Automation Approach for Dynamic and Responsive Web Applications

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Abstract

Automated Testing for application is being done over a last few decades, however, creation of applications in terms of newer technology and platforms has seen many changes. Web applications being a major contributor towards new era of application, QA teams struggle to automate new characteristic of these applications. This paper presents an approach of automating the responsive and dynamic side of these web application.
Good for many, Challenging for some (Problem Statements)

- Challenges faced in component which is in dynamic nature
- Applications with dynamically changing object properties
- Testing RESTful web service in sync with testing Application
- Lack of Automation Framework (for Responsive design testing)
- Challenges to Automation testing in 3rd Party UI Frameworks
Why a need of new Solution (Proposal)

A combination of tools which satisfy the following criteria:

- Automation and responsiveness validation goes hand-in-hand
- No matter how the AUT designed.. ? In-house or Third party integrated
- Environment friendly, Bundled with the OS IDE/ Should be installed separately
- Web Services: Can automate the RESTful API
- Reporting : A comprehensive, generic and self explanatory report format (like html)
Framework

Component Diagram

Data Engine
- ODBC Connector
- Automation Suites, Stories, Functional plan/scripts
- Data required to drive the Test Suites/scripts
- Object Repository
  - AUT locators, Framework Configuration

CODEBASE
- cURL
- JAVA
- Selenium WebDriver

Reports/Execution Analysis
- Logs
- .HTML file
Tools / API’s Used in this framework

- Selenium WebDriver:- WebDriver for automating web application testing, and in particular to verify that they work as expected and to check the responsiveness of the app if the resolution changes.

- cURL:- To test the RESTfull API over the Command Line through Java.

- Extent Reports:- To generate .HTML Report Summery.
1. Open a page in browser.
2. Resize it to specified size.
3. Test the layout according to user-defined specs.

* AUT: Application Under Test
Report Summary

**ABC Application**

**Tests View**
- 10 tests passed
- 5 tests failed, 0 other

**Steps View**
- 9 steps passed
- 7 steps failed, 80 other

**Pass Percentage**
- 67%

**Tests**
- AT_03803
- AT_03992
Benefits:

• Comprehensive solution on tracking, monitoring, test execution and analysis
• One stop solution for:
  – Functional testing
  – Automation
  – responsive validation
  – RESTful API validation
• Seamless automated solution to provide cost effective and timesaving solution.
References & Appendix

- http://toolsqa.com/selenium-webdriver
- http://www.softwaretestinghelp.com/
Author Biography

Hardik Verma received degree in Information Technology from Mumbai University with 2 Years of experience. A strong advocate for “fun at work”, he is constantly involved in development of Software testing automation using various automation languages such as 4Test, JAVA, PYTHON, RUBY, etc. His professional interests focus on Automation, UI Designing, Database Designing, etc. and his current projects include Creation of Automation Framework to Test RESTful API and Web UI in a cloud centered environment using SilkTest, Selenium and Silk Central.

In addition, he serves as Software Engineer for Capgemini, Automation QA instructor, and is a member of Mozilla Developer Network Community.
Question & Answers