Evaluasi Empiris Dampak Refactoring Coupling Dispersion Terhadap Kualitas Kode Sumber = Empirical Evaluation of the Impact of Dispersion Coupling Refactoring on Quality of Source Code

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Abstrak

Refactoring merupakan teknik pemograman yang bertujuan untuk meningkatkan kualitas kode program. Sebuah studi menunjukkan bahwa tujuh puluh delapan persen (78 %) dari 328 insinyur perangkat lunak setuju bahwa refactoring memberikan dampak positif pada pekerjaan mereka. Sebanyak 43,3 % responden menyatakan refactoring dapat meningkat keterbacaan (readability) kode dan 29,9 % nya menyatakan refactoring meningkatkan maintainability kode. Penelitian ini bertujuan untuk menguji dampak refactoring terhadap Dispersion Coupling Harmfulness kode sumber. Pemilihan smell kopling tersebar (dispersion coupling) didasarkan pada kerawanannya untuk diubah (change-proneness), banyak ditemukan (numerosity) pada kode program dan dampaknya terhadap kualitas perangkat lunak. Penelitian ini dilakukan dengan cara eksperimen yang terdiri dari serangkaian pengujian. Setiap pengujian terdiri dari tindakan refactoring tertentu, terhadap kode program sebagai objek dan pemrogram sebagai subjek nya. Berdasarkan data yang dikumpulkan dari eksperimen, analisis statistik dilakukan untuk mengetahui dampak refactoring terhadap dispersion coupling harmfulness kode program. Hasil eksperimen menunjukkan 78% sampel mengalami penurunan Dispersion Coupling Harmfulness hingga mencapai nilai 0. Hal ini menunjukkan manfaat dari refactoring terhadap pengendalian kopling tersebar yang kemudian berdampak pada peningkatan kualitas kode sumber.

.....Refactoring is a programming technique that aims to improve the quality of program code. One study showed that seventy-eight percent (78%) of 328 software engineers agreed that refactoring had a positive impact on their work. As many as 43.3% of respondents stated that refactoring can increase code readability and 29.9% stated that refactoring increases code maintainability. This study aims to examine the impact of refactoring on dispersion coupling harmfulness of source code. The choice of dispersion coupling smells is based on their change-proneness, numerosity in program code and their impact on software quality. This research was conducted by means of an experiment consisting of a series of tests. Each test consists of a specific refactoring action, to the program code as object and the programmer as its subject. Based on data collected from experiments, statistical analysis was carried out to determine the impact of refactoring on source code. The experimental results showed that the value of Dispersion Coupling Harmfulness from 78% of the samples became 0 after refactoring. This demonstrates the benefits of refactoring against dispersed coupling control which in turn has an impact on improving the quality of the source code.