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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 deals with the major software products of Selenium project and their functionality.
Keywords: testing, software, test cases, bugs, Selenium.

Introduction

Nowadays, due to the constant development of the software it is necessary to spend more and more time for checking it. In this article, the ways for testing automation are considered. The most popular testing environment Selenium and the products connected with this project are also highlighted.

Selenium Environment

Selenium is a project that develops a set of open source software products such as:

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

Every product has a unique purpose in testing process and can be combined with other products.

Selenium WebDriver is 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 developed as a part of the Chromium project, and Opera Software develops the driver for the Opera browser. Therefore, they are not formally a part of the Selenium project because they are distributed and supported independently. However, logically, of course, they can be considered as a part of the Selenium product family. Also, there are libraries that are developed for the languages Java, .Net (C #), Python, Ruby, JavaScript.

Selenium RC is the previous version of the browser management library. The abbreviation RC stands for Remote Control of the 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 being developed. Lots of users that have encountered with Selenium RC limitations are encouraged to switch to WebDriver.

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 radically different principles and they have practically no common code. What unites them is the fact that both implementations were made as a part of the Selenium project.

Selenium Server is a server that allows you to control the browser from a remote machine over the network. At first, on the machine where the browser should work the server is to be installed and launched. Then, on another machine, a program is launched using the special Remote WebDriver driver that connects to the server and sends commands to it. Finally, 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).

Selenium Grid is a cluster of several Selenium servers. It is designed to organize a distributed network that allows you to run many browsers on a large number of machines simultaneously. Selenium Grid has a star topology, it has a dedicated server, which is called a "hub" or a "switch", and the rest of the server is called "nodes". The network can operate at different operating systems and different browsers. Previously, Selenium Grid was an independent product. Now 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 can be very useful for testers who do not have 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, 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. The main goal of testing software is to prevent bugs before customer will find them. In fact, to prevent and find bugs automated tests are very important. In all products, which are available for testers, the best one is considered Selenium Project. The main benefit of Selenium is that newbie testers or even people who want to automate their work can use it.

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