**Debugging**

Step over – F8

Step into – F7

Resume – F9

**Git**

* Git is an open-source distributed version control system
* It is designed to handle minor to major projects with high speed and efficiency
* It is developed to co-ordinate the work among the developers
* The version control allows us to track and work together with our team members at the same workspace

**GitHub**

* GitHub is a Git repository hosting service
* GitHub also facilitates with many of it’s features such as access control and collaboration.
* It provides a web-based graphical interface
* GitHub is an American company. It hosts source code of your project in the form of different programming language and keeps track of the various changes made by programmers.

**History**

* Starts in 2004 at ThoughtWorks in Chicago
* Father - Jason Huggins
* Older name "JavaScriptTestRunner"
* Shinya Kasatani in Japan could wrap the core code into an IDE module into the Firefox browser
* Selenium latest version – 4.10.0
* Selenium official website – Selenium.dev

**Automation**

Automation testing refers to the automatic testing of the software in which developer or tester write the test script once with the help of testing tools and framework and run it on the software. The test script automatically test the software without human intervention and shows the result (either error, bugs are present or software is free from them).

**Advantages of automation:**

* Accuracy
* Productivity improvement
* Saves time
* Test suit reusability
* Ability to test on various platforms (cross browser testing)
* Less human resources
* Early bug detection

**Ideal candidates for automation**

* Repeated TC
* Tests that tend to cause human error
* Tests that are impossible to perform manually.
* Tests that run on several different hardware or software platforms and configurations.
* Depends on the budget of project
* Depends on no.of TC

**Why JAVA(selenium)**

* Most of the web applications are in java
* Open source
* Cross browser testing

**Different flavours (component)of selenium**

* selenium IDE
* selenium RC
* selenium web driver
* selenium grid

|  |  |  |
| --- | --- | --- |
| **Selenium IDE** | **Selenium RC** | **Selenium web driver** |
| It only works in Mozilla browser. | It supports with all browsers like Firefox, IE, Chrome, Safari, Opera etc. | It supports with all browsers like Firefox, IE, Chrome, Safari, Opera etc. |
| It supports Record and playback | It doesn’t supports Record and playback | It doesn’t supports Record and playback |
| Doesn’t required to start server before executing the test script. | Required to start server before executing the test script. | Doesn’t required to start server before executing the test script. |
| It is a GUI Plug-in | It is standalone java program which allow you to run Html test suites. | It actual core API which has binding in a range of languages. |
| It is not object oriented | API’s are less Object oriented | API’s are entirely Object oriented |
| It does not support to test iphone/Android applications | It does not support to test iphone/Android applications | It support to test iphone/Android applications |
|  |  |  |

**Selenium WebDriver**

* Selenium WebDriver was first introduced as a part of Selenium v2.0
* In WebDriver, test scripts can be developed using any of the supported programming languages and can be run directly in most modern web browsers. Languages supported by WebDriver include C#, Java, Perl, PHP, Python and Ruby.
* Selenium WebDriver performs much faster as compared to Selenium RC because it makes direct calls to the web browsers. RC on the other hand needs an RC server to interact with the browser.
* WebDriver has a built-in implementation of Firefox driver (Gecko Driver). For other browsers, you need to plug-in their browser specific drivers to communicate and run the test. Most commonly used WebDriver's include:
* Google Chrome Driver
* Internet Explorer Driver
* Opera Driver
* Safari Driver
* HTML Unit Driver (a special headless driver)

**Selenium commands**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Command** | **Syntax** | **Usage** | **Example** |
| 1 |  | WebDriver driver=new ChromeDriver |  |  |
| 2 |  | WebDriver driver=new EdgeDriver |  |  |
| 3 |  | WebDriver driver=new FirefoxDriver |  |  |
| 4 |  | driver.manage().window().maximize() |  |  |
| 5 | **getTitle()** | String actualTitle=driver.getTitle() | **Getting title** |  |
| 6 |  | String actualCurrentUrl=driver.getCurrentUrl() |  |  |
| 7 |  | String actualPageSource=driver.getPageSource |  |  |
| 8 |  | Driver.close |  |  |

id

name

classname

xpath

linktext

partiallinktext

cssselector

tagname