

# Approaches for Refactoring to Frameworks

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## Abstract

Software refactoring is the process of improving the internal structure of the software while not affecting its external behavior. Refactoring to framework is a software refactoring process that is applied to an existing software application to produce reusable domain classes while improving their quality. These produced classes form the software architecture and can be reused in the development of other applications. In this paper, we propose two approaches for refactoring to framework; the quality attribute based refactoring to framework (QARtF) and the level based refactoring to framework (LRtF). We empirically validate these two proposed approaches. Results show that these two approaches can produce high quality domain classes that can be used to form software frameworks.

**Keyword:** Refactoring to framework; software architecture; quality improvement.