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REVIEW OF TESTING SOFTWARE. SELENIUM SOFTWARE

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Анотація:

У даній доповіді розглянуто основні продукти програмного забезпечення під назвою Selenium та переглянуто їх функціонал.

Ключові слова: тестування, програмне забезпечення, тест-кейси, баги, Selenium.

Abstract:

This article examines the major software product of Selenium project and tells about their functionality.

Keywords: testing, software, test cases, bugs, Selenium.

Introduction

Nowadays, due to the constant improving development of the software, it is necessary to spend more and more time to checking it. [1,2] In this article I want to review ways for testing automation. I want to get your attention on most popular testing environment Selenium and review product that connected with this project.

Selenium Environment

Selenium is a project that develops a series of open source software products [3] such as:

- Selenium WebDriver,
- Selenium RC,
- Selenium Server
- Selenium Grid,
- Selenium IDE.

We will take a look on every product that I was mentioned above. Every product has unique purpose in testing process and can be combined with other products.

Firstly, I want to tell about Selenium WebDriver, because it's the main product of Selenium Project. Selenium WebDriver is a software library for operating and manipulating with browsers. The shorter name WebDriver is also often used.

WebDriver is a family of drivers for various browsers, plus a set of client libraries for these drivers in different programming languages such as Java, Python, C++, etc.

 Many types of WebDriver are being developed for Firefox, Internet Explorer, and Safari browsers. The driver for the Google Chrome browser is being developed as part of the Chromium project, and the driver for the Opera browser is being developed by Opera Software. Therefore, they are not formally part of the Selenium project, because they are distributed and supported independently. But logically, of course, they can be considered part of the Selenium product family. Also, there are libraries that are developed for the languages Java, .Net (C #), Python, Ruby, JavaScript.

Second product in Selenium project list is Selenium RC. Selenium RC is the previous version of the browser management library. The abbreviation RC is stands for Remote Control of browser. From a functional point of view, this version is significantly inferior to WebDriver. Now it is in a frozen state and this product is not developing for now. Many of users that has encountered with Selenium RC limitations is encouraged to switch to WebDriver.[3]

Sometimes Selenium RC is also called Selenium 1.0, while WebDriver is called Selenium 2.0. Although in fact the distribution version 2.0 includes both implementations at the same time - both Selenium RC and WebDriver. From a technical point of view, WebDriver is not the result of the evolutionary

development of Selenium RC, they are built on completely different principles and they have practically no common code. What unites them is the fact that both implementations were made as part of the Selenium project.

Next is Selenium Server. Selenium Server is a server that allows you to control the browser from a remote machine, over a network. First, on the machine where the browser should work, the server should be installed and launched. Then, on another machine, a program is launched that, using the special Remote WebDriver driver, that connects to the server and sends commands to it. Then, this machine launches the browser and executes these commands in it, using the driver corresponding to this browser

Selenium Server supports two sets of commands simultaneously - for the new version (WebDriver) and for the old version (Selenium RC). [3]

Selenium Grid. Selenium Grid is a cluster of several Selenium servers. It is designed to organize a distributed network that allows you to simultaneously run many browsers on a large number of machines.

Selenium Grid has a star topology, it has a dedicated server, which is called a "hub" or "switch", and the rest of the server is called "nodes". The network can operate under different operating systems and different browsers. Previously, Selenium Grid was an independent product. Now, physically, there is only one product - Selenium Server, but it has several launch modes: it can work as a standalone server, as a cluster switch, or as a cluster node, this is determined by the launch parameters.

Selenium IDE is an extension for browsers that can record user actions, play them, and generate code for WebDriver or Selenium RC, in which the same actions are performed. In general, it is a Selenium Recorder. It's can be very useful for testers who don't programming skills. Of course, Selenium IDE does not allow the development of sufficiently complex test suites, but some may need simple linear scripts.

Conclusion

In conclusion, I want to say that testing is an integral part of any project in most modern areas. In particular, in software testing. Testing in modern meaning, is preparing program for release. Main goal of testing software is to prevent bugs, before customer will find them. [4] And to prevent and find all bugs automated tests are very important. In all products that are available for testers, in my opinion, the best one is Selenium Project. The main benefit of Selenium, that it can be used by newbie testers or even people who want to automate their work.

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