SELENIUM Suite

1. It is a suite of tools to automate web application test
2. Open Source.
3. Supports various operating system environments like windows, UNIX, Macintosh, Android
4. Supports various browsers like IE, Chrome, Mozilla Firefox
5. Supports various programming language to enhance test cases like Java, C#, Perl, Python, PHP, Ruby of which we can choose any of the language to run our test cases.

Now a days 70% of selenium testers use java programming language because all the documentations available for selenium are only in java programming and also you get to a great extend while googling the same on internet. So most preferred language now is Java.

Most of the testers today use following combinations for selenium testing

1. Selenium Webdriver.
2. Core Java (OOPs concept, Java Fundamentals)
3. TestNG framework (Selenium testing framework better and more powerful than JUnit)

**SELENIUM WEBDRIVER**

It used to identify elements (objects) like buttons, links, images, textboxes, labels, radio buttons, check boxes, drop down box etc. and performing operations on elements. For e.g. for a link first selenium webdriver identifies that link and performs operations on it like clicking the link and for textbox selenium identifies it and performs operations like entering the text on it.

JAVA PROGRAMMING: We need java programming to enhance our test cases which include insering verification points, adding comment, error handling, parameterization, Synchronization if required.

TESTNG Framework: It provides test reports, grouping test cases, Data driven testing and parallel test executions.

SELENIUM Projects

1. Selenium launched in 2004
2. Webdriver Interface was launched in 2006 at Google.
3. In 2008, webdriver merged with Selenium RC, called as selenium 2.0

Selenium IDE+ Selenium RC + Selenium Grid – Selenium 1.0

Selenium IDE + Selenium RC + Selenium Webdriver + Selenium Grid – Selenium 2.0

Selenium RC had some drawbacks and to overcome the drawbacks of the selenium RC, Webdriver was launched by Google in 2006 and we do not need to use Selenium RC when we using Selenium Webdriver. If selenium RC is outdate the why still it is in the suite??

It is included in the suite only for maintenance projects. But for new projects, testers can use Selenium webdriver directly.

Selenium Supporting platforms/Environments

1. Application Environment
2. It does not support CUI(command User Interface) based applications
3. It does not support 1-tier and 2-tier applications(Windows based Applications)
4. It supports web applications( 3- tier to n-tier)
5. It supports mobile applications which are having web forms.
6. Operating System
7. It supports MS Windows operating System, Macintosh, UNIX, Android.
8. Web Browser
9. Supports Mozilla Firefox browser which is default browser for the Selenium tool, MS Inter Explorer, Google Chrome, Safari, Opera.
10. Programming langauges
11. Supports Java, python, php, perl, ruby

Selenium 2.0 suite

1. Selenuim IDE

It works only on Firefox browser and used as firefox plug in. Due to integration in Firefox browser only it is slowly getting outdated. It is a prototyping tool for test as It doesn’t support any programming language. It only deals with element locator and various commands to perform. Various features of selenium IDE include:

1. It is a record and playback tool: record and playbacks the test cases.
2. Edit test cases: We can edit recorded test cases.
3. Execute test suites
4. One can type test cases/script using the element locator and selenese/Selenium IDE commands.
5. Debugging test cases through step by step execution.
6. Export test cases to other programming language whichever we want.
7. Selenium IDE default test case format is .html

Drawbacks of Selenium IDE

1. Supports only Mozilla firefox browser.
2. It only a prototype tool so not suitable for complex test cases.
3. It doesn’t support programming constructs like looping, conditional statements.
4. Data driven testing not possible.
5. No detailed test reports (It provides summary only).
6. Selenium RC (outdated)
7. Selenium WebDriver

It is a programming interface. (But It doesn’t have IDE)

Features of WebDriver:

1. Create test cases/ Scripts using element locator and methods.
2. It supports conditional and loop statements. (Variables, Operators, Arrays, Strings, Methods, Flow Control statements and supports OOPs concept).
3. Supports language like java, c#, python, perl, Ruby, PHP to enhance the test cases.
4. Data driven test cases are possible.
5. Cross browser testing is possible.

Drawbacks

1. It doesn’t generate test reports.
2. Selenium Grid

Selenium grid 2.0 supports selenium webDriver test cases.

Features of selenium test cases:

1. It is used for grouping test cases.
2. It used to execute the test cases parallel so that we can reduce the execution time.(for e.g. we have 300 test cases if we want execute in a single machine, it will take longer to execute the same. If these test cases can run parallel on several machines then execution time can be reduced).
3. Generates test reports.

**Frameworks and plug ins for selenium**

1. Frameworks
2. JUnit
3. It is a framework for unit testing and it can be used for selenium functional testing.
4. It used to execute test batches and generate test reports.
5. TestNG
6. Used for grouping test cases and execute test groups.
7. Generate HTML test reports.
8. Generates parallel test execution.
9. Executing multiple programs/ classes in java using xml file.
10. Plug ins used in Selenium.
11. Firebug and firepath for inspecting elements/ objects on a webpage. It is for firefox only.

Note: For MS IE and Google Chrome built in developer tools available (F12).

To locate an element we use

Id- locator

Email- value

Method/operation performed on it