RESEARCH ARTICLE OPEN ACCESS

Functionality Appraisal of Automated Testing Tools

Tarannam Bharti[1], Er Vidhu dutt[2]
M.Tech[1] Department of Computer Application
Department of Computer Sciences[2]
JCD Vidyapeeth Sirsa Guru Jambeshwar University, Hissar
Haryana - India.

ABSTRACT
Testing is the process of evaluating a system or its component(s) with the intent to find that whether it satisfies the specified requirements or not. This activity results in the actual, expected and difference between their results [1]. Testing reduces the cost, time to rework and error free software that is delivered to the client. Testing can be done in two types manually and automating. In manual testing testing is done without any tool but in automating testing. Testing is done with the help of tools like QTP (quick test professional), Selenium and Test complete etc. The aim of this research paper is to study the testing tools with test cases based on different parameters for getting the better results.

Keywords:- Selenium, QTP, Test complete

I. INTRODUCTION

Selenium Integrated Development Environment (IDE) is a free and open source add-on for the Firefox Web browser. It is primarily used by the Web development community to perform automated testing of Web applications. Selenium IDE provides an integrated development environment in which to create, debug and run custom scripts that automate actions in a Web browser.

Recording a Script with the IDE

The Selenium IDE supports capture playback of test scripts by recording the actions you take when browsing web sites, and then replaying these in the browser. To run the Selenium-IDE, simply select it from the Firefox Tools menu.

The Base URL field at the top of the Selenium-IDE window is very useful for allowing test cases to be run across different domains Any test cases for these sites that begin with an **open statement should specify a relative URL as the argument to open rather than an absolute URL** (one starting with a protocol such as http: or https:). For example, the test case below would be run against http://fontconverter.gosht.in about.html: The selenium IDE window is shown below:-

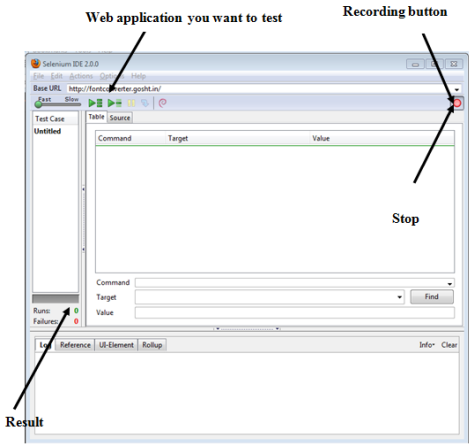


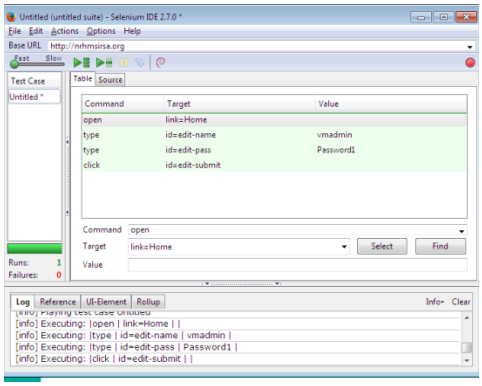
Figure 1.1 Selenium window used for URL

We test the Web application http://fontconverter.gosht.in using selenium testing tool. The Test cases for the user login is shown below:-

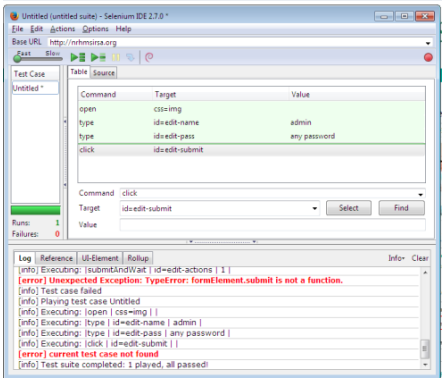
Table 1.1 Test case for the user login

Test ID	Objective	Input/Steps/Action/Description	Expected Result	Actual result	Status	Remarks
log001	To check the user login	User will provide the correct user name and password registered	User will be successful in login the application and Welcome page will appear.	User login successful and welcome page appear	Pass	Login successful.

Test case: - Test case is a document that includes a procedure to perform testing. A test case includes a set of test inputs, execution conditions, and expected output developed for a particular objective, e.g. to check a particular program path or to verify that the specific input will meet with the desired output. There is no prescribed format for writing a test case. , but a test case must include input, expected behavior, expected output showing (figure 4.2).



