INFORMATICS INSTITUTE OF TECHNOLOGY

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A solution to detect Anti-patterns in Java using Big Data analytics and pattern matching algorithms

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Abstract

Anti-patterns were conceived in small talk circles until recently. The impact of anti-pattern occurrences has caused many problems in human history, making engineers look more into these. Antipatterns which refer to specific design violations or implementation styles can tell the developers whether a design choice is "poor" or not. Poor designs can be fixed by refactoring. Detecting anti-patterns and refactoring is integral to development. If proper detection is not done properly, it can set back days, even weeks, and refactoring becomes riskier. Anti-pattern detection models are often used to help allocate software quality assurance efforts.

The Anti-Pattern Detection analyzer detects two types of Anti-Patterns names Long Method and Speculative Generality. To detect the occurrences, the user given repository is scanned a dataset is created for the respective repository. Then the created dataset is saved and analyzed via big data analytics map-reduce methods and pattern matching algorithms. The final result is emailed to the user.

The project has been tested on open-source Java projects where have been examined and scanned for the detection of Anti-Patterns. The Anti-Pattern Tool and the results from this evaluation open a good approach to the domain area for the detection of patterns.