A Multi-threaded Test Automation Framework for Testing Data-centric Applications using Data Processing Algorithms

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Abstract

Testing data-centric applications is always a challenging and a time consuming task. The goal of this paper is to present a test automation framework for testing data warehouse and business intelligence applications using an open source test automation tool. An Implementation methodology for multithreaded test execution is be explained that brings down the test execution time significantly. It is a rigorous task to test the applications with high dimensionality of data as the number of test inputs is huge. Over and above it requires a huge amount of time to test the data-centric application as the test cases needs to be executed with various input combinations to bring out the application failures. An effective way for selecting quality test data using boundary value analysis, equivalence portioning and orthogonal array technique is presented in this paper. A methodology for preparing a quality data set for testing using various
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pre-processing and data mining techniques are experimented. A Strategy data selection and reduction for effective testing is described. A mechanism for reducing the test inputs to perform a risk oriented testing is also presented. Overall, a step by step approach for testing high dimensional data-centric web applications compressively, using selenium, weka and R tools is presented.

References

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Index Terms

Computer Science

Algorithms

Keywords

Test Automation Framework     Orthogonal Array testing     Test Data preparation

Selenium web testing

Risk Oriented Testing

Data Driven Testing
Boundary Value Analysis

Equivalence Partitioning

Rule based data extraction engine (RBDEE).