

# Selenium: An Automated Testing Tool



**Dr. D. P. Mohapatra**  
Associate Professor

**Department of Computer Science & Engineering  
National Institute of Technology, Rourkela-769008  
[durga@nitrkl.ac.in](mailto:durga@nitrkl.ac.in)**

# Plan of the Talk

---



- ❖ **Introduction to Selenium**
- ❖ **Selenium Integrated Development Environment (IDE)**
- ❖ **Installation of Selenium IDE**
- ❖ **Using Selenium IDE**
- ❖ **Selenium Remote Control (RC)**
- ❖ **Selenium Web Driver**

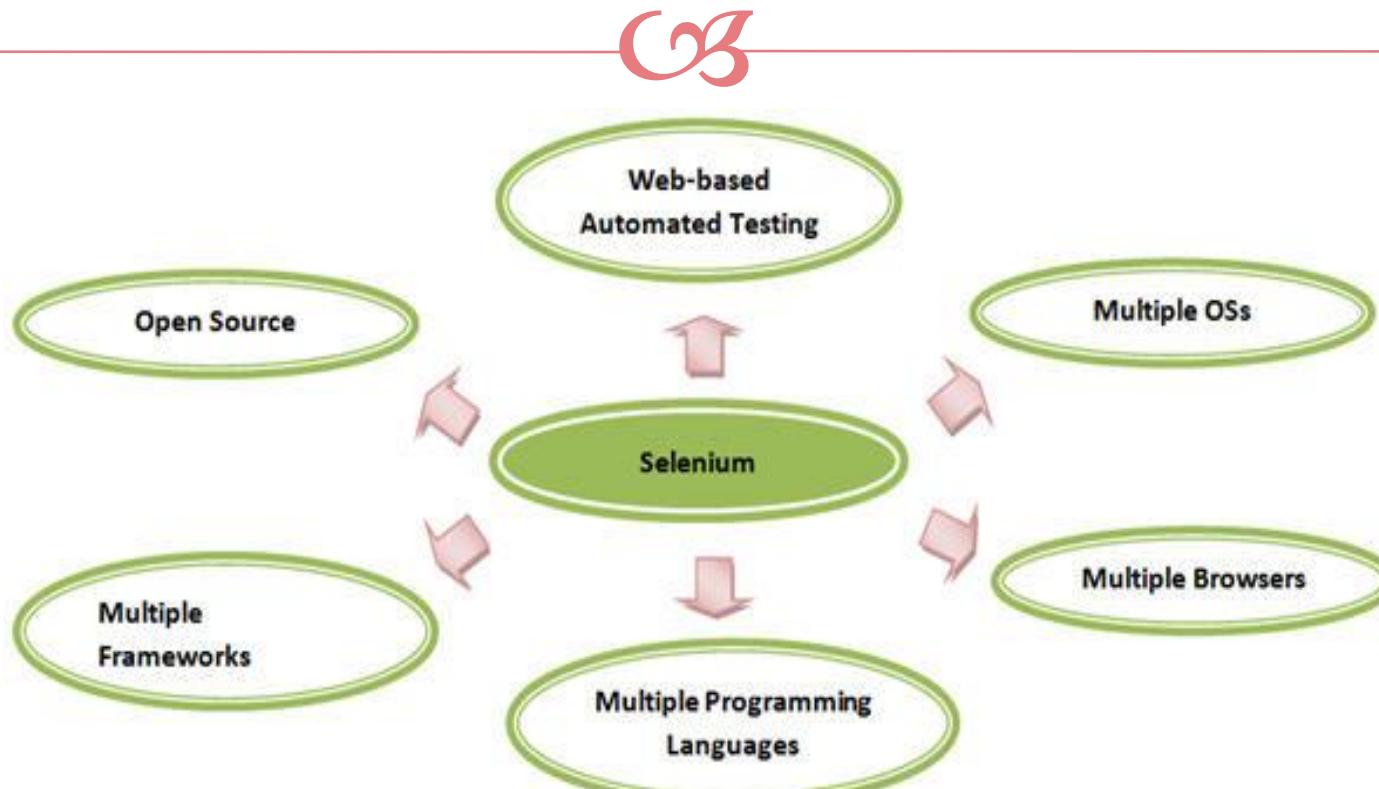
# Overview of Selenium

---



- ❖ It is an open source automation testing tool for web based applications.
- ❖ It is licensed under Apache License 2.0.
- ❖ Different Languages supported by Selenium are Java, C#, Ruby, Python, PHP, Perl.
- ❖ Operating systems Supported by Selenium include windows, mac, linux, unix.
- ❖ Different Browsers supported by Selenium are Mozilla (till latest version), IE 6,7,8, Google chrome, Opera 8, 9, 10.

# Selenium contd....



Selenium supports a broad range of browsers, technologies and platforms

# Selenium: History

---



- ❖ Developed in 2004 by Jason Huggins as a JavaScript library and used to automate his manual testing routines
  - That library eventually became Selenium Core, which underlies all the functionality of Selenium Remote Control (RC) and Selenium IDE.
  - Sometimes it is very difficult to perform the testing because of its JavaScript based automation engine and the security limitations browsers apply to JavaScript.

# Selenium: History

---



- ❖ Google being a long time user of Selenium, had a developer named Simon Stewart who developed WebDriver.
  - Circumvented Selenium's JavaScript sandbox to allow it to communicate with the Browser and Operating System directly
- ❖ In 2008, Selenium and WebDriver merged to provide an excellent test automation framework

# Story about Selenium

---



- ❖ Selenium is a chemical element with the atomic number 34, represented by the chemical symbol Se.
- ❖ It is a nonmetal, chemically related to sulfur and tellurium, and rarely occurs in its elemental state in nature.

# Story about Selenium



Periodic table of the elements

group	Periodic table of the elements																	18 0
period	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	He
1	H	Be	Li	Mg	Na	Al	Si	P	Cl	Ar	Ne	F	Ne	Ar	Br	Kr	Xe	Rn
2	Li	Be	Na	Mg	Al	Si	P	Cl	Ar	Ne	Ne	F	Ne	Ar	Br	Kr	Xe	Rn
3	Na	Mg	Al	Si	P	Cl	Ar	Br	Kr	Xe	Xe	Fr	Fr	Fr	Fr	Fr	Fr	Rn
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	(Uub)	(Uut)	(Uuo)	(Uup)	(Uuh)	(Uuh)	(Uuh)
lanthanide series																		
6	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	Lu
	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Lu	Y	Lu
actinide series																		
7	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	Lr
	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	Nh	Lu	Y	Lu	Y	Lu

\* Numbering system adopted by the International Union of Pure and Applied Chemistry (IUPAC).

\*\* Numbering system widely used, especially in the U.S., from the mid-20th century.

\*\*\* Discoveries of elements 112–116 are claimed but not confirmed. Element names and symbols in parentheses are assigned by IUPAC.

© 2006 E

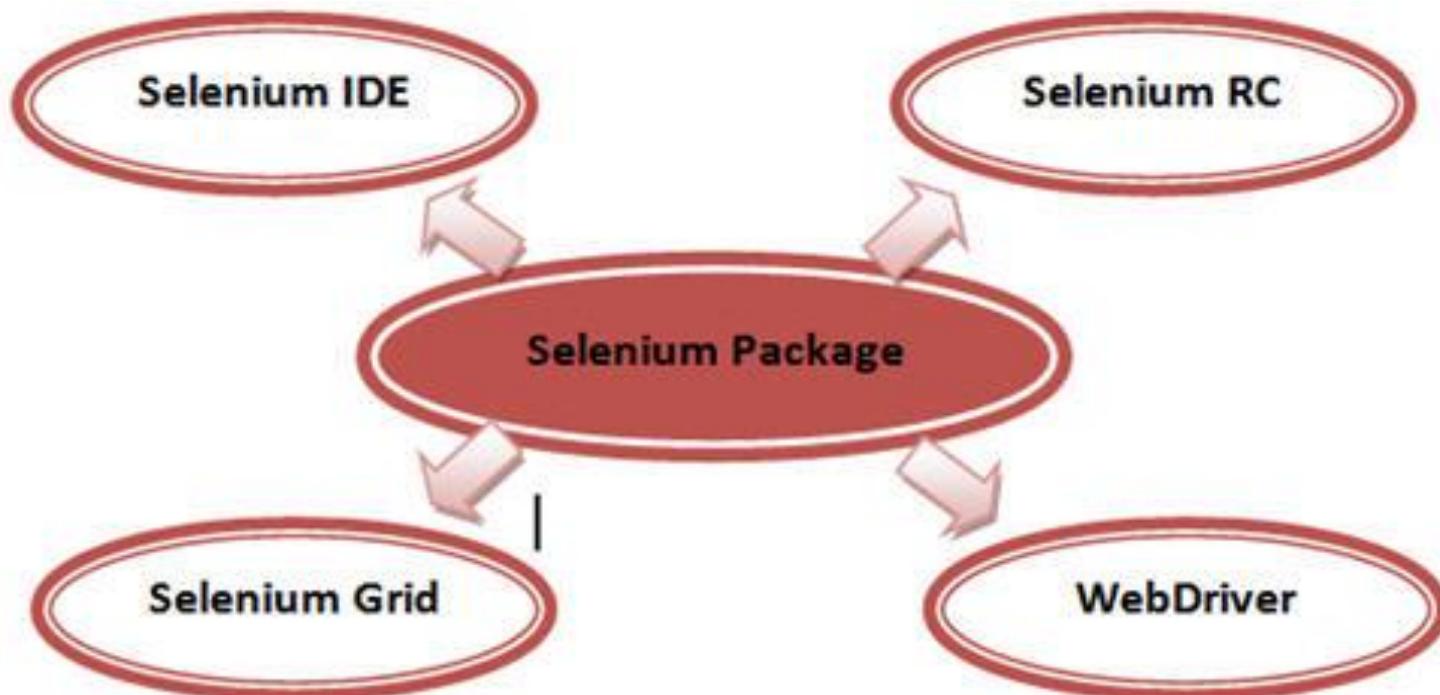
Selenium.

28 October 2020 Selenium is used for treating Mercury Poisoning



# Components of Selenium

---



Selenium Packages - © www.SoftwareTestingHelp.com

# Components of Selenium Contd...

---



## ❖ Selenium IDE

- Selenium IDE provides facility to export recorded script in many languages like HTML, Java, Ruby, Python, C#, Junit and TestNG.
- Script created for application testing is called test case in selenium IDE language and set of test cases is called test suite in selenium IDE.
- It provides record and playback facility to regression test in any web application.

