

PENGEMBANGAN SISTEM LAYANAN UJI LABORATORIUM LINGKUNGAN BERBASIS WEBSITE PADA DINAS LINGKUNGAN HIDUP KABUPATEN GROBOGAN MENGGUNAKAN LARAVEL

ABSTRAK

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Kualitas lingkungan, khususnya kualitas air dan udara, memiliki peran penting dalam mendukung kesehatan masyarakat dan keberlanjutan lingkungan. Pada Dinas Lingkungan Hidup Kabupaten Grobogan, proses layanan uji laboratorium lingkungan sebelumnya belum terintegrasi dalam satu sistem berbasis digital, sehingga berpotensi menimbulkan keterlambatan pelayanan, kesalahan pengelolaan data, serta keterbatasan akses informasi bagi pemohon. Untuk menjawab permasalahan tersebut, dikembangkan sistem layanan uji laboratorium lingkungan berbasis *website* menggunakan *framework Laravel* dengan metode *Agile Software Development*. Sistem ini mendukung beberapa peran pengguna, yaitu administrator laboratorium, pelanggan, dan masyarakat umum. Administrator dapat mengelola akun pengguna, memverifikasi permintaan uji, menginput serta mengelola hasil uji laboratorium, dan mengelola publikasi data lingkungan. Pelanggan dapat mengajukan permintaan uji, memantau status dan riwayat permohonan, serta mengunduh hasil uji secara daring, sedangkan masyarakat umum dapat mengakses informasi dan publikasi lingkungan. Pengujian sistem dilakukan menggunakan metode *black box testing* dan menunjukkan seluruh fungsi sistem berjalan sesuai kebutuhan. Sistem kemudian dideploy ke lingkungan produksi menggunakan platform Railway yang terintegrasi dengan GitHub, Backblaze sebagai penyimpanan berkas, serta Brevo sebagai layanan pengiriman email. Implementasi sistem ini diharapkan dapat meningkatkan efisiensi, transparansi, dan kualitas layanan uji laboratorium lingkungan serta mendukung transformasi digital pelayanan publik.

Kata Kunci : *Agile Software Development*, Dinas Lingkungan Hidup, Layanan Laboratorium, *Website*.

DEVELOPMENT OF A WEBSITE-BASED ENVIRONMENTAL LABORATORY TESTING SERVICE SYSTEM AT THE GROBOGAN DISTRICT ENVIRONMENTAL SERVICE USING LARAVEL

ABSTRACT

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Environmental quality, particularly water and air quality, plays an important role in supporting public health and environmental sustainability. At the Environmental Agency of Grobogan Regency, environmental laboratory testing services previously had not been fully integrated into a digital-based system, which could lead to service delays, data management errors, and limited access to information for applicants. To address these issues, a website-based environmental laboratory testing service system was developed using the Laravel framework and the Agile Software Development method. The system supports multiple user roles, including laboratory administrators, customers, and the general public. Administrators are able to manage user accounts, verify testing requests, input and manage laboratory test results, and publish environmental data. Customers can submit testing requests, monitor request status and history, and download test results online, while the public can access environmental information and publications. System testing was conducted using the black box testing method, and the results indicate that all system functions operate as expected. The system was deployed to a production environment using the Railway platform integrated with GitHub, Backblaze cloud storage for file management, and Brevo as an email service. The implementation of this system is expected to improve efficiency, transparency, and service quality in environmental laboratory testing and support digital transformation in public services.

Keywords : Agile Software Development, Environmental Agency, Laboratory Service, Website.