Black box testing with positive value



black box testing with negative value

Test ID	Objective	Input/Steps/ Action/ Description	Expected Result	Actual result	Status	Remarks
log002	To check the user login	User will provide the incorrect user name and password	User will be unsuccessful in login the application and invalid user name and password error message will appear	User login un - successful and invalid user name and password appeared	Fail	Result as expected

Table 1.2 Test case for negative value

We cannot perform data driven testing in selenium directly. But we can enhance the functionality of this testing tool using Sel Blocks plugin for data driven testing and Test result plug in to show the result of test case execution.

The other test case we have written is for incorrect user name and password. According to the expected result, application should show the error message as wrong user name and wrong password.

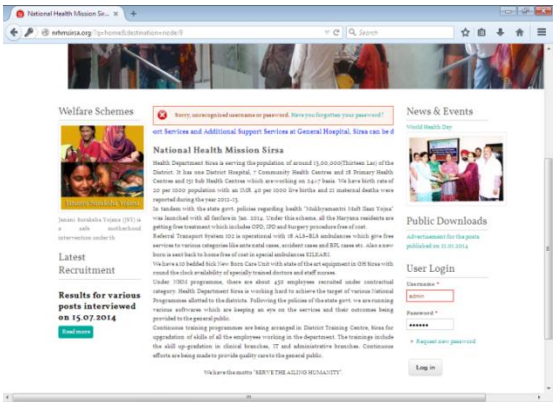


Figure 1.2 Output Window for negative values

When the tester fills wrong user name and wrong password, the expected outcome should be an error message on the application window. As the actual result and the expected result is the same, this shows that test case executed is passing.

2.1 Quick Test Professional 10.0.0

Quick test professional is automated testing tool meant for performing functional and regression testing of various software applications and environments through a user interface like native GUI or web interface. It uses VBScript as the scripting language for specifying a test procedure, and for manipulating the objects. It provides the industry's best solution for functional test and regression test automation. This next-generation automated testing solution deploys the concept of Keyword-driven testing to radically simplify test creation and maintenance.

QTP is based on two concept-

* Recording

* Playback

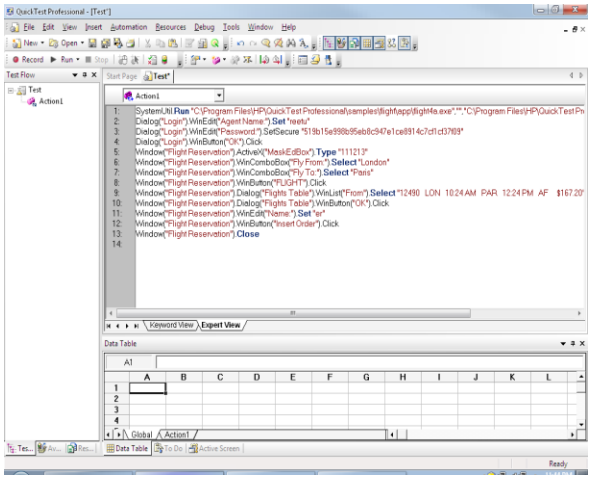


Figure 2.1 Testing Of Window Application testing on web app.