# Components of Selenium Contd...

---



## ❖ Selenium RC

- This is the older version of selenium.
- It works on multiple browsers.

# Components of Selenium Contd...

---



## ❖ Webdriver

- Web driver is the new version of selenium.
- It also supports Android and Iphone Testing.

## ❖ Grid

- Grid is used to run test cases parallelly on multiple machines and browsers.

# Comparison Table

Selenium IDE	Selenium RC	Web driver
Works only on Mozilla	Works on almost all browsers. Does not work on latest version of Firefox/IE	Works on latest versions of almost all browsers - Firefox, IE(6,7,8), Opera, Chrome
Record and run tool	No Record and run	No Record and run
No server required to start	Server is required to start	No server required to start
Core engine is JavaScript based	Core engine is JavaScript based	Interacts natively with browser application
Very simple to use. If using User extensions, you require knowledge on JavaScript which makes the work a little bit tough.	It's a simple and small API	Complex and a bit large API as compared to RC
Not at all object oriented	Less Object oriented API	Purely Object oriented API
Cannot move mouse with it	Cannot move mouse with it	Can move mouse cursor
Full xpaths have to be appended with 'xpath=\\\' syntax	Full xpaths have to be appended with 'xpath=\\\' syntax	No need to append 'xpath=\\\'
No Listeners	No Listeners	Implementation of Listeners is provided
Cannot test iphone/Android applications	Cannot test iphone/Android applications	Can test iphone/Android applications

# Purpose of use

---



- ❖ Selenium is an open source testing tool and hence it serves for cost-effective automation testing.
- ❖ One highly beneficial feature of Selenium is that the language used for building the program is independent of the language that the web application or website is using.
- ❖ This implies that the test script can be developed in any of the languages that Selenium supports.

# Purpose of use

---



- ❖ With Selenium, it is convenient to implement frameworks that revolve around Object-oriented programming like Keyword Driven, Data driven and Hybrid.
- ❖ With the use of Selenium, it is possible to execute simultaneous tests leveraging various browsers on various machines.
- ❖ This turn cuts down the time for test execution when a large project is in progress.

# Hardware Requirements

---



## ❖ Operating system(s)

- Windows - XP, 2003, 2003 Server, Windows Vista, Windows 7, Windows 2008
- Linux
- MacOS - Leopard, Snow Leopard.

## ❖ Memory: Minimum 2 GB RAM.

# Hardware Requirements

---



- ❖ **Space:** With all included features and libraries installed, standalone Twist takes about 250- 300 MB (depending on OS) space on disk.
- ❖ **Display:** Minimum 1024 x 768 resolution. However resolutions of 1280x800 or 1440x900 are preferred if you want to have many views/windows/tabs open on the Twist perspectives view.

# Software Requirements

---



## Firefox

- ❖ Please be sure you have a recent version of Firefox installed.

## Java Script

- ❖ The Selenium Remote Control server runs on Java Script.
- ❖ It thus runs on any operating system that supports a recent Java implementation.

# Software Requirements

---



You can also use the following programming language to write the code.

❖ **Ruby**

❖ **C#**

❖ **PHP**

❖ **Perl**

❖ **Python**

# Selenium Integrated Development Environment (IDE)

# Selenium Integrated Development Environment (IDE)

---



- ❖ The Selenium-IDE (Integrated Development Environment) is the tool used to develop Selenium test cases.
- ❖ It's an easy-to-use Firefox plug-in and is generally the most efficient way to develop test cases.

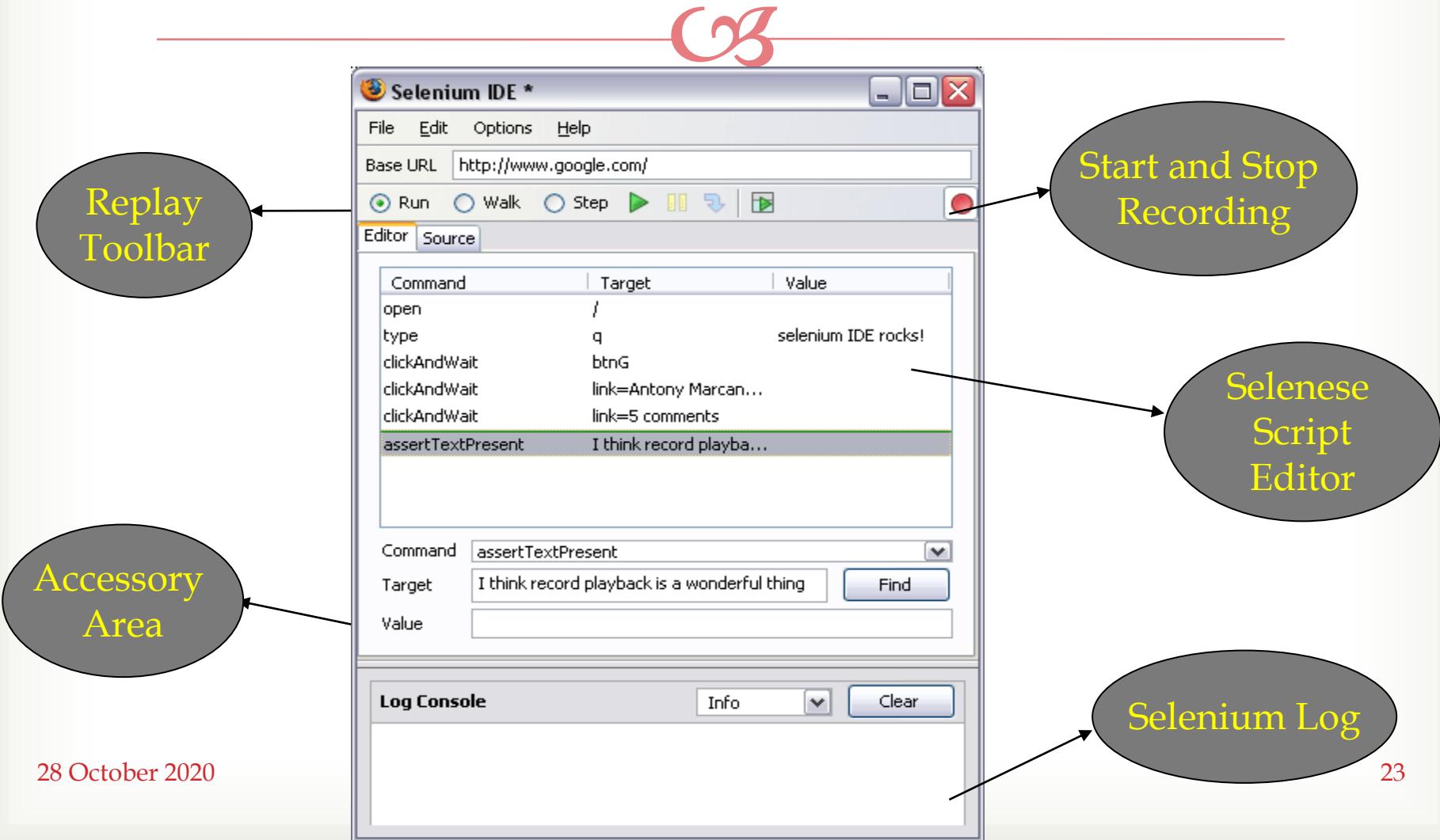
# Selenium Integrated Development Environment (IDE)

---



- ❖ It also contains a context menu that allows you
  - to first select a UI element from the browser's currently displayed page and then
  - select from a list of Selenium commands with parameters predefined according to the context of the selected UI element.

# Selenium Integrated Development Environment (IDE)



# Installation of Selenium IDE

---



- ❖ Launch Firefox and navigate to <http://seleniumhq.org/download/>.
- ❖ Under the **Selenium IDE** section,
  - ❖ click on the link that shows the current version number.

## Selenium IDE

---

Selenium IDE is a Firefox plugin which records and plays back user interactions with the browser. Use this to either create simple scripts or assist in exploratory testing. It can also export Remote Control or WebDriver scripts, though they tend to be somewhat brittle and should be overhauled into some sort of Page Object y structure for any kind of resiliency.

Download latest released version [2.9.0](#) released on 09/Mar/2015 or view the [Release Notes](#) and then [install some plugins](#).

this is the download link

Download previous version 2.8.0 released on 29/Sep/2014.

# Installation of Selenium IDE contd....



❖ For security, a Firefox notification will pop up.

The screenshot shows a Firefox browser window with the title bar "File Edit View History Bookmarks Tools Help" and the address bar "selenium ide - Google Search...". A security warning message is displayed: "Firefox prevented this site (www.seleniumhq.org) from asking you to install software on your computer." Below the message, there is a "Allow" button. The main content area displays information about the Selenium IDE plugin, including its purpose, download links for version 2.8.0 and 2.7.0, and details about Selenium IDE Plugins and Flex Pilot X.

Firefox prevented this site (www.seleniumhq.org) from asking you to install software on your computer.

Allow

VisGrid is a GUI for Selenium Grid. You can start hub, create and attach a Selenium node very easily and quickly.

**Selenium IDE**

Selenium IDE is a Firefox plugin which records and plays back user interactions with the browser. Use this to either create simple scripts or assist in exploratory testing. It can also export Remote Control or WebDriver scripts, though they tend to be somewhat brittle and should be overhauled into some sort of Page Object-y structure for any kind of resiliency.

Download latest released version [2.8.0](#) released on 29/Sep/2014 or view the [Release Notes](#) and then [install some plugins](#).

Download previous version [2.7.0](#) released on 14/Sep/2014.

**Selenium IDE Plugins**

Selenium IDE can be extended through its own plugin system. Here are a number of plugins that have been created using it. For more information on how to create your own plugin or have it listed, see the [plugin tutorial page](#).

Please note that these are not supported by the Selenium project and all issues need to be raised with the relevant developers.

**Selenium IDE Plugins (that provide new / improved features)**

**Favorites**

Links: [Download - Support](#) Released: April 7, 2011  
Author: [Samit Badle](#) (Selenium IDE Maintainer) Version: 1.14  
License: Unknown

This plugin for Selenium-IDE gives you a way to mark your favorite test suites and open and execute them with a SINGLE click. [More info](#).

**Flex Pilot X**

Links: [Download - Support](#) Released: August 28, 2010  
Author: Adam Christian Version: 0.9.0

Choose What I Share

28 October 2020

Firefox automatically sends data to Mozilla so that we can improve your experience.

