RANCANG BANGUN SISTEM *HOME SERVICE* BENGKEL BERBASIS *WEBSITE* MENGGUNAKAN METODE *WATERFALL*

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ABSTRAK

Bengkel Sunda Motor yang berlokasi di Jakarta Timur menghadapi kendala *Admin*istratif berupa tumpang tindih jadwal montir, penundaan respons pesanan, dan rentannya kehilangan data transaksi akibat pemesanan layanan *home service* yang masih dilakukan melalui panggilan telepon, pesan *WhatsApp*, atau kunjungan langsung *Customer* ke bengkel untuk mencatatkan jadwal, serta pencatatan data transaksi dan riwayat servis kendaraan yang menggunakan kertas nota untuk kemudian direkap ulang ke dalam *spreadsheet Microsoft Excel*. Penelitian ini bertujuan untuk merancang dan membangun sistem informasi layanan *home service* berbasis *website* guna mendigitalisasi proses pemesanan, penjadwalan montir secara terstruktur, serta integrasi rekapitulasi laporan secara terpusat. Metode pengembangan sistem yang digunakan adalah metode *Waterfall* dengan analisis kebutuhan menggunakan kerangka kerja PIECES. Sistem dimodelkan menggunakan *Unified Modeling Language* (UML) dan diimplementasikan menggunakan *framework Next.js*, bahasa pemrograman *TypeScript*, serta didukung oleh *Supabase* sebagai *Backend-as-a-Service* (BaaS) berbasis basis data *PostgreSQL*. Pengujian sistem dilakukan melalui *Black Box Testing* dan *User Acceptance Testing* (UAT) dengan total 33 skenario pengujian yang melibatkan aktor *Owner*, *Admin*, *Customer*, dan Montir. Hasil pengujian menunjukkan bahwa sistem berhasil dibangun dengan tingkat kelulusan 100% (33 dari 33 pengujian berstatus *pass*). Penelitian ini menyimpulkan bahwa implementasi sistem berbasis *website* ini mampu mengotomatisasi alur kerja operasional bengkel, meminimalkan risiko kehilangan data, serta meningkatkan transparansi dan kualitas pelayanan servis panggilan kepada *Customer* secara signifikan.

Kata Kunci: Rancang Bangun, *Home Service*, Bengkel, *Waterfall*, *Next.js, Supabase*.

DESIGN AND DEVELOPMENT OF A WEB-BASED WORKSHOP HOME SERVICE SYSTEM USING WATERFALL METHOD

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ABSTRACT

Bengkel Sunda Motor, located in East Jakarta, faces Administrative constraints such as overlapping mechanic schedules, delayed booking responses, and vulnerability to transaction data loss due to home service bookings still being made via phone calls, WhatsApp messages, or direct Customer visits to schedule appointments, as well as Customer transaction data and vehicle service histories still being recorded on paper invoices before being manually re-entered into Microsoft Excel spreadsheets. This study aims to design and develop a web-based home service information system to digitize the booking process, construct structured mechanic scheduling, and integrate centralized report compilation. The system development methodology applied is the Waterfall model, utilizing the PIECES framework for requirements analysis. The system is modeled using Unified Modeling Language (UML) and implemented using the Next.js framework, TypeScript language, and Supabase as Backend-as-a-Service (BaaS) powered by a PostgreSQL database. System verification is conducted through Black Box Testing and User Acceptance Testing (UAT) with a total of 33 testing scenarios involving the Owner, Admin, Customer, and Mechanic. The testing results demonstrate that the system was successfully built with a 100% success rate (33 out of 33 test cases passed). This study concludes that the implementation of this web-based system effectively automates the workshop's operational workflow, minimizes the risk of data loss, and significantly improves service transparency and quality for call-out services.

Keywords: *System Design, Home Service, Automotive Workshop, Waterfall, Next.js, Supabase.*