

# [Td for web testing and the most suitable](https://assignbuster.com/td-for-web-testing-and-the-most-suitable/)

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cjk { font-family: “ Noto Sans CJK SC Regular”; font-size: 12pt; }p. ctl { font-family: “ FreeSans”; font-size: 12pt; }a: link { }Tableof content1. Abstract……………………………………………………………. 12. Introduction……………………………………………………….

.. 23. Tools Description………………………………………………….. 34. Feature Description………………………………………………..

. 45. Comparison of Tools………..…………………………………….

.. 56. Conclusion…………………………………………………………. 67. References …

……………………………………………………….. 71. Abstract: Animportant part of Software Development Life Cycle is softwaretesting. Nowadays, there are several tools available that are webbased and serve the testing purpose very well. One reason for it’ssuccess may be the fact that they run on any web browser. The systemwith increased efficiency and less cost is more preferable. Thediscussion here is about the comparison of different web automationtesting tools.

This will serve two principles, one being theunderstanding of all these tools and secondly, The information aboutthe popular and competent tools available out there. Many browserssupport these testing tools and provide API’s and webdrivers. These API’s are used in different languages to writeappropriate script for testing.

One parameter to consider whilechoosing one of these tools as the best tool is how well and easilyit can be integrated. The other parameters being performance and costof each tool. The other thing to consider is that the tool must besuitable for the application it is going to test. 2. IntroductionThispaper focuses on a thorough comparison between the leading webautomation testing tools. This comparison takes into account all theimportant parameters necessary in determining both the best tool forweb testing and the most suitable tool for a person’s specificapplication.

The key features that are considered in comparison are: OS, Language, Type, and Browser support etc. The objective here is toinvolve all the important parameters that can be used to completelydistinguish all the tools and help justify the preference of one ormore over others. Such as the platform support which can determine ifa certain tool can serve as a cross platform tool or a platformspecific tool. Typesof testingStaticand dynamic testing: Instatic testing it isn’t necessary to execute the program while indynamic testing the program needs to be executed. Thebox approach method: Thebox approach method involves white-box and black-box testing.

Manualand automation testing: Themain difference between automation testing and manual testing is thatthe manual testing does not require any tool while the automationtesting requires automation of the manual testing process. Webautomation testing and tools: Webtesting: Thesoftware with complete focus on web applications is called webtesting tool. Webautomation testing: Themain goal of using web automation testing is to check if the websiteis flawed or has errors in it’s basic functionality as well asevaluating other features of the website such as responsiveness androbustness. The benefit of web testing however, is to use the samescript on different platforms, as cross platform web browsers areeasily accessible. Features: Savestime and moneyImprovesaccuracyIncreasestest coverageDoeswhat manual testing cannotToolsSeleniumHP-QTPTest-completeWatirWETSilk-testWinRunner3. Tools Description: Selenium: Seleniumis a web testing framework that is especially known for it’sportability. It enables the tester to develop test scripts withouthaving to learn a specific language. Seleniumsupports a range of tools for a range of requirements a scriptrequires for web automation.

Webtesters mostly use only a few of the tools supported by selenium butit is always a good idea to get full understanding of allthe provided tools. Seleniumis a rich web testing framework that provides all the web-orientedtools. Thishelps bind all the operations of the tool according to the websiteand its functionality. Theselenium’s ability to support multiple browsers is probably it’smost important feature.

Thebasic use of Seleniumis functional testing of web applications. Seleniumis suitablefor agile testing. Seleniumis a free and cross platform software meaning that it runs on Linux, Windows and Mac. HP-QTP: QTP(QuickTestProfessional)is developed by Hewlett Packard (HP). Itdoesn’t need to be monitored by the tester while it performs anautomated web testing of a web application. Whenthe script is written, it uses a VBScript (Visual Basic Scripting) toautomate the web application.

Becauseof the availability of the scripting engine in Windows OperatingSystem, there is no need to install ownyour own. The VBScriptthat comes with Windows 7 is of version 5. 8.

VBScript is anobject based language. Itfeatures automated regression testing which helps find errors ordefects inthe application’s performance that is being tested against therequired output or result. Itonly supports WindowsOperatingSystem and it lacks multiple language support for writing scripts. Test-complete: Test-Completeis equipped with a graphical interface. It uses a technique calledrecord-playback to automate testing. It enables the tester to useunit testing, functional testing, GUI testing, regression testing anddistributed testing.