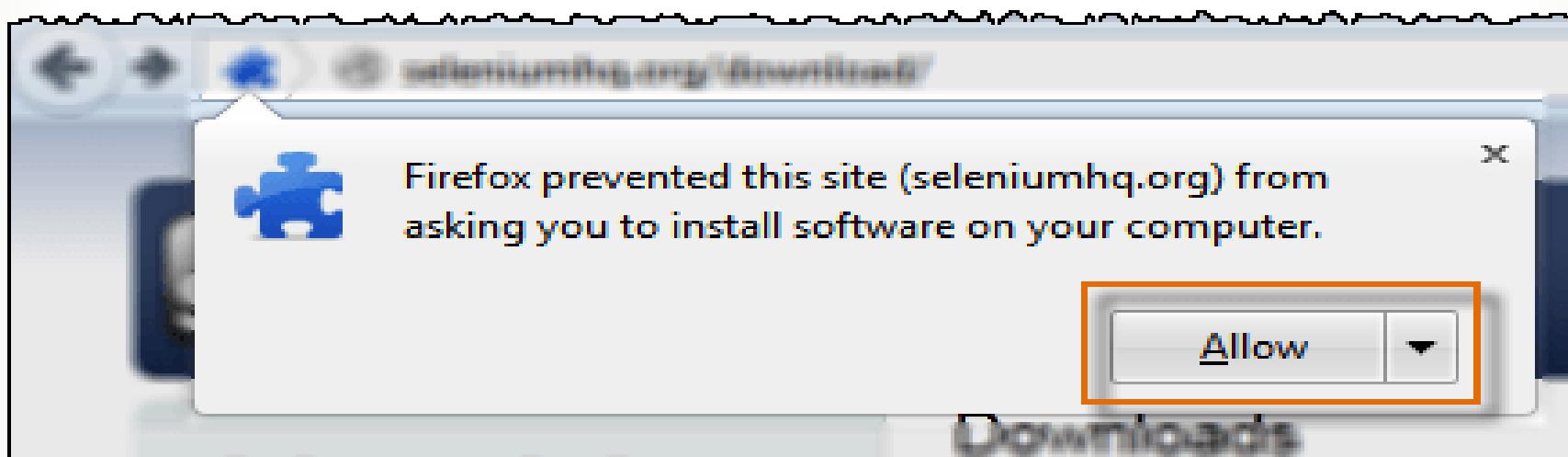
?

ENG INTL 10:16 01-03-2015

# Installation of Selenium IDE contd....



- ❖ Click on "Allow".



# Installation of Selenium IDE contd....



❖ The addons will be downloaded

The screenshot shows a Firefox browser window with the address bar set to "www.seleniumhq.org/download/". A progress bar indicates that an "Add-on downloading" process is in progress, with "A few seconds remaining — 568 of 728 KB (22.8 KB/sec)". The main content area displays information about the Selenium IDE, including its purpose as a GUI for Selenium Grid, its latest version (2.8.0), and its previous version (2.7.0). It also lists "Selenium IDE Plugins" and "Flex Pilot X" plugins. The status bar at the bottom of the browser shows the date "28 October 2020" and a note about Mozilla's data collection.

selenium ide - Google Search... Downloads

www.seleniumhq.org/download/

Add-on downloading

A few seconds remaining — 568 of 728 KB (22.8 KB/sec)

Grid is a GUI for Selenium Grid. You can start hub, create and attach a Selenium node very easily & quickly.

## Selenium IDE

Selenium IDE is a Firefox plugin which records and plays back user interactions with the browser. Use this to either create simple scripts or assist in exploratory testing. It can also export Remote Control or WebDriver scripts, though they tend to be somewhat brittle and should be overhauled into some sort of Page Object-y structure for any kind of resiliency.

Download latest released version [2.8.0](#) released on 29/Sep/2014 or view the [Release Notes](#) and then [install some plugins](#).

Download previous version [2.7.0](#) released on 14/Sep/2014.

### Selenium IDE Plugins

Selenium IDE can be extended through its own plugin system. Here are a number of plugins that have been created using it. For more information on how to create your own plugin or have it listed, see the [plugin tutorial page](#).

Please note that these are not supported by the Selenium project and all issues need to be raised with the relevant developers.

### Selenium IDE Plugins (that provide new / improved features)

#### Favorites

Links: [Download - Support](#) Released: April 7, 2011  
Author: [Samit Badle](#) (Selenium IDE Maintainer) Version: 1.14  
License: Unknown

This plugin for Selenium-IDE gives you a way to mark your favorite test suites and open and execute them with a SINGLE click. [More info](#).

#### Flex Pilot X

Links: [Download - Support](#) Released: August 28, 2010  
Author: [Adam Christian](#) Version: 0.8.0  
License: Apache 2

Choose What I Share

28 October 2020

Firefox automatically sends some data to Mozilla so that we can improve your experience.

ENG 10:17 INTL 01-03-2015

# Installation of Selenium IDE contd....



- After downloading from Firefox, you'll be presented with a window shown

The screenshot shows a Firefox browser window with the address bar displaying "selenium ide - Google Search" and "www.seleniumhq.org/download/". The main content area shows a "Software Installation" dialog box. The dialog has a warning icon and the text "Install add-ons only from authors whom you trust. Malicious software can damage your computer or violate your privacy." It lists three items to install:

- Selenium IDE: Ruby Formatters (Author not verified) <http://release.seleniumhq.org/selenium-ide/2.8.0/selenium-ide-2.8.0.xpi>
- Selenium IDE (Author not verified) <http://release.seleniumhq.org/selenium-ide/2.8.0/selenium-ide-2.8.0.xpi>
- Selenium IDE: Python Formatters (Author not verified) <http://release.seleniumhq.org/selenium-ide/2.8.0/selenium-ide-2.8.0.xpi>

Below the list, it says "License: Unknown" and provides a link to "More info". At the bottom of the dialog are "Install Now" and "Cancel" buttons.

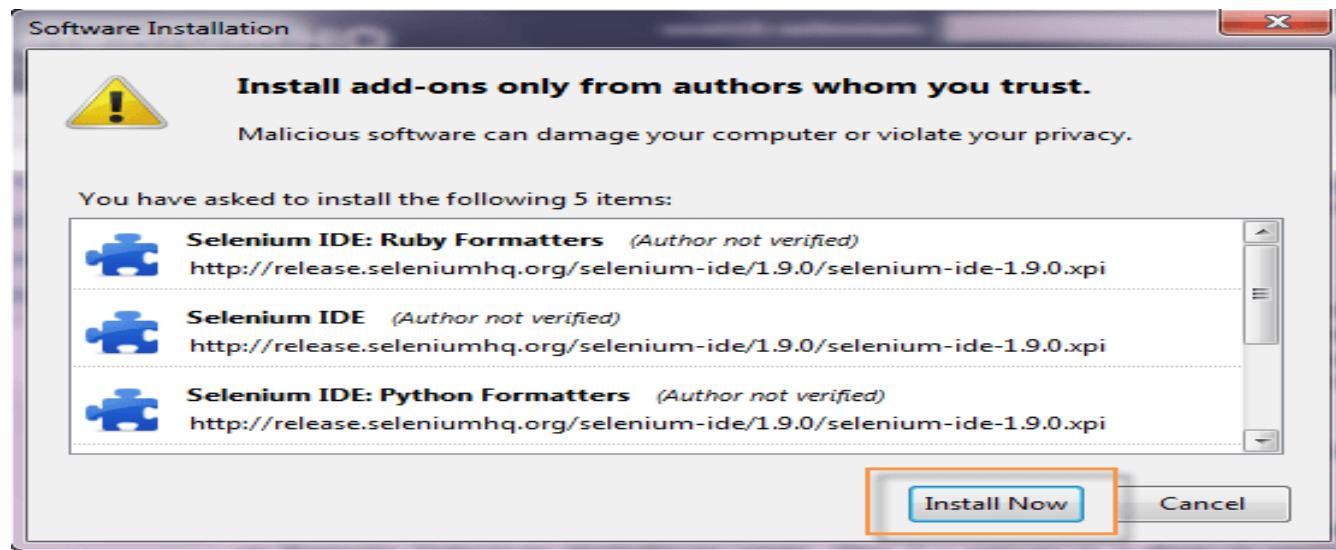
On the right side of the browser window, there is a sidebar with the following text:  
VisGrid is a GUI for Selenium Grid. You can start hub, create and attach a Selenium node very easily and quickly.  
**Selenium IDE**  
...s with the browser. Use ... export Remote Control overhauled into some  
[Release Notes](#) and then  
...ber of plugins that have ... or have it listed, see  
...es need to be raised

At the bottom of the browser window, there is a status bar with the date "28 October 2020", a note about Firefox sending data to Mozilla, and a "Choose What I Share" button. The bottom right corner shows the system tray with icons for battery, signal, volume, and date/time.

# Installation of Selenium IDE contd....



- ❖ Select Install Now.



# Installation of Selenium IDE contd....



The Firefox Add-ons window pops up, first shows a progress bar, and when the download is complete, displays the window shown

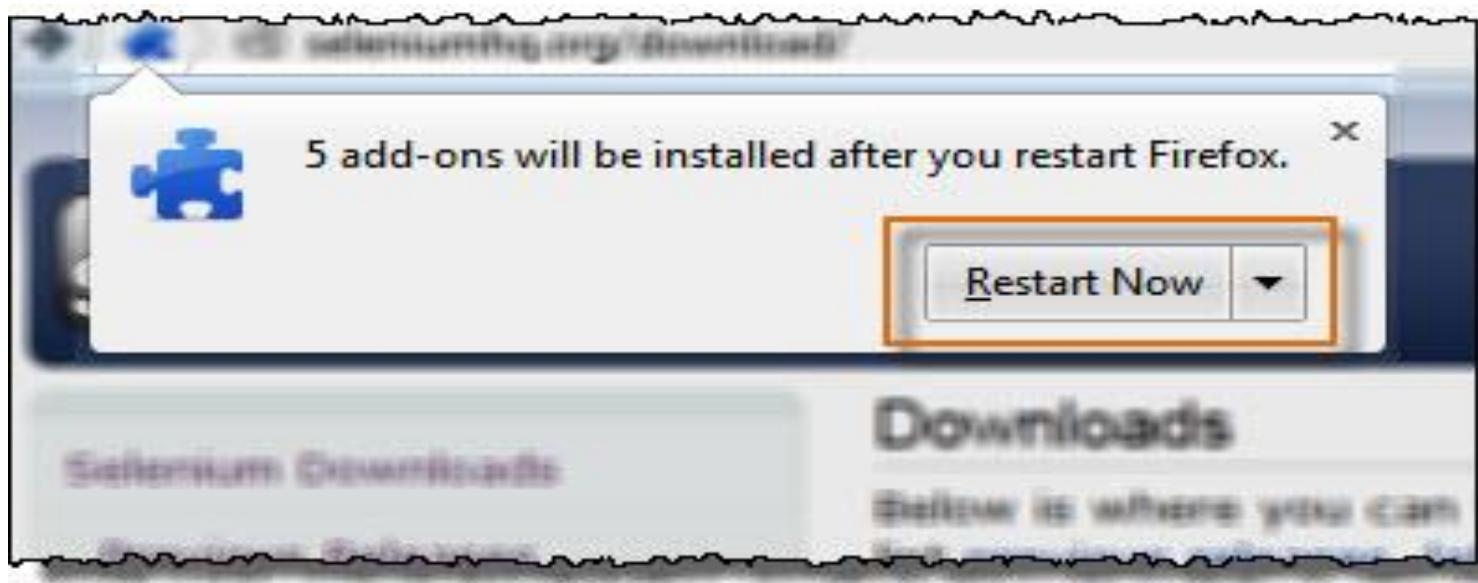
The screenshot shows a Firefox browser window with the following details:

