Selenium is

1. open source
2. Free to install

Only use for web automation testing

Selenium work is domain specific that’s why name is salens is called selenium

Selenium launch is Jason huggins in 2004.

He named this program as “Java script test runner” than name “Java script runner” final name is a “Selenium core”.

1.What is selenium?

A. Selenium is a free (open source) automated testing suite for web applications across different browsers (Crome, Microsoft edge, Fire fox, Linux) and platforms

->. It is quite similar to HP Quick Test Pro(QTP) only that selenium focuses on automating web-based applications.

->. Selenium is not just a single tool but suite of software’s each catering to different testing needs of an organization. It has four components

1. Selenium integrated development environment(IDE)

(Record and replay)

2.Selenium remote control(RC)

(T.V. and remote)

3. Selenium web driver

(Heart of selenium)

4. Selenium Grid

(Row and column)

Introduction Selenium IDE

Selenium Integrated Development Environment(IDE) is the simplest framework in the Selenium suite and is the easiest one to learn.

It is a Firefox plugin that you can install as easily as you can with other plugins. However, because of its simplicity, Selenium IDE should only be used as a prototyping tool.

If you want to create more advanced test cases, you will need to use either Selenium RC or WebDriver.

Pros & Cons Selenium IDE

Pros

• Very easy to use and install.

• No programming experience is required, through knowledge of HTML and DOM are needed

• Can export tests to formats usable in Selenium RC and WebDriver

• Has built-in help and test results reporting module.

• Provides support for extensions.

Cons

• Available only in Fire fox

• Designed only to create prototypes of tests.

• No support for iteration and conditional operations

• Test execution is slow compared to that of Selenium RC and WebDriver.

Introduction Selenium RC

• Selenium RC was the flagship testing framework of the whole Selenium project for a long

time.

• This is the first automated web testing tool that allowed users to use a programming

language they prefer.

• As of version 2.25.0, RC can support the following programming languages:

• Java

• C#

• PHP

• Python

• Perl

• Ruby

Pros & Cons Selenium RC

• Pros

• Cross browser and cross platform

• Can perform looping and conditional operations

• Can support data-driven testing

• Has matured and complete API

• Can readily support new browsers

• Faster execution than IDE

• Cons

• Installation is more complicated than IDE

• Must have programming knowledge

• Needs Selenium RC Server to be running

• API contains redundant and confusing commands

• Browser interaction is less realistic

• Inconsistent result & Users JavaScript

• Slower execution time than WebDriver.

Introduction Selenium Driver

• The WebDriver proves itself to be better than both Selenium IDE and Selenium RC in many aspects.

• It implements a more modern and stable approach in automating the browser’s actions.

WebDriver, unlike Selenium RC, does not rely on JavaScript for automation. It controls the

browser by directly communicating to it.

• The supported languages are the same as those in Selenium RC.

• Java

• C#

• PHP

• Python

• Perl

• Ruby

Pros & Cons Selenium Driver

• Pros

• Simpler installation than Selenium RC

• Communicates directly to the browser

• Browser integration is more realistic.

• No need for a separate component such as the RC Server

• Faster execution time than IDE and RC

• Cons

• Installation is more complicated than Selenium IDE

• Requires programming knowledge

• Cannot readily support new browser

• Has no built-in mechanism for logging runtime message and generating test results

Introduction Selenium Driver

• Selenium Grid is a tool used together with Selenium RC to run parallel tests across different

machines and different browsers all at the same time. Parallel execution means running

multiple tests at once.

• Features:

• Enables simultaneous running of tests in multiple browsers and environments.

• Saves time enormously.

• Utilizes the hub-and-nodes concept. The hub acts as a central source of Selenium commands.

|  |  |
| --- | --- |
| Selenium | QTP |
| Open source, free to use, and free of charge. | Commercial |
| Highly extensible. | Limited add-ons |
| Can run tests across different browsers. | Can only run tests in firefox, Internet Explorer and chrome. |
| Supports various operating systems. | Can only be used in windows. |
| Supports mobile devices. | Supports mobile devise using 3rd party software. |
| Can execute tests while the browser is minimized to be visible on the desktop. | Needs to have the application under test. |
| Can execute tests in parallel. | Can only execute in parallel but using quality center which is again a paid product. |