

Documents

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Identifying performance issues based on method invocation patterns of an API

(2014) *ACM International Conference Proceeding Series*, art. no. a51, . Cited 1 time.

Abstract

Software systems use many third party libraries by invoking their APIs. A software system may potentially use an API in an inefficient manner, for example, by creating unnecessary or a large number of short-lived objects. This can cause performance degradation in terms of memory usage and latency in critical applications. In this paper we use an object invocation model based on object creation and their method invocations from different code locations. We use a framework to extract the model features from a running software system. The extracted features are then used in a clustering based mechanism to identify problematic code locations within the software system. We demonstrate our approach by analyzing Java Collection API objects in a Java-based open source editor JEdit. We have successfully identified interesting code locations and discussed their impact on software performance. Copyright is held by the owner/author(s).

2-s2.0-84905497113

Document Type: Conference Paper

Publication Stage: Final

Source: Scopus