- Title Bar:** selenium ide - Google Search... > Downloads
- Progress Bar:** A progress bar at the top indicates "5 add-ons will be installed after you restart Firefox." It includes a "Restart Now" button.
- Content Area:**
  - VisGrid:** A GUI for Selenium Grid. It's described as a "Web Client Portal" that allows starting hubs, creating nodes, and attaching them quickly.
  - Selenium IDE:** Described as a Firefox plugin for recording and playback user interactions. It can export Remote Control or WebDriver scripts.
  - Downloads:** Links to the latest version (2.8.0) released on 29/Sep/2014 and previous versions (2.7.0).
  - Selenium IDE Plugins:** A section listing available plugins:
    - Favorites:** Released April 7, 2011, by Samit Badle, Version 1.14. License: Unknown. Description: A plugin for Selenium-IDE that allows marking favorite test suites and executing them with a single click.
    - Flex Pilot X:** Released August 28, 2010, by Adam Christian, Version 0.8.0. License: Apache 2. Description: A plugin for Selenium-IDE that provides new/improved features.
- Bottom Status Bar:** Shows the date (28 October 2020), a message about Mozilla data collection, and system status indicators (ENG, INTL, 10:19, 01-03-2015).
- Page Number:** 30

# Installation of Selenium IDE contd....

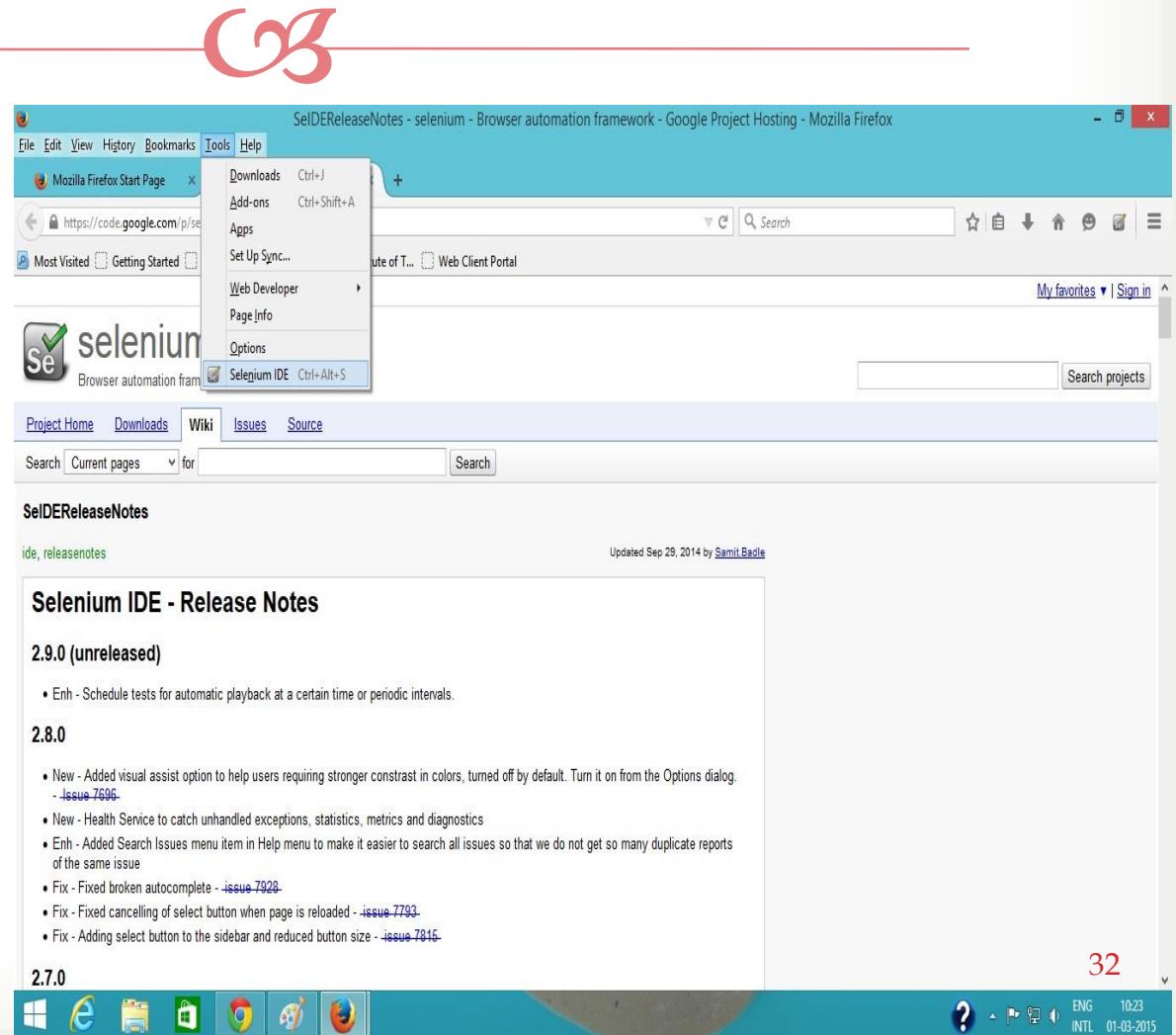


- Click on Restart Now.



# Installation of Selenium IDE contd....

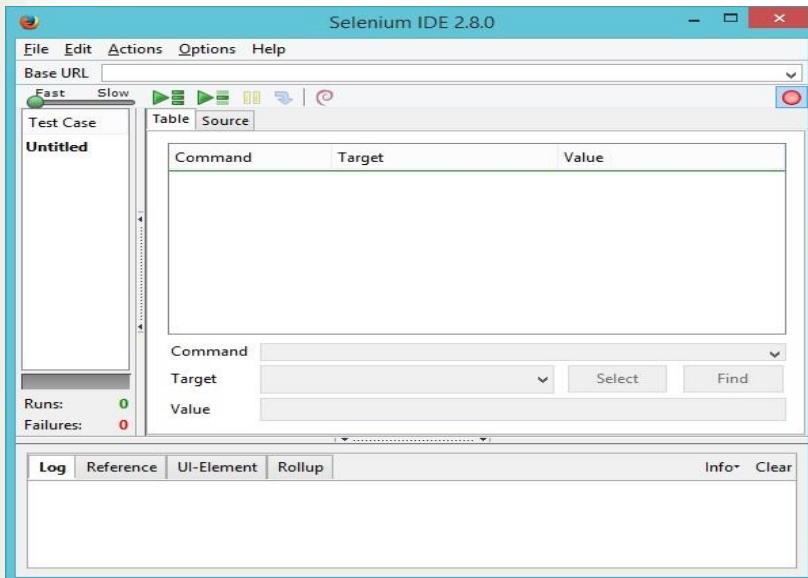
After Firefox reboots you will find the Selenium-IDE listed under the Firefox Tools menu as shown.



# Installation of Selenium IDE contd....



Also, you will see the Selenium-IDE icon in the toolbar as shown



Updated Sep 29, 2014 by [Samit Badale](#)

y default. Turn it on from the Options dialog.

- Enh - Added Search Issues menu item in Help menu to make it easier to search all issues so that we do not get so many duplicate reports of the same issue
- Fix - Fixed broken autocomplete - [issue 7928](#)
- Fix - Fixed cancelling of select button when page is reloaded - [issue 7793](#)
- Fix - Adding select button to the sidebar and reduced button size - [issue 7815](#)

