



Automatic software refactoring: a systematic literature review

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Abstract

Refactoring a software artifact is an embedded task in the maintenance phase of the software life cycle. To reduce the time and effort required for this task, researchers proposed methods to automate the software refactoring process at the design and code levels. In this paper, we conducted a systematic literature review of papers that suggest, propose, or implement an automated refactoring process. Using different phases, setting several quality measures, and snowballing, only 41 papers passed to the last stage to be analyzed and reviewed. We observe an increase in the number of papers that propose automatic refactoring. The results show that while most of the papers discuss code refactoring, only a few recent papers are focused on model refactoring. Search-based refactoring is gaining more popularity, and several researchers have used it to perform refactoring in a quick and efficient manner.

Keywords Search-based · Refactoring · Systematic review · Automatic refactoring

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