

# Software product line engineering dan API adapter untuk pengembangan variasi payment gateway = Software product line engineering and API adapter for payment gateway variation's development

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## Abstrak

Payment gateway merupakan salah satu metode transaksi uang yang memproses pembayaran secara otomatis, sehingga dapat membantu organisasi amal untuk mengelola donasi dan distribusi dalam bentuk uang. Setiap organisasi amal dapat menggunakan layanan payment gateway yang bervariasi sesuai kebutuhan dan preferensi. Penggunaan Software Product Line Engineering (SPLE) dapat memfasilitasi hal tersebut, karena SPLE merupakan paradigma yang mengembangkan perangkat lunak berdasarkan persamaan dan perbedaan suatu kumpulan produk. Penelitian ini mengembangkan back-end dari fitur payment gateway menggunakan ABS-Microservices Framework. Framework ini mengembangkan aplikasi berarsitektur microservices dengan paradigma SPLE. Penggunaan ABS-Microservices Framework dapat meningkatkan reusability dan maintainability dari aplikasi yang dihasilkan. Pengembangan fitur payment gateway memerlukan API Adapter sebagai sarana komunikasi dengan pihak penyedia layanan payment gateway. API Adapter perlu diimplementasikan pada ABS-Microservices agar dapat digunakan pada implementasi fitur payment gateway. Penelitian ini menghasilkan implementasi API Adapter dan fitur payment gateway pada ABS-Microservices. Untuk menguji hasil pengembangan, dilakukan eksperimen terhadap studi kasus AISCO. AISCO merupakan studi kasus yang ditujukan untuk pembuatan situs web organisasi amal. Pengembangan fitur payment gateway menggunakan paradigma SPLE berhasil mengurangi effort yang dibutuhkan untuk implementasi source code, sehingga mengurangi effort untuk pengembangan fitur tersebut pada variasi produk AISCO.

.....Payment gateway is a method of money transactions that processes payments automatically, so it can help charity organizations to manage donations and distributions in cash. Each charity organization can use a variety of payment gateway services based to their needs and preferences. The use of Software Product Line Engineering (SPLE) can facilitate this, because SPLE is a paradigm that develops software based on similarities and differences in a collection of products. This research develops the back-end of payment gateway feature at AISCO with ABS-Microservices Framework. This framework develops an application with microservices architecture and SPLE paradigm. The use of ABS-Microservices Framework can increase the reusability and maintainability of the resulting application. Development of the payment gateway feature requires API Adapter as a means of communication with the payment gateway service provider. API Adapter needs to be implemented on ABS-Microservices so that it can be used in the implementation of payment gateway feature. This research resulted in the implementation of API Adapter and payment gateway features on ABS-Microservices. To test the development results, an AISCO case study was conducted. AISCO is a case study aimed at creating a website for charity organizations. Development of the payment gateway feature using the SPLE paradigm successfully reduce the effort needed for the implementation of source code, therefore reducing effort needed by developer to develop this feature in AISCO's product variations.