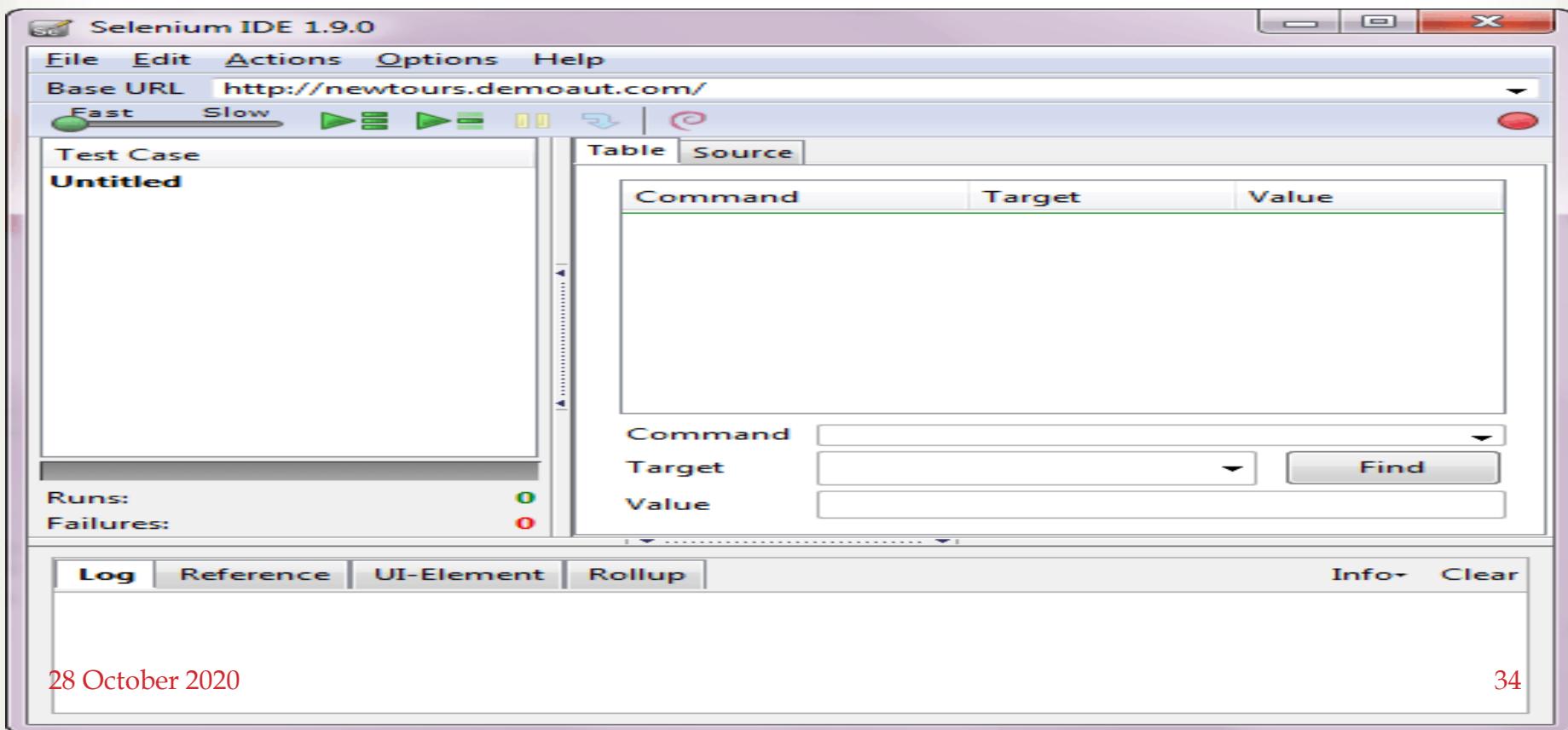
**2.7.0**

- Fix - Freezing between tabs in the bottom info panel in FF32 - [issue 7824](#)
- Fix - Fixes for [https://bugzilla.mozilla.org/show\\_bug.cgi?id=1016305](https://bugzilla.mozilla.org/show_bug.cgi?id=1016305)

# Installation of Selenium IDE contd....



☞ Selenium IDE should launch as shown below

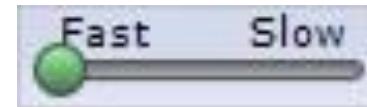


# Elements in Selenium IDE Toolbar

---



Speed Control



Run All TCs



Run single TC



Pause



Resume



Step



Record



# Recording a Selenium Test Case

---



- ❖ Open Firefox that has the IDE installed
- ❖ Open the base URL of the application to record.
- ❖ Keep the application in a common base state.
- ❖ Go To Tools → Selenium IDE and the IDE will be opened
- ❖ Start recording using the RED Button in the Tool bar.

# Recording a Selenium Test Case

---

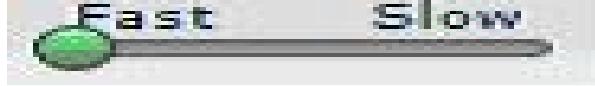


- ❖ Now perform the operations on the application as you are testing the application.
- ❖ Once you are done with the recording
  - ❖ Click on the Stop recording button and save the test case through the file menu.
  - ❖ By default it will be saved as a selenese script (HTML format)

# Running Your First Selenium Script

---



- ❖ Make sure the application is in the common base state.
- ❖ Click on the Run button.
- ❖ Here you can also control the speed of the execution using the toolbarA horizontal toolbar with a slider bar. The word "Fast" is at the left end and "Slow" is at the right end. A green oval-shaped handle is positioned in the middle of the slider, indicating a medium execution speed.
- ❖ Once the test is run you can view the test log in the bottom of the IDE window

# Selenium IDE Test Case Pane

---

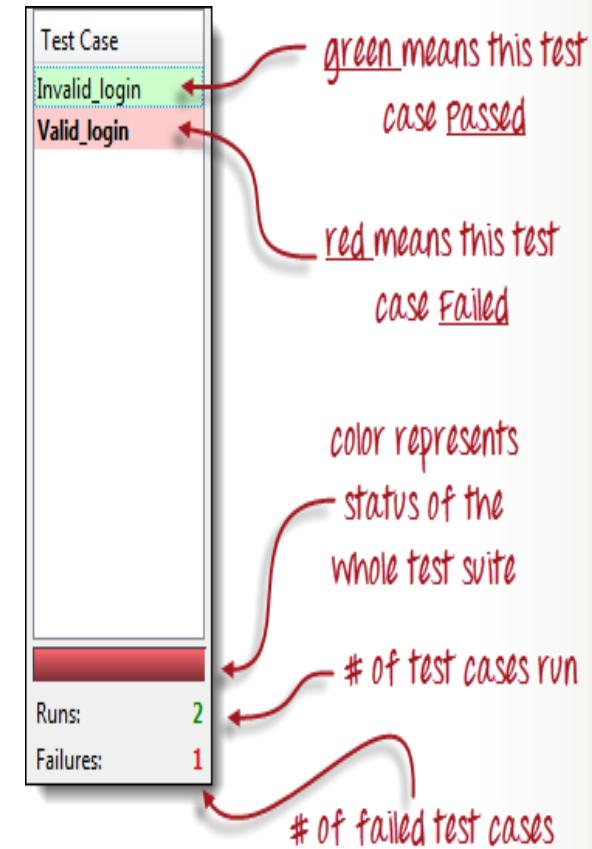


- ❖ In Selenium IDE, you can open **more than one test case at a time**.
- ❖ The **test case pane shows you the list of currently opened test cases**.
- ❖ When you open a test suite, the test case pane will **automatically list all the test cases** contained in it.

# Selenium IDE Test Case Pane



- ❖ The test case written in **bold font** is the **currently selected test case**
- ❖ At the bottom portion is a summary of the number of test cases that were run and failed.
- ❖ After playback, **each test case is color-coded** to represent if it passed or failed.
  1. Green color means "Passed."
  2. Red color means "Failed."
  3. Yellow color means "Currently running".



# Selenium IDE Editor

---



- ❖ You can think of the editor as **the place where all the actions happen**. It is available in two views:
  1. Table
  2. Source.

# Selenium IDE Editor



## Table View

- This is where you **create and modify Selenese commands**.
- After playback, each step is color-coded.

Command	Target	Value
open	/	
type	userName	tutorial
type	password	tutorial
clickAndWait	login	
verifyTitle	Find a Flight: Mercu...	
clickAndWait	link=SIGN-OFF	
verifyTitle	Sign-on: Mercury T...	
clickAndWait	link=Home	
verifyTitle	Welcome: Mercury ...	

Command:

Target:

Value:

# Selenium IDE Editor



## Source View

- It displays the steps in HTML (default) format.
- It also allows you to edit your script just like in the Table View.

The screenshot shows the Selenium IDE interface with the 'Source' tab selected. The main area displays an HTML script with color-coded syntax highlighting. The script includes several `<tr>` and `<td>` tags, indicating a table structure. The code is as follows:

```
<tr>
    <td>verifyTitle</td>
    <td>Sign-on: Mercury Tours </td>
    <td></td>
</tr>
<tr>
    <td>clickAndWait</td>
    <td>link=Home</td>
    <td></td>
</tr>
<tr>
    <td>verifyTitle</td>
    <td>Welcome: Mercury Tours</td>
    <td></td>
</tr>
</tbody></table>
</body>
</html>
```

# Using Selenium IDE

---



- ❖ Launch Selenium IDE.
- ❖ Drag the bar in “Speed Control” to “slow”.
- ❖ Click on red button to start recording.
- ❖ Open a web page in the firefox browser. (e.g. google.com)
- ❖ Type some query in the “google” page.

# Using Selenium IDE



- ❖ Click on red button to stop recording.
- ❖ Click on File menu->Save Test Case
- ❖ The table pane looks like

Command	Target	Value
open	/?gws_rd...	
type	id=gbqfq	automate...

Command	type
Target	id=gbqfq
Value	automated testing

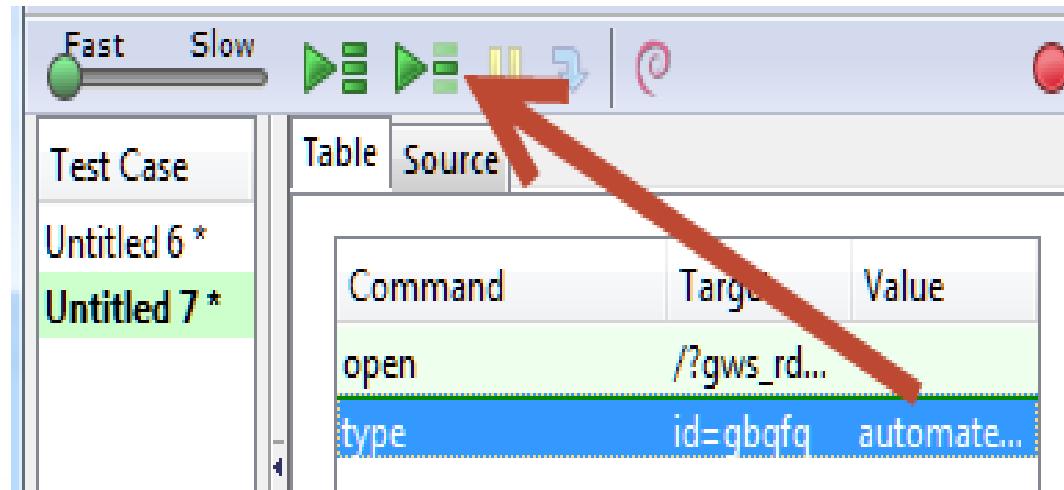
# Using Selenium IDE

---



❖ Click on the ‘Play current test case’ button.

This will automatically open Google.com, type in ‘automated testing’ into the query field, and display the search results.



# Using Selenium IDE

---



- ❖ If you take a closer look at the two commands in the Table pane, you'll see that you can not only change the command, but also alter the values associated with it.
- ❖ For example, the first command is 'open'. You can change this to anything else – Selenium IDE offers a huge list of built-in commands. You can also change the 'Target' URL to anything that you like.

<b>Command</b>	<input type="text" value="open"/>
<b>Target</b>	<input type="text" value="/?gws_rd=cr&amp;ei=0"/> <input type="button" value="Find"/>
<b>Value</b>	<input type="text"/>

# Using Selenium IDE

---



- ❑ The next command is ‘type’. This basically instructs Selenium to type-in the desired query into the search bar.
- ❑ You can change the query to anything you want by changing the ‘value’.

