

Chapter 30

A Literature Review on Automation Testing Using Selenium+Sikuli

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ABSTRACT

Automation testing is a methodology that uses an application to implement the entire life cycle of the software in less time and provides efficiency and effectiveness to the testing software. In automation testing, the tester writes scripts and uses any suitable application software to test the software application. Automation is basically an automated process that is comprised of lots of manual activities. In other words, automation testing uses automation tools like Selenium, Sikuli, Appium, etc., to write test script and execute test cases, with no or minimal manual involvement required while executing an automated test suite. Usually, automation testers write test scripts and test cases using any of the automation tool and then groups test several cases. Here, we will discuss a neat case study explaining the automation testing using a hybrid test script.

1. INTRODUCTION

Software testing can be done in following two ways which are following:

- Manual testing
- Automation testing

Manual testing is carried out by any manual tester in which a tester or a human being sit in front of a personal computer or any electronic gadget and carefully execute the test cases whereas an Automation Testing means test any software application by using any automation tool to execute your test case suite. The automation software can also enter test data into the System Under Test, compare expected and actual results and generate detailed test reports. Test Automation demands considerable investments of

DOI: 10.4018/978-1-6684-3694-3.ch030

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money and resources. Successive development cycles will require execution of same test suite repeatedly. Using a test automation tool, it's possible to record this test suite and re-play it as required. Once the test suite is automated, no human intervention is required. This improved ROI of Test Automation.

Automated software testing is important due to the following reasons:

1. Automation helps increase test coverage
2. Manual testing can become boring and hence error prone.
3. Automation increases the speed of test execution
4. Automation does not require human intervention. You can run automated test unattended (overnight)
5. It is difficult to test for multilingual sites manually
6. The main goal of automation testing is to increase the test efficiency and develop software value.

In this paper, we will provide literature review of Selenium and Sikuli automation testing tools which can be used to automate any test case and we will form the problem criteria with both tools (individually).

2. AUTOMATION TOOLS

In this paper, we will actually come to know about Selenium and Sikuli automation tools and their advantages over each other along with the hybrid test script advantages over these individual tools.

Selenium is the most popularly used cross-platform, open-source and freeware automation tool for web applications. The benefits of Selenium for Test Automation are immense. Selenium script can run across multiple browsers, operating systems. Selenium offers a user-friendly interface that helps create and execute tests easily and effectively. And, Selenium is not just a single tool but a suite of tools which are following:

- Selenium Integrated Development Environment (IDE)
- Selenium Remote Control (RC)
- Selenium WebDriver
- Selenium Grid

There are various pros of Selenium which may be following:

- Selenium tests are able to run under multiple browsers.
- Although Selenium has its own scripting language, but we are not limited to test only that language in which Selenium script was designed.
- Selenium supports cross browser, cross platform scripting.
- Efficient test cases execution.
- Allows user to write script in various languages.
- Supports API testing.
- Selenium can also execute tests even when the browser is minimized.
- Selenium can test applications that are rich in AJAX-based functionalities.

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