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Why Is Selenium The Most Sought After Automation Testing Tool? – A Study

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Abstract

This paper studies Selenium as the most effective software testing method. With the world literally moving into automation with the fast rising technological developments, automation testing plays an important role, though the role of manual testing is inevitable.

Keywords: Software testing, Software Engineering, Selenium, Manual testing, automation testing, open-source.

Introduction

Software engineering is the face of the emerging technological world. It is nothing but designing and programming of computers and electronic devices, or in other words, it tells us how computers and electronic devices interact or communication within itself or with each other. With the IT field moving from macro to nano or even smaller, efficient engineering techniques are needed to develop new devices and technologies. By efficient we mean nothing but a system that works effectively with minimum errors or bugs associated with it. It here where the role of software testing comes into play.

Software testing is a study conducted on the system under construction or under development to identify any possible errors or issues that may arise in the future, if not already existing. It helps to study what all issues will the potential user face if the software is installed or implemented. This gives the stakeholders a chance to work on the issues faced in an effective manner and in some cases they can discontinue the production if needed. A software tester is the person responsible for testing the software and is expected to think in in such a way as to find out as much possible cases as can be to ensure the newly developed system is working as expected, without interfering with existing situations, like system crash downs, slowing down the system, cause some existing functionalities to not work properly etc. generally we can say that it checks the following about the system or component under test:

- Requirements based on the design and functionality used for its development is met,
- For all kinds of inputs, the response is correct or as expected,
- Functions are performed in an acceptable time,
- Is compatible with all kinds of environments, and
- Meets the stakeholder's desire.

Software testing is done either as waterfall model or agile model. In the waterfall model, testing is phased, as it begins after requirements are received and continued till finish. While the agile method is an iterative process where requirement gathering, programming, and testing happens side by side. Whichever be the method taken up, it can either be done manually or programmed to work on its own ie automated.

Due to the many advantages like more efficient less time taken, easiness to fix errors etc automation testing is preferred over manual, but still, there are areas where manual has to be mandatorily done like when there is a tight deadline or managing data are difficult etc.

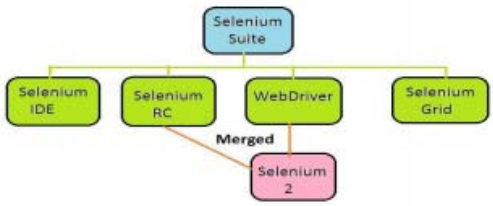
Why Selenium?

Selenium is one of the most commonly used automation technique used worldwide. It is an open source automation testing tool having a collection of language-specific bindings to drive a browser.it is cross-platform compatible, and supports many scripting languages. Open source software is a computer software available in source-code form, which permits the user to study, modify, improve and also share the software with others. It is affordable and transparent.

Components of selenium:

i. Selenium-IDE:

- It is a plug-in for Mozilla Firefox.
- The test cases are recorded and played.
- The test steps can be converted to corresponding scripting languages.



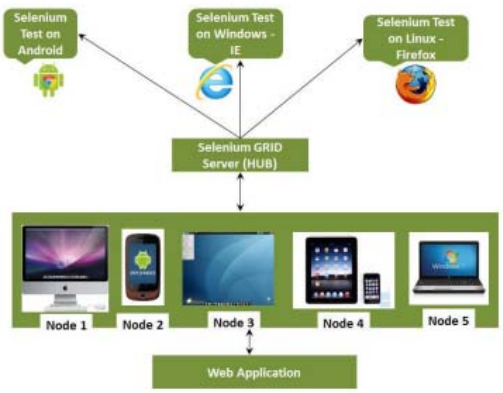
ii) Selenium Web Driver:

- Drives a browser natively either locally or on remote machines.
- It's not tied to any particular test framework.

iii) Selenium-Grid:

a. It distributes transparently on multiple machines.

b. Tests runs in parallel, cutting down the time & load



Advantages of selenium:

1. It is an advanced open source tool.
2. Many scripting languages like Java, C#, Ruby, Perl etc are supported.
3. Some of the selenium versions like Selenium 2.0 support android application testing.
4. It is cross-platform and cross-browser compatible.
5. The cost of installation is negligible as it is a freeware.

Disadvantages of selenium:

1. It can only be used for testing web applications.
2. There is no tool supports available as it is open source.
3. Selenium IDE can be installed only in Firefox.

Conclusion

Selenium is a software tool which works with different browsers, operating systems, various programming languages etc. it is user-friendly, affordable, transparent system. There are still a few drawbacks associated with using selenium, which needs to be addressed to make it the perfect option.

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