

RANCANG BANGUN APLIKASI PENGAJUAN SURAT PERMOHONAN KERJA PRAKTEK YANG MODULAR DENGAN METODE FEATURE DRIVEN DEVELOPMENT

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ABSTRAK

Proses pengajuan surat permohonan kerja praktek di Politeknik Negeri Bengkalis masih dilakukan secara manual, sehingga sering menimbulkan keterlambatan, kesalahan penulisan, serta kendala dalam proses pengarsipan dokumen. Penelitian ini bertujuan untuk merancang dan membangun sistem pengajuan surat kerja praktek berbasis arsitektur modular dengan menerapkan metode Feature Driven Development (FDD). Metode FDD dipilih karena memiliki tahapan pengembangan yang jelas dan mampu menyesuaikan diri terhadap perubahan kebutuhan pengguna. Sistem yang dikembangkan melibatkan tiga aktor utama, yaitu mahasiswa, koordinator program studi, dan admin kerja praktek, dengan fitur yang mendukung proses pengajuan, verifikasi, hingga pencetakan surat secara otomatis. Evaluasi kualitas arsitektur modular dilakukan melalui pengukuran metrik coupling dan cohesion, serta pengujian perubahan fitur pada tampilan sistem. Hasil evaluasi menunjukkan nilai Average Afferent Coupling (Ca) sebesar 2,33, Average Efferent Coupling (Ce) sebesar 2,57, dan LCOM sebesar 1,33. Selain itu, penghapusan beberapa field pada fitur atau tampilan tertentu tidak memengaruhi modul lain. Hasil ini menunjukkan bahwa sistem memiliki struktur modular yang baik dan mudah dikembangkan di masa mendatang.

Kata Kunci: *Feature Driven Development*, Arsitektur Modular, *Coupling*, *Cohesion*, Sistem Informasi Akademik.

DESIGN AND CONSTRUCTION OF A MODULAR SYSTEM FOR SUBMITTING AN APPLICATION FOR INTERNSHIP WITH THE FEATURE DRIVEN DEVELOPMENT METHOD

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ABSTRACT

The process of submitting internship application letters at Politeknik Negeri Bengkalis is still carried out manually, often resulting in delays, writing errors, and difficulties in document archiving. This study aims to design and develop an internship application letter submission system based on a modular architecture using the Feature Driven Development (FDD) method. The FDD method was chosen because it provides clear development stages and is adaptable to changes in user requirements. The developed system involves three main actors: students, study program coordinators, and internship administrators, with features supporting submission, verification, and automatic letter generation. The evaluation of the modular architecture quality was conducted through coupling and cohesion metric measurements, as well as feature modification testing on the system interface. The evaluation results show an Average Afferent Coupling (Ca) value of 2.33, an Average Efferent Coupling (Ce) value of 2.57, and an LCOM value of 1.33. In addition, the removal of several fields in certain features or interfaces did not affect other modules. These results indicate that the system has a good modular structure and is easy to maintain and further develop in the future.

Keywords: *Feature-Driven Development, Modular Architecture, Coupling, Cohesion, Academic Information System.*