Abstract

Software quality metrics are defined as methods for quantitatively determining the extent to which an object oriented (OO) software process possess a certain quality attribute. Increase in software complexity and size is increasing the demand for new metrics to identify flaws in the design of OO system. This demand has necessitated this study to focus on adopting new metrics for measuring class complexities, for which established practices have yet to be developed. The proposed system works in two stages. The first stage presents new software metrics for measuring class complexity and the second stage analyzes the use of SVM classifier to predict faulty modules. Four new metrics, namely, Class Method Flow Complexity Measure, Friend Class Complexity Metric, Class Complexity from Inheritance and Class Complexity from Cohesion Measure, are proposed. These metrics, combined with 20 existing metrics, are used during prediction using SVM. The performance of prediction system is analyzed in terms of accuracy, precision, recall and F Measure. The experimental results showed positive improvement in the performance of prediction with the inclusion of the proposed metric and SVM classifier.

References


Index Terms

Computer Science
Software Engineering
Keywords