *website* yang mampu mengintegrasikan data penggunaan bahan bakar minyak (BBM), servis kendaraan, dan administrasi pajak kendaraan dalam satu sistem terpusat. Metode pengembangan sistem yang digunakan adalah *Waterfall* dengan tahapan perencanaan, analisis kebutuhan, perancangan sistem, implementasi, dan pengujian. Aplikasi dibangun menggunakan *framework Laravel* dengan *database MySQL* dan dirancang untuk tiga jenis pengguna, yaitu admin, manajer SDM & umum, dan karyawan, yang masing-masing memiliki hak akses sesuai peran dan tanggung jawabnya. Perancangan sistem digambarkan menggunakan *Unified Modeling Language (UML)* yang meliputi *use case diagram*, *activity diagram*, *class diagram*, dan *sequence diagram*. Pengujian dilakukan menggunakan metode *Black Box Testing* terhadap seluruh fitur aplikasi. Hasil pengujian menunjukkan bahwa seluruh fungsionalitas sistem berjalan sesuai kebutuhan, meliputi autentikasi *login*, pengelolaan data BBM dan servis kendaraan, *monitoring* pajak kendaraan, *approval* pembayaran pajak, serta ekspor laporan dalam format PDF. Dengan diterapkannya aplikasi ini, proses *monitoring* operasional armada perusahaan di PT Tirta Sriwijaya Maju (Perseroda) Palembang menjadi lebih efektif, efisien, terstruktur, dan terintegrasi.

Kata Kunci: *Monitoring, Armada Perusahaan, Website, Laravel, Black Box Testing*

ABSTRACT

The management of company fleet operations at PT Tirta Sriwijaya Maju (Perseroda) Palembang was previously carried out through WhatsApp reporting and separate Microsoft Excel records, resulting in unintegrated data, inefficient monitoring processes, and a high risk of recording errors and information delays. This research aims to develop a website-based company fleet operational monitoring application capable of integrating fuel consumption data, vehicle service history, and vehicle tax administration into a single centralized system. The system development method used is the Waterfall model, consisting of planning, requirements analysis, system design, implementation, and testing stages. The application was built using the Laravel framework with a MySQL database and designed for three types of users, namely admin, HR & Finance Manager, and employee, each with access rights corresponding to their respective roles and responsibilities. The system design was modeled using the Unified Modeling Language (UML), including use case diagrams, activity diagrams, class diagrams, and sequence diagrams. Testing was conducted using the Black Box Testing method across all application features. The test results indicate that all system functionalities operate as required, including login authentication, fuel and vehicle service data management, vehicle tax monitoring, tax payment approval, and report export in PDF format. With the implementation of this application, the company fleet operational monitoring process at PT Tirta Sriwijaya Maju (Perseroda) Palembang has become more effective, efficient, structured, and integrated..

Keywords: Monitoring, Company Fleet, Website, Laravel, Black Box Testing