Abstract

The quality of software is a crucial issue as a software system evolves. Managing source code smells and vulnerabilities contributes to software quality. In general, metrics have been used to classify code smells in source code, and an empirical examination is being considered in this paper on the correlation of code smells and vulnerabilities. For continuous inspection of code quality, Sonar Cloud has been used to conduct automated assessments with static code analysis to detect code smells and vulnerabilities with web scraping technique. Web scraping, web harvesting, or web data extraction is data scraping used for extracting data from websites. In web scraping technique, Selenium library provides sufficient tool to scrap data from Sonar Cloud. A statistical correlation approach is used to create a relationship between code smell and vulnerability that takes both dependent and independent values to measure coefficient of correlation. The conclusion of the study is, there exist vulnerabilities and code smells pair whose correlation coefficient is up to 0.93, which is quite sufficient to justify the results.

References


18. Fabio Palomba, Gabriele Bavota, Massimiliano Di Penta, Rocco Oliveto, Andrea De Lucia, and Denys Poshyvanyk. Detecting bad smells in source code using change history.


Index Terms

Computer Science
Information Sciences

Keywords

Software Quality, Code Smell, Vulnerability