

Overview on Automation And Selenium

Day-1



Agenda

- What is Software Testing?
- Challenges in Manual testing
- How does automation tools work?
- What is selenium?
- Advantages of Selenium
- Disadvantages/Limitations of Selenium
- Selenium Suite



What is Software Testing?

- Software testing is an activity to check whether the actual results match the expected results and to ensure that the software system is Defect free.
- Software testing also helps to identify errors, gaps or missing requirements in contrary to the actual requirements.
- It can be either done manually or using automated tools.



Challenges in Manual testing

- Boring
- Time Consuming
- Tedious
- Mistakes/errors



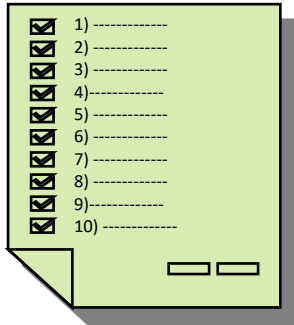
Re-Testing V/s Regression Testing

- Executing the same test case by giving the number of inputs on same build called as Re-testing.
- Regression Testing is a type of software testing executed to check whether a code change has not unfavorably disturbed current features & functions of an Application.
- QA Engineer need to spend lot of time and effort to perform Re-testing and Regression testing. This can be reduced by using automation tools.



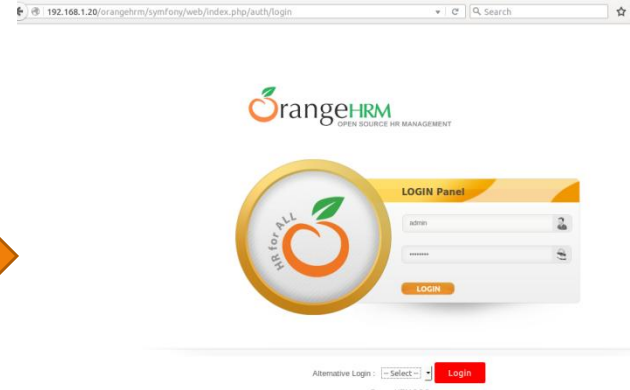
How does automation tools work?

Manual Test case

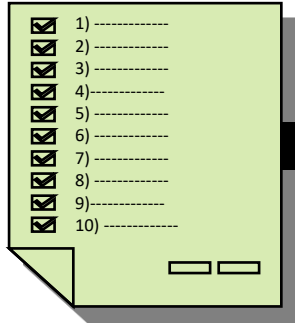


Manual Execution

AUT



How does automation tools work?



Manual to Automation
conversion

Automation script

```
1 import java.io.File;
2 import java.util.concurrent.TimeUnit;
3 import org.openqa.selenium.WebDriver;
4 import org.openqa.selenium.firefox.FirefoxDriver;
5 import org.openqa.selenium.firefox.FirefoxProfile;
6 import org.openqa.selenium.firefox.internal.ProfilesIni;
7
8 public class FirefoxProfile2{
9     public static void main(String[] args) {
10
11         // Create FirefoxProfile
12         FirefoxProfile myprofile = new FirefoxProfile(new File("c:\\users\\App\\
13         // Initialize Firefox driver
14         WebDriver driver = new FirefoxDriver(myprofile);
15         //Maximize browser window
16         driver.manage().window().maximize();
17         //Go to URL
18         driver.get("http://www.google.com");
19         //Set timeout
20         driver.manage().timeouts().implicitlyWait(5, TimeUnit.SECONDS);
21         //close firefox browser
22         driver.close();
23     }
```



Execute Automation
Tests





What is selenium?

- Selenium is a free (open source) automated testing suite for web applications across different browsers and platforms.
- Testing done using Selenium tool is usually referred as Selenium Testing.
- Selenium is not just a single tool but a suite of software's.
- It has four components.
 - Selenium Integrated Development Environment (IDE)
 - Selenium Remote Control (RC)
 - WebDriver
 - Selenium Grid



Advantages of Selenium

- Selenium is pure open source tool.
- Selenium supports variety of languages that include Java, Perl, Python, C#, Ruby, Groovy, Java Script, and VB Script. etc.
- Selenium supports many operating systems like Windows, Macintosh, Linux, Unix etc.
- Selenium supports many browsers like Internet explorer, Chrome, Firefox, Opera, Safari etc.
- Selenium can be integrated with Jenkins or Hudson for continuous integration.
- Selenium can be integrated with other open source tools for supporting other features.
- Selenium can be used for Android, iPhone, Blackberry etc. based application testing.

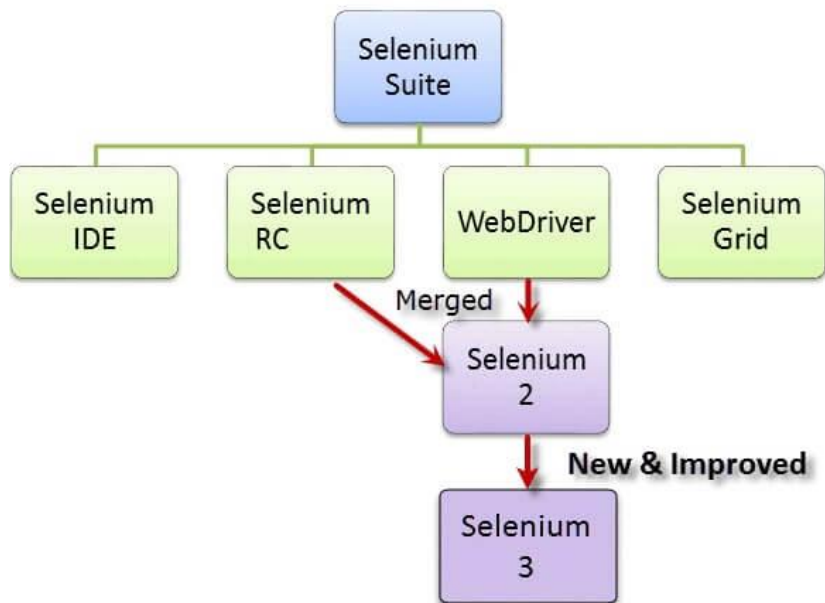


Disadvantages of Selenium

- We can use Selenium only to test web applications. We cannot test desktop applications.
- There is no guaranteed support available for Selenium. We need to leverage on the available customer communities.
- It is not possible to perform testing on images. We need to integrate Selenium with Sikuli for image based testing.
- There is no native reporting facility. But we can overcome that issue by integrating it with frameworks like TestNG or Junit.



Selenium Suite





Selenium Suite

- **Selenium IDE**, a Firefox and Chrome add-on that you can only use in creating relatively simple test cases and test suites.
- **Selenium Remote Control**, also known as **Selenium 1**, which is the first Selenium tool that allowed users to use programming languages in creating complex tests.
- **WebDriver**, the newer breakthrough that allows your test scripts to communicate directly to the browser.
- **Selenium Grid** is also a tool that is used to execute parallel tests across different browsers and operating systems remotely.
- Selenium RC and WebDriver was merged to form **Selenium 2**.