Domain Design dan Domain Realization Modul Product Line Payment Gateway = Domain Design and Domain Realization Modules of Product Line Payment Gateway

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Abstrak

Payment Gateway adalah teknologi perangkat lunak yang menyediakan layanan pembayaran. Seiring berjalan waktu muncul requirement baru dan dilakukan pengembangan perangkat lunak untuk memenuhinya. Namun cara tersebut tidak efisien karena pada tiap iterasi pengembangan requirement baru, diperlukan implementasi ulang requirement yang sudah diimplementasi pada pengembangan sebelumnya. Maka dari itu dibutuhkan paradigma pengembangan perangkat lunak yang terbuka pada perubahan dan penggunaan ulang, yaitu Software Product Line Engineering (SPLE). SPLE adalah paradigma pengembangan perangkat lunak yang memanfaatkan reusable platform dan mass customisation. Pada penelitian ini akan dikembangkan product line untuk Payment Gateway dengan mengimplementasi fitur Payment, fitur layanan pembuatan pembayaran. Penelitian menggunakan framework SPLE yang fokus pada dua tahap dalam Domain Engineering yaitu Domain Design dan Domain Realization. Domain Design akan menggunakan UML-DOP, profil UML untuk merepresentasikan konsep Delta-Oriented Programming, dan U2VMJ Generator, code-template generator dari PricesIDE. Domain Realization akan menggunakan WinVMJ Composer, sebuah FeatureIDE Composer dari PricesIDE. Setelah itu akan dilakukan Application Engineering untuk menghasilkan dan menguji product dari product line. Hasil yang ditemukan adalah dalam satu proses pengembangan perangkat lunak product line Payment Gateway, lima variasi product Payment Gateway berhasil dihasilkan dan diuji dan implementasi pemanggilan external API fitur Payment menghasilkan granularitas fitur.

.....Payment Gateway is a software technology that serves payment services. As new requirements are needed, a software development is done to fulfill it. This method is not efficient because on each software development started to fulfill a new requirement, similar requirements that has been implemented from previous software development need to be re-implemented. A new paradigm in software development is needed that are open to changes and reusability, one of which is Software Product Line Engineering (SPLE). SPLE is a software development paradigm that uses a reusable platform and mass customisation. In this research we will develop a product line of Payment Gateway by implementing a feature called Payment, a payment creation service. This research uses the SPLE framework and focus on two steps in Domain Engineering which are Domain Design and Domain Realization. Domain Design will use UML-DOP, a UML profile to represent Delta-Oriented Programming concept, and U2VMJ Generator, a code-template generator from PricesIDE. Domain Realization will use WinVMJ Composer, a FeatureIDE Composer from PricesIDE. Next, an Application Engineering will be done to generate and test products generated from the product line. It is found that in one software development process of Payment Gateway product line, five variations of Payment Gateway successfully generated and tested and implementation for external API calls

in Payment feature cause a feature granularity.