Performance Analysis of Hybrid Approach Comprising Genetic Algorithm and Adaptive Approach on Test Case Prioritization

Abstract

Regression testing is an important domain of software testing, which attempts to verify all the fixes that had been introduced into the software throughout its development period by means of test suites. In spite of being exorbitant in terms of time and cost, it cannot be evaded. As a result, lot many techniques have been proposed in the past in order to minimize these expenses. One such technique is Test Case Prioritization, which works by scheduling the execution order of test cases with a goal of improving the fault detection rate. This paper introduces a hybrid approach to test case prioritization, by combining Genetic Algorithm and Adaptive approach. Initially, it applies the Adaptive approach for the prioritization of test cases. Further, the left over test cases are prioritized by applying the Genetic Algorithm. Finally, the outcomes obtained from the proposed approach are compared with those of Genetic Algorithm based on two parameters: execution time and average percentage of statement coverage (APSC) values. The evaluation results prove that the proposed approach performs better in terms of both the parameters.
References

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**Index Terms**

Computer Science

Algorithms

**Keywords**

Regression testing, test case prioritization, genetic algorithms, adaptive approach