

WebJUnit

A SIPTECH CASE STUDY

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1. Background

WebJUnit is a web based test harness that provides a web interface for the execution of test cases that follow JUnit3.7 and Cactus 1.4.1 frameworks. The harness allows remote execution of test cases among regression cycles in a multi user environment. Execution results are stored in a database. Various types of reports can then be generated based on user request. Reports can also be generated to reflect the results of multiple regression cycles.

2. Problem / Challenge

The challenge at hand was to develop an environment with an easy to use interface for executing tests written using these two frameworks and providing features like report generation, remote execution and regression testing to ease the job of test engineers.

3. Method / Intervention / Solution used

JUnit and Cactus frameworks were explored in detail and a web based test harness named "WebJUnit" was developed with a well-designed user interface to test the applications. The test harness provides versatile report generation and remote execution facilities.

Test Suites Hierarchy Maintenance - WebJUnit enables the user to maintain a hierarchy of test cases and test suites. Maintenance and retrieval of persistent test cases/test suites hierarchy is one of the challenges faced by developers.

Report generation - WebJUnit provides both detailed and summary report generation facilities, which elaborates test execution results using user defined filters. Capturing test execution and test environment details, across regression cycles for comparative reporting.

EJB Deploy / Undeploy - Incorporating EJB Deploy / Undeploy feature in WebJUnit, which allows the test engineer to Deploy / Undeploy EJB based tests across various EJB containers was a challenge.

Test engineers can create a Project or Test suite using a jar file, which consists of all the required test cases. WebJUnit lets the user create an empty project/ test suite and then add test suites/ test cases when required. WebJUnit has the capability to create and maintain regression profiles by allowing the selection of subsets of the test suite. Such profiles can be used during future regressions.

WebJUnit stores test execution results in a database and facilitates generation of reports on various criteria across regression runs.

4. Results Achieved

Unit tests developed by the software developer can now be reused to form the regression test suite by using the WebJUnit test harness.

5. Lessons Learned / Conclusion

By developing the WebJUnit test harness, SIPTECH has acquired an in-depth understanding of the functionality of JUnit and Cactus. The knowledge gained was extended to understand frameworks built over JUnit and other unit test frameworks.