



Case Study

Automated Testing of an Online Time Management Solution

A healthcare technology company needed improved testing of their custom-built online time management system.

A manual test solution was proving to be too costly and time intensive. They turned to us to provide an automated test solution that would save time and money.



The Challenge

QualityLogic has provided automated test solutions for clients in a variety of industries.

When the healthcare technology company approached us to to augment their quality assurance testing on a large online time management system, QualityLogic was ready to assist. Due to the size of the product there were parts of the application that could not be manually tested on a regular basis in a cost-effective and time-efficient manner.

To solve the lack of test coverage, QualityLogic proposed an automated test solution that would augment manual quality assurance testing and save the client precious time and money.

Initial Assessment

QualityLogic's engineers examined the product and the associated test cases that were being used in the client's manual quality assurance testing. Our team identified areas that formed part of an end-to-end regression that were critical to product quality but also very time consuming to conduct manually.

After performing the assessment QualityLogic presented recommendations to our client of the areas most suitable for automation. The client agreed with our recommendation and commissioned the automation work.

Scope

The initial review identified over 100 test cases that were prime candidates for automation. Executing these test cases manually would take roughly 24 hours to complete. QualityLogic's team estimated it would take approximately 220 hours to construct an automation framework and build the associated automation cases.

Tools and Architecture

The test areas identified in the initial assessment were approved for automation and QualityLogic identified the tools and architecture to be used in the project.

Based on the test requirements QualityLogic proposed building a test harness using JAVA and the Selenium Web Driver.

The tests were written in the TestNG framework, which would also provide reports and metrics. The client requested we use Chrome and Firefox as the browsers for the automated test execution.

Development

The development of the test framework and suite took five weeks to complete. As each test case was created, it was thoroughly examined to ensure that fail criteria were properly defined and handled. During the development phase, a significant number of defects were identified in the product under test, and these were corrected as the project proceeded.

Once the development of the test cases was complete, they were incorporated into a system that would run every day to ensure that the system under test was stable and that no defects blocking the established workflows were introduced.

Reporting / Test Execution

Now that the automated testing is in place, the test cases run on a scheduled task each day and reports are prepared automatically and provided to project stakeholders via email and through logs placed into a shared Google drive.

The reports include metrics showing how many test cases passed, detailed failure information, test execution time and duration. Screenshots are also automatically captured by the system when a failure is detected, and these are included with the reports.

Each automated test suite takes approximately two hours to complete for each browser. This reduces the test execution time from an estimated 24 hours of manual testing to approximately four hours of automated testing.

Conclusion

Within hours of the code being deployed, QualityLogic's test automation program consistently identified defects introduced into the key areas of functionality in the client's online time management system. This has resulted in accelerated defect reporting for the areas under test.

The automation has created significant cost and time savings by cutting the test execution manhours to zero per test iteration. Manual intervention is only required to evaluate any defects found. The project provides our client with a much higher level of confidence that key areas of functionality remain operable as the tests run every day. The cost of the automation was offset in the first month of the solution being activated, as compared to performing the testing manually at the same cadence.

For More Information

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