

INTISARI

Perkembangan teknologi digital mendorong terwujudnya layanan ekspedisi yang lebih cepat, transparan, dan efisien. Salah satu inovasinya adalah layanan ekspedisi *on-demand* yang memungkinkan pelanggan melakukan pemesanan secara langsung tanpa terikat jadwal konvensional. Dalam pengembangan sistem layanan ekspedisi *on-demand* berbasis web, pemilihan *framework* menjadi aspek penting, mengingat setiap *framework* memiliki keunggulan dan keterbatasan masing-masing. Penelitian ini bertujuan untuk menganalisis perbandingan performa dua *framework fullstack*, yaitu Laravel dan Next.js, serta mengimplementasikan sistem layanan ekspedisi *on-demand* sebagai studi kasus. Metode penelitian meliputi perancangan dan implementasi fitur pemesanan pengiriman pada kedua *framework*, diikuti pengujian performa menggunakan metrik *First Contentful Paint* (FCP), *Largest Contentful Paint* (LCP), *Cumulative Layout Shift* (CLS), *Average Response Time*, dan *Throughput*. Hasil pengujian menunjukkan bahwa pada sisi *frontend*, Laravel memiliki nilai FCP sebesar 0,6 detik, LCP 1,7–1,9 detik, dan CLS 0,001, sedangkan Next.js menunjukkan performa lebih baik dengan FCP 0,4 detik, LCP 1,5–1,6 detik, dan CLS 0. Pada sisi *backend*, perbedaan lebih menonjol, di mana Laravel mencatat *Average Response Time* antara 800–11.000 ms dan *Throughput* 20–30 transaksi per detik, sedangkan Next.js hanya 200–1.700 ms dengan *Throughput* 60–70 transaksi per detik. Hasil tersebut menunjukkan bahwa Next.js memiliki performa dan skalabilitas lebih unggul dibandingkan Laravel. Sistem yang dihasilkan mencakup fitur utama seperti pemesanan pengiriman, pelacakan status, manajemen pesanan, manajemen kendaraan, dan pengelolaan data pengguna. Pengujian *User Acceptance Test* (UAT) menunjukkan tingkat penerimaan sebesar 87% dari pelanggan dan 92% dari kurir, menandakan sistem diterima dengan sangat baik. Diharapkan hasil penelitian dan sistem yang dikembangkan ini dapat menjadi referensi bagi pengembang dan pelaku usaha jasa ekspedisi dalam memilih *framework* yang efisien serta mendukung peningkatan layanan digital yang responsif dan andal.

Kata kunci: *Framework Fullstack*, Laravel, Next.js, Perbandingan Performa, Sistem Ekspedisi *On-Demand*

ABSTRACT

The advancement of digital technology has driven the emergence of faster, more transparent, and more efficient delivery services. One such innovation is the on-demand delivery system, which enables customers to place delivery orders instantly without being bound by conventional schedules. In developing a web-based on-demand delivery system, the selection of an appropriate framework is crucial, as each offers distinct advantages and limitations. This study aims to analyze the performance comparison between two full-stack frameworks, Laravel and Next.js, and to implement an on-demand delivery system as a case study. The research methodology includes the design and implementation of a delivery ordering feature using both frameworks, followed by performance testing based on First Contentful Paint (FCP), Largest Contentful Paint (LCP), Cumulative Layout Shift (CLS), Average Response Time, and Throughput metrics. The results indicate that, on the frontend side, Laravel recorded an FCP of 0.6 seconds, LCP of 1.7–1.9 seconds, and CLS of 0.001, while Next.js performed better with an FCP of 0.4 seconds, LCP of 1.5–1.6 seconds, and CLS of 0. On the backend side, the difference was more significant, where Laravel showed an Average Response Time ranging from 800 to 11,000 ms and a Throughput of 20–30 transactions per second, while Next.js achieved 200–1,700 ms with a Throughput of 60–70 transactions per second. These results demonstrate that Next.js outperforms Laravel in terms of performance and scalability. The implemented system includes key features such as delivery ordering, shipment tracking, order management, vehicle management, and user data administration. The User Acceptance Test (UAT) showed an acceptance rate of 87% from customers and 92% from couriers, indicating strong user approval. It is expected that the outcomes of this research and the developed system can serve as a reference for developers and logistics service providers in selecting an efficient framework to support the development of responsive and reliable digital delivery services.

Key words: Fullstack Framework, Laravel, Next.js, Performance Comparison, On-Demand Delivery System