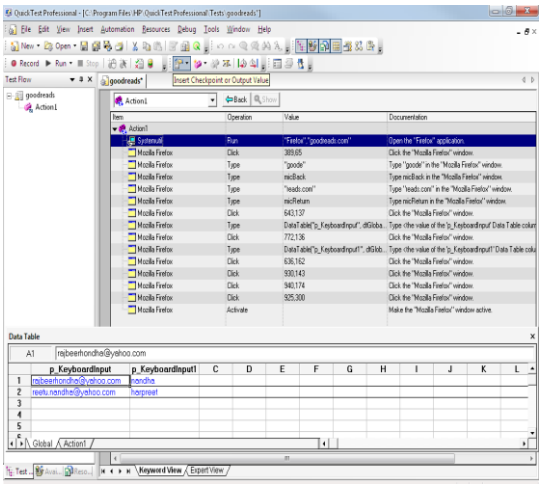


Figure 2.2 Command Window while performing data driven

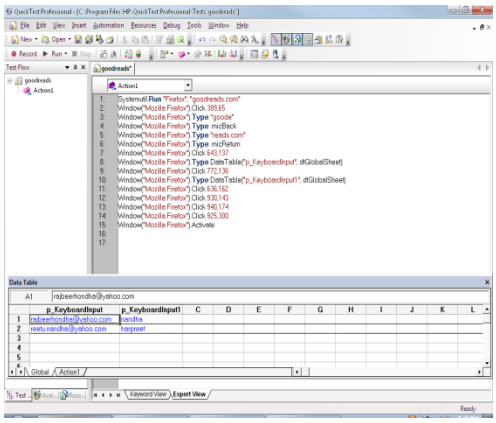


Figure 2.3 Script Window while performing Data driven testing

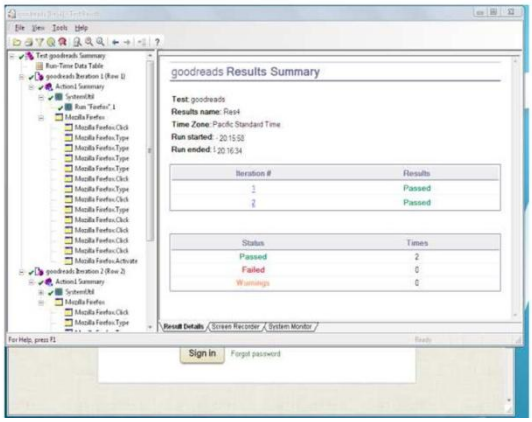


Figure 2.4 Test result for Web Application Goodreads

3.1 Test Complete

Test Complete is an application that helps you automate software quality tests for websites, web applications and Windows desktop applications. It has easy record and playback, _ flexible scripting and even custom frameworks to automate all your software testing. TestComplete is an automated testing tool that lets you create, manage and run tests for any Windows, Web or Rich Client software. It is an automation tool provided by Automated QA for testing Win32 and .NET applications.

TestComplete provides a feature packed IDE with syntax highlighting, code completion, context sensitive help and advanced debugging features. This gives you powerful tools when developing scripts, and helps new users come up to speed on the rich capabilities in TestComplete.

