Idexcel, Inc.

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QA/Testing Case Study

Regression Test Bed

Healthcare

America's homecare leader has been bringing healthcare home for nearly 40 years. A highly-skilled team of clinical associates provides a vast array of homecare services including nursing, disease and pain management, physical, occupational and speech therapy, and assistance with daily activities. Idexcel assisted in developing a collection of regression test cases for existing functionality that represents comprehensive functionality of their systems along with implementing realistic approaches to the type and number of test cases needed. In addition, Idexcel provided leadership supporting the way system and business testing are planned and designed in a collaborative style, significantly reducing the amount of re-work.

Challenge

Idexcel's challenge was to develop and implement an effective regression test bed to cover a significant portion of the production-bound application to increase confidence in new and updated software introduced into the production environment. Secondly, develop the regression test bed in such a way that it can be more easily automated by the test automation staff. Thirdly, create a better way to perform test planning and test design to allow for more collaborative effort between the system test organization and the business test organization.

Solution

Idexcel started the project by performing an assessment to understand the current processes and techniques. Based upon the findings of the assessment, a plan was produced to create a regression test bed along with an overall approach to test planning and design that would be performed more collaboratively. Idexcel implemented a Conditional Testing Model approach for test case writing. This model is one in which the number and types of test cases are carefully planned to ensure than an application has significantly comprehensive coverage. Tests are separated into the following intents:

* Normal (65% of test cases) - Test cases that cover the normal flow of the application with valid input, navigations, and expected results. Each area of the application was broken down, via the site map, to develop a functional decomposition of the system.
* Abnormal (15% of test cases) - Test cases that cover an abnormal flow of the application with invalid input, unexpected navigations, and expected results around error messaging and system recovery.
* Boundary (10% of test cases) - Test cases that cover the limits of an application's logic including tier-breaks at discounting levels, day boundaries at the change in business rules, or any other data that is at the boundary of a business rule change.
* Environmental (10% of test cases) - Test cases that are concerned with environmental aspects of a system and can include elements being unavailable or broken.

Testing efforts were performed across the following technologies and platforms:

* JAVA, JSF, Hibernate, Spring
* C#, SQL Server, Oracle
* Windows Mobile Platform

Results

Idexcel successfully conducted a test program that developed a regression test bed with best practice implementation of the Conditional Test Model and had enough information in the tests to allow the automated testing team to use them as input for automation of the tests. Additionally, a collaborative approach to planning and designing test cases was utilized by the testing and business teams thereby eliminating the redundant iteration of testing, saving time and effort from both teams, and making the overall effort more known and effective.

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