

# **Test Automation & Advanced Selenium**

Lesson 2: Introduction to  
Selenium

## Lesson Objectives

- Introduction to Selenium
- What it is and what it is not
- Landscape and Usage
  - Selenium IDE
  - Selenium Remote Control (Selenium 1.0)
  - Selenium Web Driver (Selenium 2.0)
  - Selenium Grid



## 2.1: Introduction to Selenium

## Introduction to Selenium

- Invented by Jason R. Huggins, an engineer at ThoughtWorks
- While working on testing a web application, to reduce the repetitious manual testing, he created a JavaScript program that would automatically control the browser's actions and named as the "**JavaScriptTestRunner**." & later re-named as **Selenium Core**
- Free (open source) automated testing suite for web applications across different browsers and platforms
- Selenium has a suite of tools which consists of the following:
  - Selenium IDE
  - Selenium RC (Remote Control), Also known as Selenium 1
  - Selenium Web driver or Selenium 2
  - Selenium Grid
- Test cases in selenium can be written in many popular programming languages supported by selenium like Java, C#, Ruby, Python etc.

## 2.1: Introduction To Selenium

## Selenium: What it is?

- Selenium automates browsers. That's it!
- Selenium is a portable testing API for web applications.
- Web Application: Pure HTML & JavaScript (No Flash, ActiveX, Silverlight etc.)
- Primarily, it is for automating web applications for testing purposes, but is certainly not limited to just that.
- It is Open Source and Freeware.
- Supports multiple browsers & OS.
  - Browsers: Firefox, Chrome, IE, Safari, Opera, PhantomJS
  - OS: Windows, MAC, Linux, Android, iOS
- In process Headless execution.

## 2.1: Introduction To Selenium

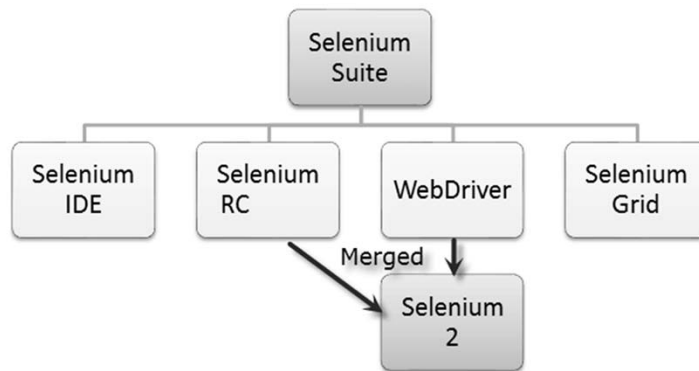
## Selenium: What it is NOT?

- Selenium is NOT a Test Tool.
- It is NOT a Framework.
- It is NOT a installable software.
- It is NOT a Programming Language.

## 2.1: Introduction To Selenium

## Landscape and Usage

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



Add the notes here.

## 2.1: Introduction To Selenium

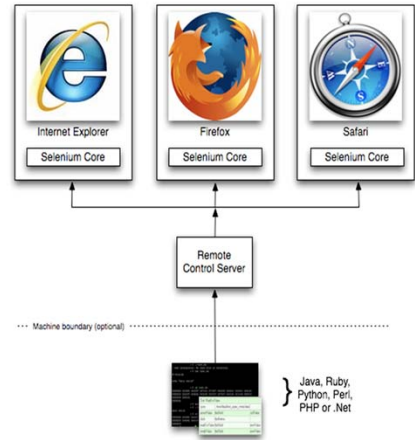
## Overview of Selenium IDE

- Firefox plug in, allows you to record, play back, edit, and debug tests in browser.
- Allows you to record user actions on browser window.
- Generate scripts from recorded user actions in most of the popular languages like Java, C#, Perl, Ruby etc. However to run them in an automated testing fashion you need to use Selenium Web Driver.
- Selenium default scripts are html (added JavaScript) and that is the script we are going to use it in selenium IDE
- The reason for availability of other language is, user can get the scripts for Selenium WebDriver/RC.
- It also has a context menu (right-click) integrated with the Firefox browser, which allows the user to pick from a list of assertions and verifications for the selected location

## 2.1: Introduction To Selenium

## Selenium Remote Control (Selenium 1.0)

- Selenium Remote Control (RC) is a test tool that allows you to write automated web application UI tests in any programming language against any HTTP website using any mainstream JavaScript-enabled browser.
- Selenium RC comes in two parts:
  - A server which automatically launches and kills browsers, and acts as a HTTP proxy for web requests from them.
  - Client libraries for your favorite computer language.





## 2.1: Introduction To Selenium

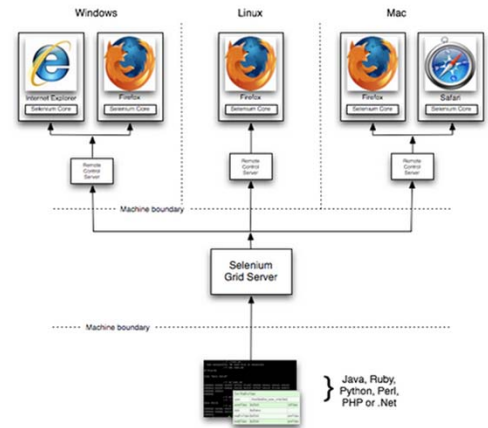
## Selenium Web Driver (Selenium 2.0)

- Selenium 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.

## 2.1: Introduction To Selenium

## Selenium Grid

- Runs multiple tests on different machines against different browsers and operating systems in parallel
- Supports distributed test execution.
- Run tests in a distributed test execution environment



## Summary

- In this lesson, you have learnt
- Selenium is a free (open source) automated testing suite for web applications across different browsers and platforms
- **Selenium** is a collection of different tools
- **Selenium IDE**, a Firefox add-on that you can only use in creating relatively simple test cases and test suites
- **Selenium RC** allows users to use programming languages in creating complex tests
- **WebDriver**, allows test scripts to communicate directly to the browser, thereby controlling it from the OS level.
- **Selenium Grid** is used with Selenium RC to execute parallel tests across different browsers and operating systems.



Add the notes here.

## Review Question

### Question 1

- Select the component which is NOT part of Selenium suite
  - Selenium IDE
  - Selenium RC
  - Selenium Grid
  - Selenium Web



### Question 2: True/False

- Selenium is a set of tools that supports rapid development of test automation scripts for web based applications.

### Question 3: Fill in the Blanks

- WebDriver, unlike Selenium RC, does not rely on \_\_\_\_\_ for automation.