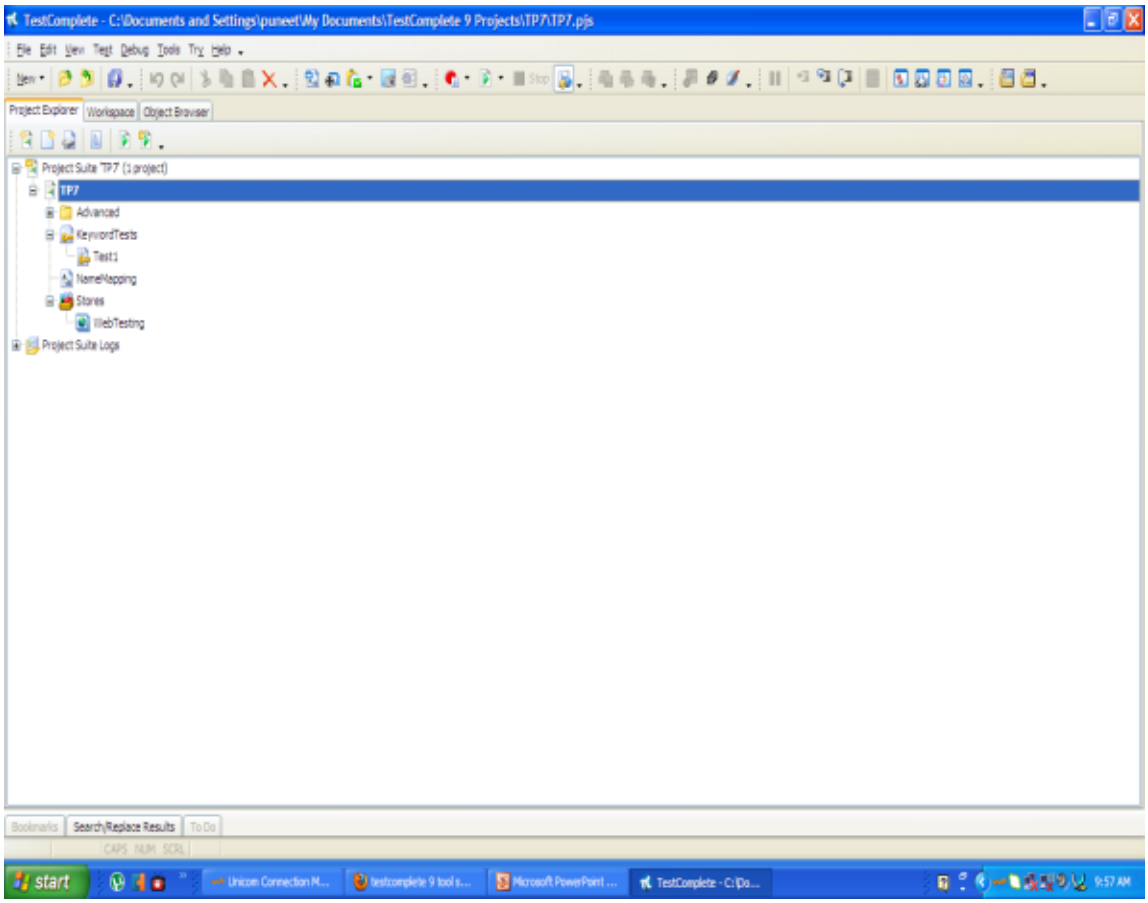


Figure 3.1 Integrated Development Environment of Test Complete

Project Organize: Project is a very important part of Test Complete. It reflects your automation approach and how you want to organize your scripts. You may have one project for entire application if the application is small or separate projects for different components of a complex application and combine all of them into one Project Suite. In either case a project will contain all the information about your application under test. Scripting language used in the project is also defined while creating the project.

Working with Test Complete Working in Test Complete is easier as compared to other tools such as Selenium and QTP. As mentioned earlier, it supports different languages like VBScript, JScript, DelphiScript, C++ and C#. For applications written in Delphi, Test Complete is one of the best tools.