The screenshot shows the Selenium IDE interface with a single command listed:

Command	<code>type</code>
Target	<code>id=gbqfq</code>
Value	<code>automated testing</code>

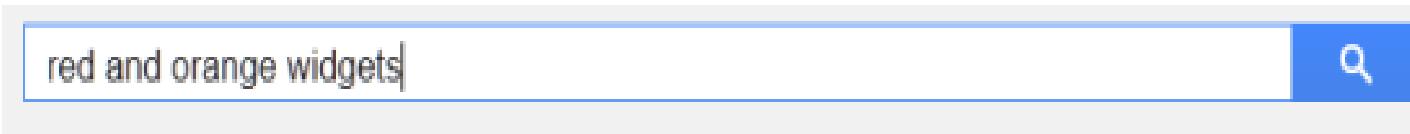
A 'Find' button is also visible next to the target field. The entire command is enclosed in a light gray rectangular border.

# Using Selenium IDE

---



For example, if you change it to 'red and orange widgets', Selenium IDE will automatically query 'red and orange widgets' into Google.



This is one of the most basic examples of what Selenium IDE can do. By combining different commands, you can make the IDE run complex tasks and test for bugs automatically.

# Using Selenium IDE Contextual Menu

---



- ❖ Besides the Selenium IDE window, the plugin also installs a contextual menu into Firefox that can be accessed by pressing the right mouse button.
- ❖ Let's see an example of how it works:

# Using Selenium IDE Contextual Menu

---



- ❖ Like the previous example, create a new test case and hit ‘record’. Then go to Google.com, type in a query ('automated testing') and wait for the search results page to load.
- ❖ After the results page opens, right click on the main search field on Google. A contextual menu will pop up with a list of actions you can perform.

# Using Selenium IDE Contextual Menu Contd....



automated testing

automated testing

automated testing tools list

automated testing framework

automated testing tools pdf

About 102,000,000 results (0.17 seconds)

Ads related to automated testing ⓘ

[Automate Software Testing - AutomationAnywhere.com](http://www.automationanywhere.com/testing)  
www.automationanywhere.com/testing ↗

Automate testing in minutes. No programming. Download Free Trial

Automation Anywhere has 237 followers on Google+

Request Live Demo - Free Trial - Talk to us

Contextual Menu (Right-clicked on the search input field):

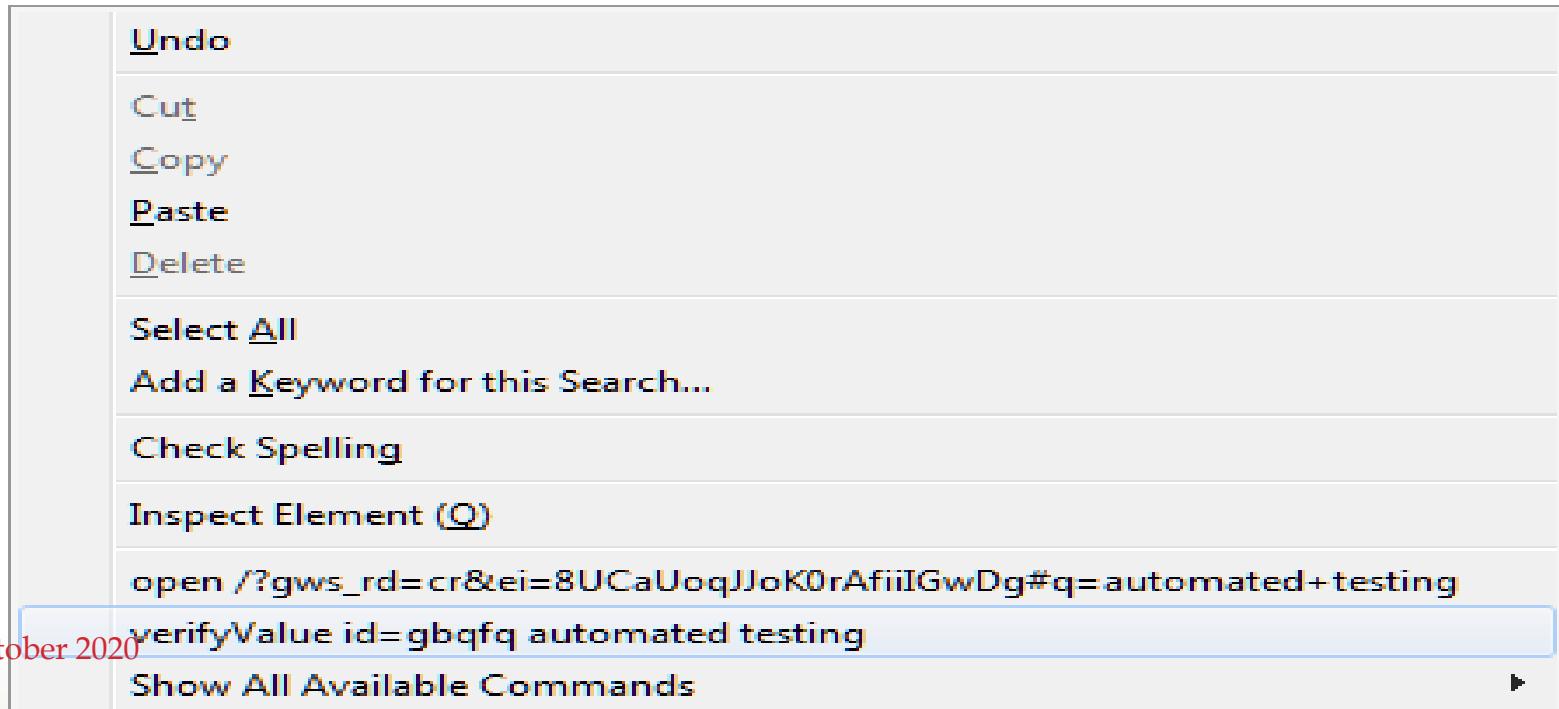
- Undo
- Cut
- Copy
- Paste
- Delete
- Select All
- Add a Keyword for this Search...
- Check Spelling
- Inspect Element ⓘ
- open /?qws\_rd=cr&ei=8UCaUoqlloKDrAfIIGwDg#q=automated+testing
- verifyValue id=gbqfq automated testing
- Show All Available Commands

# Using Selenium IDE Contextual Menu contd....

---



- At the bottom of the menu, you'll see a 'verifyValue' option. If you select this option, Selenium will make sure that there is always a value present in the search bar – a simple test.



# Using Selenium IDE Contextual Menu contd....



- ❖ You can also see a list of all available commands on the same menu. This will give you a huge list of commands to choose from like 'verifyTitle', 'verifyValue', 'open', 'storeTitle', etc.

```
open /?gws_rd=cr&ei=8UCaUoqJJ0rAfiiIGwDg#q=automated+testing
assertTitle automated testing - Google Search
assertValue id=gbqfq automated testing
assertText id=gbqfq
assertTable id=gs_id0.0.1
assertElementPresent id=gbqfq

verifyTitle automated testing - Google Search
verifyValue id=gbqfq automated testing
verifyText id=gbqfq
verifyTable id=gs_id0.0.1
verifyElementPresent id=gbqfq

waitForTitle automated testing - Google Search
waitForValue id=gbqfq automated testing
waitForText id=gbqfq
waitForTable id=gs_id0.0.1
waitForElementPresent id=gbqfq

storeTitle automated testing - Google Search
storeValue id=gbqfq automated testing
storeText id=gbqfq
storeTable id=gs_id0.0.1
storeElementPresent id=gbqfq
```

# Using Selenium IDE Contextual Menu contd....

---



- Using these different options, you can create automated tests to check different elements in a web app.
- For this example, if you stop the recording and play back the test, Selenium IDE will first open Google.com, type in the desired query, and finally, verify that the query has been entered into the search bar.

Command	Target	Value
open	/?gws_rd...	
type	id=gbqfq	automate...
verifyValue	id=gbqfq	automate...

# Selenium Remote Control (RC)

# Selenium RC Components

---



## ❖ The Selenium Server

- which launches and kills browsers, interprets and
- runs the Selenese commands passed from the test program, and
  - acts as an HTTP proxy, intercepting and verifying HTTP messages passed between the browser and the AUT.

# Selenium RC Components

---



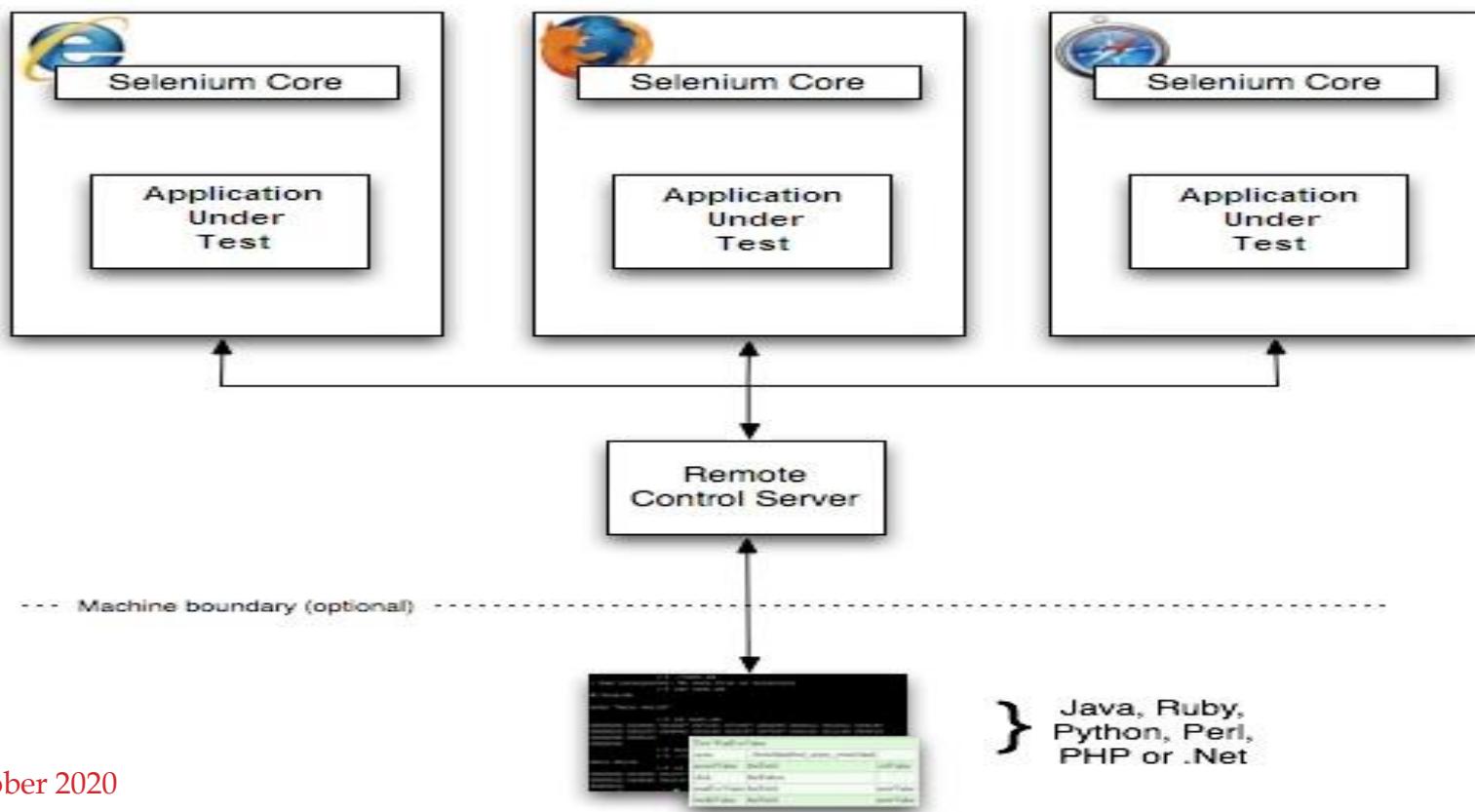
## ❖ Client libraries

- which provide the interface between
  - each programming language and
  - the Selenium RC Server.