Test-complete is used for web applicationtesting and desktop application testing limited to Windowsapplication. It analyzes the features and the shortcoming of theapplication and performs evaluation according to the requiredconditions. It is an essential step in the process of SDLC (systemdevelopment life cycle). Companies that develop softwares strictlyfollow the process of SDLC as a guide while testing applications. Thetype of application as well as the cost regarding the use of the toolare the parameters that dictate theselectionof tool to be used. Asit supports both the web application and windows application testing, there is a range of types of testing regarding web applications andwindows applications, which are as follows: functional testing, unittesting, regression testing, manual testing, data-driven testing, object-driven, distributed testing, HTTP load testing, and stress andscalability testing. It does that in an environment with completeautomation testing tools thatsupport Windows, web, Java and .

NET application testing. It relivesthe the developers of the excessive energy and time a manual testingrequires. Watir: Itis developed with Ruby which is an object-oriented scriptinglanguage. Theis used for system testing of large scale systems, automating useracceptance testing and functional testing. Watiruses programming language to write scripts that enable user tocontrol web page’s objects such as HTML and JavaScript directly.

Itis free and open source software. HTMLand test scripts have no layers between them which makes it easy tocreate user specific scripts without having to worry about it’slicense as it is free of cost. WET: WETWeb Tester is a web based testing tool that drives an IE Browserdirectly and so the automated testing doneis equivalent to how a user would drive the web pages. The toolallows a user to perform all the operations requiredfor testing web applications – like automatically clicking a link, entering text in a text field, clicking a buttonetc. One may also perform various checks as a part of the testingprocess by using Checkpoints.

The latest versionof WET is 1. 0. WET sits on top of Watir, an automated test tool whichuses Ruby scripting language.

WETretains all the features that Watir has and adds many usabilityrelated functionality 10. WETstarted off as a small extension library for Watir – Watir ExtensionToolkit. It has come a long way and isnow bundled with many compelling features. As the WET code base hasgrown multiple times, it now uses Watirjust as the library to drive IE. WET not only offers all that Watiroffers but many more powerful features to maketest automation effort a success. It’sbase code has received a massive increase which helped it becomestand alone software with an independent identity.

Itwas once considered an extension of Watir but now it is identified asWET. SILK-TEST: Itis developed by Segue. It is used for: regression testing andfunctional testing for large-scaledapplicationsservingenvironments like . Net, Web, Java or a client-server. Itprovides a range of features to choose from making it a highlyefficient automation tool for software testing.

Customization, creating tests using work-flow , validation, complete data baseaccess, robust and flexible testing, automated recovery system, multple platform, browser support are among these features. Win-Runner: Automatedtesting with WinRunner addresses these problems by dramaticallyspeeding up the testing process. You can create test scripts thatcheck all aspects of your application, and then run these tests oneach new build. As WinRunner runs tests, it simulates a human user bymoving the mouse cursor over the application, clicking Graphical UserInterface (GUI) objects, and entering keyboard input—but WinRunnerdoes this faster than any human user. 4. Feature Description: Selenium: Easy touse and adoptNo needto learn test scripting languageBrowserindependent FreesoftwareRuns onmajor platforms i. e Windows, Mac, and LinuxHP-QTP: Noskilled coder is requiredObjectOriented programming languageEasy touse and navigateEasymonitoring and schedulingSupportstestingof MobileApplicationsTest-Complete: Fullyautomated test recording from interactive usage of the applicationUseskey-word driven testingTestvisualizationData-driventest using test, Excel and Database data sourcesMulti-browsersupport and cross-browser testing WATIR: Itsupports cross-platformsRequiresskilled coder Stringand dynamic typing discipleWrittenin Ruby (Programing language)Doesnot run multiple scriptsWET: Record-playbacktechnique is used for automationSettingparameters of objectsSupportmultiple scripts ScriptRe-usabilitySupportsIntegratedData DriventestingMakescreation of scripts easySILK-TEST: Provides24/7 unattended testing BasicWork flow for rapidproductivityUsesexternally stored data for DataDriven Work flow totest business logic functionalityAuto-Completefor instanttestautomation andcustomizationinfrastructure developmentOrganizingand sharing test information withthe help of Project WorkspacesRe-usabilityand maintenance of scripts and tests are made easy with the help ofGUI Scriptinglanguage is extensible, easily maintainable and highly portableDistributedtesting for efficient usage of excessiveportability and hardware resourcesSilk-Testprovidesreporting and execution of tests on runtimeWin-Runner: Testingtool for functional regressionOnlysupports Windows platformOnlyfor applicationsbased on GUI (Graphical User Interface) UsesOOT (objectoriented technology)conceptForstatic content onlyRecord-playbacktool5. Comparison of ToolsS.