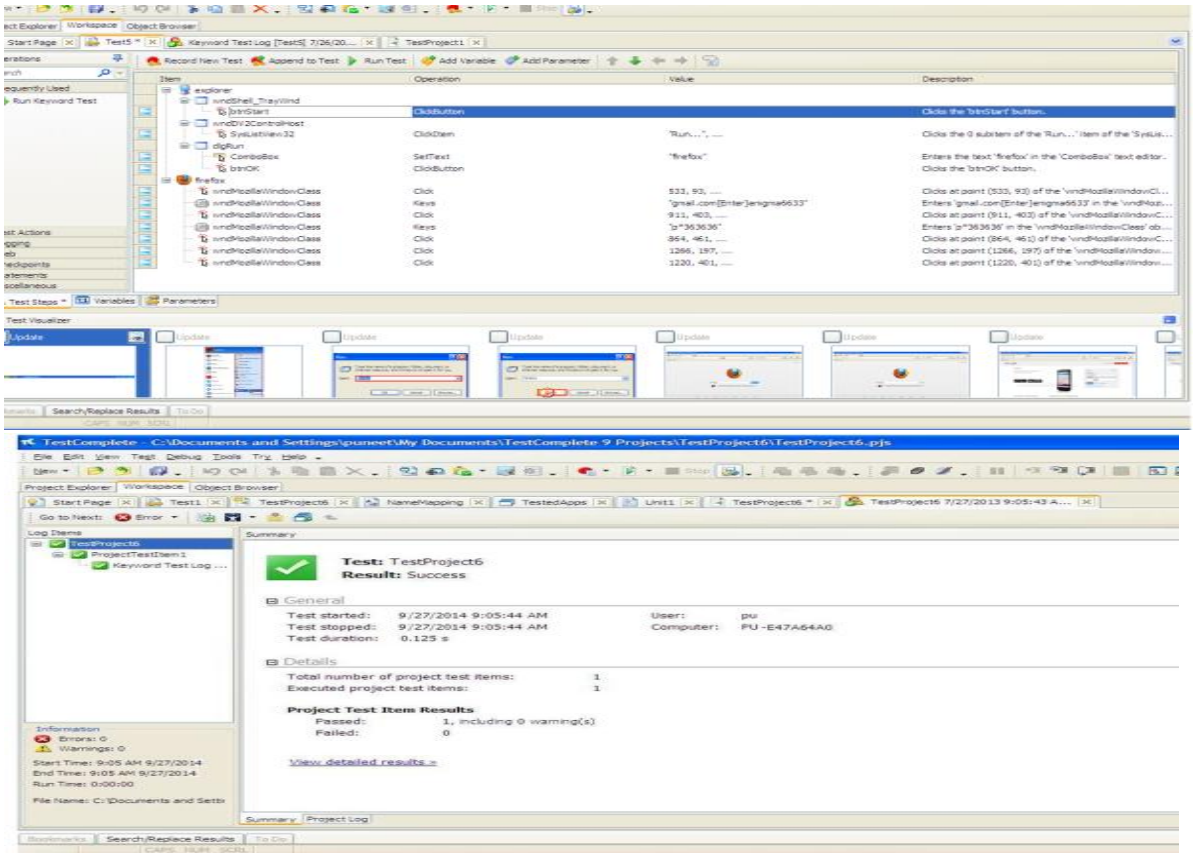


Figure 3.2 Testing of Web application in Test Complete notepad

Figure 3.3 Result window for window application

Open Application: Another important pillar of TestComplete is the concept of open applications. According to Automated QA 'Open Applications are applications instrumented for white-box testing under TestComplete.' In Open Applications the different published properties of the controls of your application are can be accessed externally, i.e in your automation scripts.

IV. CONCLUSION

The objective of performing above experiments was to evaluate the three tools in terms of performance and the other aspects such as ease of use, ease of installation, OS compatibility, test script generation facility etc. After performing the experiments while keeping the above considerations in mind, It is really difficult to rate one tool above another. A tool can be selected on the basis type of application need to be tested, budget, and the efficiency required. If your test automation requirements get satisfied with Test Complete, there is no need to go for QTP where cost goes higher by many folds. Though QTP offers much more functionality, it is just a versatile tool for a critical and more risky Application Under Test. Selenium should be preferred in the case where the type range of applications do not vary much and budget is small. Though QTP is a high priced tool it tenders the marginal difference in facility and reliability among the three.

ACKNOWLEDGMENTS

We wish our sincere gratitude to JCD vidyapeeth Sirsa Haryana, India for providing the facilities to carry out the work.

REFERENCES

[1] Ms. Shikha maheshwari1 „A Comparative Analysis of Different types of Models in Software Development Life Cycle" International Journal of Advanced Research in Computer Science and Software Engineering Volume 2, Issue 5, May 2012.

[2] Innovative approaches of automated tools in software testing and Innovative approaches of automated tools in software testing and current technology as compared to manual testing Global journal of enterprise of information system, an 2009-jan 2009.

[3] Sneha Khoria and Pragati Upadhyay „Performance Evaluation and Comparison of Software Testing Tools" VSRD International Journal of Computer Science Information Technology, Vol. 2 No. 10 & October 2012.

[4] Software Test Automation - http ://en.wikipedia.org/wiki/Test automation

[5] Mohd. Ehmer Khan, "Different Forms of Software Testing Techniques for Finding Errors,"IJCSI International Journal of Computer Science Issues, Vol. 7, Issue 3, No 1, May 2010.

[6] Jovanovich and Irena, "Software Testing Methods and Techniques," May 26, 2008.

[7] Quick Test Professional entry in Wikipedia: Http: //en.wikipedia.org. /wiki/HP_QuickTest_Professional.

[8] Mercury Quick Test Professional tutorial, version 8.0.Mercury Interactive Corp oration, Documentation, 2004.

[9] Automation testing www.guru99.com/ automationtesting. html.

[10] Richa Rattan, Department of Computer Science, Hindu Engineering College, Sonipat, Haryana, INDIA, Comparative study of automation testing tools: Quick Test Professional & Selenium, VSRD

[11] International Journal of Computer Science & Information Technology, Vol. 3 No. 6 June 2013.

[12] Manjit Kaur, Raj Kumar, Department of IT, UIET, PanjabUniversity, Chandigarh, India, Comparative study of automated testing Tools: Test Complete and Quick TestPro, International Journal of Computer Applications (0975-8887) Volume 24-No. 1, June 2011.

[13] Vishawjyoti and Sachin Sharma,dec 2012,Study and Analysis of Automation Testing Techniques, Dept of Computer Applications, Manav Rachna International University, Faridabad, Vol3, No 12,36-43.

[14] SanjeevDhawan,NirmalKumar, Divya Sethi, Department of Computer Science and Engineering, University Institute of Engineering& Technology (U.I.E.T), Kurukshetra University, Kurukshetra- 136 119 (K.U.K), Haryana, INDIA, Automated Testing of Web Enabled Systems through FSM and Quick Test Professional, International journal of software and web science (IJSWS) .

[15] NidhikaUppal, AP,may 2012, Design & Implementation in Selenium IDE,IT Department, GIMET, Amritsar, International Journal of Computer Applications (0975 – 8887) Volume 46– N