# Selenium RC Architecture



Windows, Linux, or Mac (as appropriate)...



# Selenium RC Architecture

---



- ❖ The client libraries communicate with the Server passing each Selenium command for execution.
- ❖ Then the server passes the Selenium command to the browser using Selenium-Core JavaScript commands.
- ❖ The browser, using its JavaScript interpreter, executes the Selenium command.
- ❖ This runs the Selenese action or verification you specified in your test script.

# Selenium Server

---



- ❖ Selenium Server receives Selenium commands from your test program, interprets them, and reports back to your program the results of running those tests.
- ❖ The RC server bundles Selenium Core and automatically injects it into the browser.
- ❖ This occurs when your test program opens the browser (using a client library API function).

# Selenium Server

---



- ☞ Selenium-Core is a JavaScript program, actually a set of JavaScript functions
  - ☞ which interprets and executes Selenese commands
    - ☞ using the browser's built-in JavaScript interpreter.
- ☞ The Server receives the Selenese commands from your test program
  - ☞ using simple HTTP GET/POST requests.
- ☞ This means you can use any programming language that can send HTTP requests to automate Selenium tests on the browser.

# Client Libraries

---



- ❖ The client libraries provide the programming support that
  - ❖ allows you to run Selenium commands from a program of your own design.
- ❖ There is a different client library for each supported language.
- ❖ A Selenium client library provides
  - ❖ a programming interface (API), i.e., a set of functions,
    - ❖ which run Selenium commands from your own program.

# Client Libraries

---



- ❖ Within each interface, there is a programming function that supports each Selenese command.
- ❖ The client library
  - ❖ takes a Selenese command and
  - ❖ passes it to the Selenium Server for processing a
    - ❖ specific action or test against the application under test (AUT).

# Client Libraries

---



- ❖ The client library also
  - receives the result of that command and
  - passes it back to your program.
- ❖ Your program can
  - receive the result and
  - store it into a program variable and
  - report it as a success or failure, or possibly take corrective action if it was an unexpected error.

# Installation steps for Selenium RC

---



The pre-requisites to install RC are to have Java 1.5 or above version and Eclipse IDE installed in your machine.

1. You can download and install Java URL from the following  
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>
2. You can download and install Eclipse from the following URL:<http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/helios/R/eclipse-jee-helios-win32.zip>
3. Extract the Zip Folder and run the eclipse.exe File. There is no separate installation required rather than running the .Exe file.
4. Now go to <http://seleniumhq.org/download/> and click on Download under **Selenium Server** section

# Installation steps for Selenium RC

Downloads - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Mozilla Firefox Start Page | selenium rc - Google Search | Selenium 1 (Selenium RC) ... | Downloads

www.seleniumhq.org/download/

Most Visited Getting Started Gmail Google National Institute of T... Web Client Portal

**SeleniumHQ** Browser Automation

edit this page search selenium: Go Projects Download Documentation Support About

**Downloads**

Below is where you can find the latest releases of all the Selenium components. You can also find a list of [previous releases](#), [source code](#), and additional information for [Maven users](#) (Maven is a popular Java build tool).

**Selenium Server (formerly the Selenium RC Server)**

The Selenium Server is needed in order to run either Selenium RC style scripts or Remote Selenium Webdriver ones. The 2.x server is a drop-in replacement for the old Selenium RC server and is designed to be backwards compatible with your existing infrastructure.

Download version [2.45.0](#)

To use the Selenium Server in a Grid configuration [see the wiki page](#).

**The Internet Explorer Driver Server**

This is required if you want to make use of the latest and greatest features of the WebDriver InternetExplorerDriver. Please make sure that this is available on your \$PATH (or %PATH% on Windows) in order for the IE Driver to work as expected.

Download version 2.45.0 for (recommended) [32 bit Windows IE](#) or [64 bit Windows IE](#)

**Selenium Client & WebDriver Language Bindings**

In order to create scripts that interact with the Selenium Server (Selenium RC, Selenium Remote Webdriver) or create local Selenium WebDriver script you need to make use of language-specific client drivers. These languages include both 1.x and 2.x style clients.

While language bindings for other languages exist, these are the core ones that are supported by the

28 October 2020

67

BrowserStack

Windows Internet Explorer File Explorer Microsoft Edge Google Chrome Paint Mozilla Firefox

ENG INTL 11:09 01-03-2015

# Installation steps for Selenium RC



5. Click download link under **selenium Client drivers** for your desired language. (e.g. To download Selenium Java client drivers, click on Download link for Java)

The screenshot shows a Mozilla Firefox browser window with the title "Downloads - Mozilla Firefox". The address bar shows "www.seleniumhq.org/download/". The main content area displays the SeleniumHQ website, specifically the "Downloads" section. A download dialog box is overlaid on the page, asking if you want to save the file "selenium-server-standalone-2.45.0.jar". The file is described as an Executable Jar File (33.6 MB) from "http://selenium-release.storage.googleapis.com". The dialog has "Save File" and "Cancel" buttons. The SeleniumHQ logo and navigation menu are visible at the top of the page.

Downloads - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Mozilla Firefox Start Page selenium rc - Google Search Downloads

www.seleniumhq.org/download/

Most Visited Getting Started Gmail Google National Institute of T... Web Client Portal

SeleniumHQ Browser Automation

edit this page search selenium: Go Projects Download Documentation Support About

Selenium Downloads

Latest Releases Previous Releases Source Code Maven Information

Donate to Selenium with PayPal

through sponsorship You can sponsor the Selenium project if you'd like some public recognition of your generous contribution.

Selenium Sponsors See who supports the Selenium project.

The Internet Explorer Driver Server

This is required if you want to make use of the latest and greatest features of the WebDriver InternetExplorerDriver. Please make sure that this is available on your \$PATH (or %PATH% on Windows) in order for the IE Driver to work as expected.

Download version 2.45.0 for (recommended) 32 bit Windows IE or 64 bit Windows IE CHangelog

Selenium Client & WebDriver Language Bindings

In order to create scripts that interact with the Selenium Server (Selenium RC, Selenium Remote Webdriver) or create local Selenium WebDriver script you need to make use of language-specific client drivers. These languages include both 1.x and 2.x style clients.

While language bindings for other languages exist, these are the core ones that are supported by the

28 October 2020

68

Windows Internet Explorer Microsoft Edge Google Chrome Mozilla Firefox

BrowserStack

ENG INTL 11:11 01-03-2015

# Installation steps for Selenium RC



Downloads - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Mozilla Firefox Start Page    selenium rc - Google Search    Downloads

www.seleniumhq.org/download/

Most Visited Getting Started Gmail Google National Institute of T... Web Client Portal

**SeleniumHQ** Browser Automation

Selenium Downloads

Latest Releases

Previous Releases

Source Code

Maven Information

**Downloads**

Below is where you can find the latest releases of all the Selenium components. You can also find a list of [previous releases](#), [source code](#), and additional information for [Maven users](#) (Maven is a popular Java build tool).

**Selenium Server (formerly the Selenium RC Server)**

The Selenium Server is needed in order to run either Selenium RC style scripts or Remote Selenium Webdriver ones. The 2.x server is a drop-in replacement for the old Selenium RC server and is designed to be backwards compatible with your existing infrastructure.

Download version [2.45.0](#)

To use the Selenium Server in a Grid configuration [see the wiki page](#).

**The Internet Explorer Driver Server**

This is required if you want to make use of the latest and greatest features of the WebDriver InternetExplorerDriver. Please make sure that this is available on your \$PATH (or %PATH% on Windows) in order for the IE Driver to work as expected.

Download version 2.45.0 for (recommended) [32 bit Windows IE](#) or [64 bit Windows IE](#)

**Selenium Client & WebDriver Language Bindings**

In order to create scripts that interact with the Selenium Server (Selenium RC, Selenium Remote Webdriver) or create local Selenium WebDriver script you need to make use of language-specific client drivers. These languages include both 1.x and 2.x style clients.

While language bindings for other languages exist, these are the core ones that are supported by the

28 October 2020

BrowserStack

Windows Internet Explorer File Microsoft Edge Google Chrome Paint Mozilla Firefox

ENG INTL 11:11 01-03-2015

69

# Installation steps for Selenium RC

---



6. Extract the Client drivers into to your Local disk.
7. Open Eclipse IDE.
8. Create a New Project (Right Click on Project Explore-->New-->select Java Project-->Give the name and click on Finish.
9. Right click on the Project-->Build Path-->Configure Build Path--> Libraries tab-->Add External Jars.
10. Add the following list of jars to the libraries and Click on Ok to complete the setup.

Selenium-server-standalone-2.14.0

Selenium-java-2.14.0

Selenium-java-2.14.0-srcs

# Configuring TestNG Framework to Selenium RC

---



1. Go to <http://testng.org/doc/download.html> and download the latest version of TestNG.
2. Extract the zip file to your local disk
3. Go to Eclipse and add the testng-6.3.1.jar file to the external jar files as above.
4. Now go to Help Menu and click on **Install New Software**
5. Click on Add button.
6. Give the Name as TestNG (you can give any name, but we prefer TestNG)
7. In the location provide the following URL and click on OK  
<http://beust.com/eclipse> (For Eclipse 3.4 and above) <http://beust.com/eclipse1> (For Eclipse 3.3 and below)
8. Now Check the checkbox TestNG and click on Next to install the <sup>71</sup> TestNG

# Steps to Run Selenium Server

---



Before starting the execution of your scripts on selenium RC we have to start the selenium server. Following are the steps to start your server.