noNameof toolLanguageuseOSTypeRelease/DevelopmentyearLicenceDevel-opmentstatusDevelo-perLanguagesupportedBrows-ersupport1SeleniumJavaCross-plat-formSoftwaretesting framework for web applicationMay22, 2013,(2004)Apache2. 0ActivreJasonhugginsDomainspecific languageAllmajor developer2HP-QTPVBscriptMS-wind-owsTestautomation2006proprietaryActiveMercuryInteractiveVBscriptFirefox3. 0 and later Google chrome3Test-CompleteJavaMS-windowsTestautomationSept. 32013/ 1999proprietaryActiveSmartBearsoftware Inc.

VBscript, Jscript, C++, C#script, DelphiScriptIE, Firefox, Google Chrome4WatirRubyCross-plat-formSoftwaretesting framework for web applicationSept. 30, 2012BSDActiveBretPettichard and Paul RogerJava,. Net, c#IE, later multiplebrowsers5WETRubyMS-WindowsWeb-BasedTesting Tool2012MITActiveGov.

of CanadaRubyIE6Silk-test4TestScripting languageMS-windowsTestautomationOct. 10, 2012proprietaryActiveSeguesoftwareJava, 4Test, VB, C#, VB. netIEand Firefox7Win-RunnerClanguageMS-windows, LinuxLoadTesting Tool2006proprietaryActiveHPsoftware divisionTestScripting languageIE, NetscapeSelenium: Ituses Java language and also supports cross-platform. It has Apache2. 0 and it runs on all web browsers. It has language support fordomain specific languages.

HP-QTP: Ituses and supports VB Script and operates on MS-Windows. It hasproprietary license. It runs on IE, Firefox and Google Chrome.

Test-Complete: Ituses Java language and has MS-Windows support. It has proprietarylicense. It runs on IE, Firefox and Google Chrome Browsers. Itsupports VB Script, JavaScript, C++, C#Script and Delphi Script. Watir: Ituses Ruby language and supports cross platforms. It has BSD license.

It initially had only IE support but later it received multi-browsersupport. It supports java, . Net, and C#. WET: Ituses and supports Ruby language and has MS-Windows support. It hasMIT license.

It has IE (browser) support. Silk-Test: Ituses 4Test scripting language and has MS-Windows support. It hasproprietary license. It runs on Internet Explorer and Firefox. It supports Java, 4Test, VB, C#, and VB. Net. Win-runner: Ituses C language, and has MS-Windows and Linux support.

It hasproprietary license. It runs on IE and Netscape. It supports testScripting language. 6.

ConclusionWeanalyzed variousweb automation tools in this paper. Aweb automation tool tests a web application for flaws or errors ofany kind without performing any manual operation . Thereare a number of web automation testing tools that serve this purpose.

To decide which tool is best, one has to tally the requirements withthe tool’s features. For instance if an organizations is lookingfor rapid results he will go for speed and if an organizationstruggles with their budget, it is likely to search for a costeffective tool. The requirements can be categorized according to thefeasible tools.

Ifan organization requires speedintesting then the possible testing tool is Test-Complete, but the tools comes with a cost. The Test-Complete has to be licensedand it’s license is quite costly. So if the organization prefersspeed over cost then it will be the right call to use Test-Case. However it the organization can’t handle the cost then they willhave to manage the trade-off. Onthe other hand if an organization wants a tool that is costeffective, they may have to settle for a tool that has a very slowtesting speed. Or if the material to be tested is on large scale thetool should be chosen according to this specific need.

For examplefor large-scale testing Watiris most suitable choice. So it is clear that a tool is best for a jobonly if it is chosen according to the need. Anorganization that wants a balanced tool may consider Selenium. It is both cost effective and flexible but again it is not best knownfor its speed. So in general it is a good tool but specifically- wellit depends on the specifications.

Finally, all testing tools have their strengths and weaknesses or limitations. It is important to know the requirements to choose the best tool fora test case to perform most effectively. All cases are to be judgedby their suitability instead of their shear performance or cost. 7.

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