1. Open command prompt.
2. Type cmd.
3. Go to the location where your selenium-standalone-server2.14.0.jar resided.
4. Type the following command at command prompt to start the server.

**java -jar selenium-standalone-server-2.14.0.jar**

# Creating a Batch File for Selenium server

---



```
C:\Windows\system32\cmd.exe - java -jar selenium-server-standalone-2.44.0(2).jar
Microsoft Windows [Version 6.1.7600]
Copyright <c> 2009 Microsoft Corporation. All rights reserved.

C:\Users\KIIT>f:
F:>cd\Ph.D Documents\ST LAB\rc\Case study
F:\Ph.D Documents\ST LAB\rc\Case study>java -jar selenium-server-standalone-2.44.0(2).jar
Error: Unable to access jarfile selenium-server-standalone-2.44.0(2).jar
F:\Ph.D Documents\ST LAB\rc\Case study>java -jar selenium-server-standalone-2.44.0(2).jar
Error: Unable to access jarfile selenium-server-standalone-2.44.0(2).jar
F:\Ph.D Documents\ST LAB\rc\Case study>java -jar selenium-server-standalone-2.44.0(2).jar
Error: Unable to access jarfile selenium-server-standalone-2.44.0(2).jar
F:\Ph.D Documents\ST LAB\rc\Case study>cd\Ph.D Documents\ST LAB\rc
F:\Ph.D Documents\ST LAB\rc>java -jar selenium-server-standalone-2.44.0(2).jar
00:28:31.472 INFO - Launching a standalone server
00:28:31.777 INFO - Java: Oracle Corporation 24.80-b07
00:28:31.777 INFO - OS: Windows 7 6.1 x86
00:28:31.805 INFO - v2.44.0, with Core v2.44.0. Built from revision 76d78cf
00:28:32.189 INFO - RemoteWebDriver instances should connect to: http://127.0.0.1:4444/wd/hub
00:28:32.190 INFO - Version Jetty/5.1.x
00:28:32.191 INFO - Started HttpContext[/selenium-server/driver,/selenium-server/driver]
00:28:32.191 INFO - Started HttpContext[/selenium-server,/selenium-server]
00:28:32.192 INFO - Started HttpContext[/,/]
00:28:32.297 INFO - Started org.openqa.jetty.jetty.servlet.ServletHandler@57a293
00:28:32.297 INFO - Started HttpContext[/wd,/wd]
00:28:32.301 INFO - Started SocketListener on 0.0.0.0:4444
00:28:32.301 INFO - Started org.openqa.jetty.Server@1f18cbe
```

# Implementation of Selenium RC

---



1. Create a new project as Selenium RC in eclipse.
2. Right click on src → New → class → give name as rcdemo and package name as pack.
3. Write the code.

# Implementation of Selenium RC contd....



Java - selenium RC/src/pack/rcdemo.java - Eclipse

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer Task List Quick Access

rcdemo.java

```
package pack;
import com.thoughtworks.selenium.DefaultSelenium;
public class rcdemo {
    public static void main(String[] args) {
        Selenium selenium = new DefaultSelenium("localhost", 4444, "*googlechrome", "http://www.google.com");
        Selenium selenium1 = new DefaultSelenium("localhost", 4444, "*googlechrome", "http://www.google.com");
        selenium.start();
        selenium.open("/");
        selenium.windowMaximize();
        selenium1.start();
        selenium1.open("/");
        selenium1.windowMaximize();
    }
}
```

Find All Activate... Connect Mylyn Connect to your task and ALM tools or create a local task.

Outline

Problems Javadoc Declaration Console

Writable Smart Insert 20 : 18

75 00:14 09-04-2015

# Implementation of Selenium RC contd....

---



```
package pack;
import com.thoughtworks.selenium.DefaultSelenium;
import com.thoughtworks.selenium.Selenium;
public class rcdemo {
    public static void main(String[] args) {
        Selenium selenium = new DefaultSelenium("localhost", 4444,
        "*googlechrome", "http://www.nitrkl.ac.in");
        Selenium selenium1 = new DefaultSelenium("localhost", 4444,
        "*googlechrome", "http://www.gmail.com");
        selenium.start();
        selenium.open("/");
        selenium.windowMaximize();
        selenium1.start();
        selenium1.open("/");
        selenium1.windowMaximize();
    }
}
```

# Implementation of Selenium RC contd....

Then both the given websites will open.

The screenshot shows the Selenium Remote Control interface. At the top, there are two tabs: "Selenium Remote Control" and "National Institute of Tech". The main window displays a browser window with the URL [www.nitrkl.ac.in/selenium-server/core/RemoteRunner.html?sessionId=9554002f93bb4f7a9198aacf9aa76384&multiWindow=true&baseUrl=http%3A%2F%2Fwww.nitrkl.a](http://www.nitrkl.ac.in/selenium-server/core/RemoteRunner.html?sessionId=9554002f93bb4f7a9198aacf9aa76384&multiWindow=true&baseUrl=http%3A%2F%2Fwww.nitrkl.a). A yellow status bar at the bottom of the browser window says: "You are using an unsupported command-line flag: --disable-web-security. Stability and security will suffer." On the left side of the interface, there is a sidebar with the title "Selenium Functional Testing for Web Apps" and the subtitle "Open Source From ThoughtWorks and Friends". It contains two buttons: "Show Log" (which is selected) and "Slow Mode". Below these buttons is the session ID: "9554002f93bb4f7a9198aacf9aa76384". To the right of the sidebar, under the heading "Command History:", is the following code:

```
getTitle()  
setContext(9554002f93bb4f7a9198aacf9aa76384)  
open(/)  
windowMaximize()
```

At the bottom of the slide, there is a red timestamp "28 October 2020" and a red page number "77". The bottom right corner of the slide shows the Windows taskbar with icons for various applications like File Explorer, Word, and Google Chrome, along with the date "09-04-2015" and time "00:37".

# Implementation of Selenium RC contd....

Selenium Remote Control x National Institute of Tech x

www.nitrkl.ac.in

Locate | निर्दि | External Links | AA+ | Home | Search | Sitemap | Feedback | Contact Us | Login

THURSDAY APRIL 9, 2015

राष्ट्रीय प्रौद्योगिकी संस्थान राउरकेला  
National Institute of Technology Rourkela

**Welcome**



**THE INSTITUTE**

- THE INSTITUTE
- ACADEMICS
- JOBS & TENDERS
- EVENTS & HAPPENINGS
- PROSPECTIVE STUDENTS
- CURRENT STUDENTS
- FACULTY & STAFF
- INDUSTRY & ALUMNI

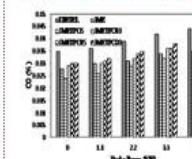
**FULL CONTENTS**

**ANNOUNCEMENTS**

- M.Sc. Admissions in NITs
- Scrutiny Result for Faculty Position
- Interview Schedule for Faculty Selection, 2015
- INTERVIEW NOTICE ES.03.2014
- Summer Internship Programme - 2015
- Conversion from CGPA to %

**CURRENT RESEARCH**

Performance and Emission Studies of a Diesel Engine Using Biodiesel Tyre Pyrolysis Oil Blends Abhishek Sharma and S Murugan Department of Mechanical Engineering National Institute of Technology Rourkela



The latest trend world-wide, is to restrict the use of fossil fuels and replace them partially or totally by renewable fuels. In the present study, Jatropha methyl ester (JME) blended with tyre pyrolysis oil (TPO) was tested in a single cylinder, 4 stroke, air cooled, direct injection (DI) engine, to evaluate the performance and emissions characteristics. Four JMETPO blends, namely, JMETPO5, JMETPO10, JMETPO15 and JMETPO20 were used as fuel in the engine. The performance and emission results were analysed and compared with those of diesel operation. More in SAE World Congress & Exhibition, Detroit, US, 8 April2013, doi: 10.4271/2013-01-1150. (*List of Research*)

**NEW SPONSORED PROJECT**

CONFORMAL ARRAY SYNTHESIS USING EVOLUTIONARY ALGORITHMS .....

PI: Prof.(Mrs.) K. Ratna Subhashini  
Sponsor: ISRO

FIST PROGRAM-2011

PI: Prof. Raghubansh Kumar Singh  
Sponsor: DST

**KUDOS TO NITIANS**

NIT ROURKELA RANKED NUMBER ONE AMONG ALL NITS-EDU-RAND .....

Team: NIT, Rourkela

OUR STUDENTS NISHANTH NIHAR AND WASIM SAJJAD WIN THE TA .....

Team: NIT, Rourkela

ISES ORDER OF MERIT AWARD 2015 (YOUNG SCIENTISTS) PRESE .....

Team: NIT, Rourkela

Quality is an act, it is a habit.  
— Aristotle

28 October 2020

connect NITR-HALL

78



# Selenium Webdriver

# Introduction

---



- ❖ Selenium WebDriver fits in the same role as RC did, and has incorporated the original 1.x bindings.
- ❖ It refers to both the language bindings and the implementations of the individual browser controlling code.
- ❖ This is commonly referred to as just "WebDriver" or sometimes as Selenium 2.

Selenium 1.0 + WebDriver = Selenium 2.0

# Introduction

---



- ❖ Selenium-WebDriver was developed to better support dynamic web pages where elements of a page may change without the page itself being reloaded.
- ❖ WebDriver's goal is to supply a well-designed object-oriented API that provides improved support for modern advanced web-app testing problems.
- ❖ Selenium-WebDriver makes direct calls to the browser using each browser's native support for automation.

# Introduction

---



- ❖ WebDriver is a tool for automating web application testing, and in particular to verify that they work as expected.
- ❖ It aims to provide a friendly API that's easy to explore and understand, easier to use than the Selenium-RC (1.0) API, which will help to make your tests easier to read and maintain.
- ❖ It's not tied to any particular test framework, so it can be used equally well in a unit testing or from a plain old "main" method.

# Installation of Selenium WebDriver



❖ Step 1 - Install Java on your computer

Download and install the Java Software Development Kit (JDK).



# Installation of Selenium

## WebDriver contd....



❖ Next -

1 click this radio button

Java SE Development Kit 7u10  
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

Accept License Agreement  Decline License Agreement

Product / File Description	File Size	Download
Linux x86	106.63 MB	<a href="#">jdk-7u10-linux-i586.rpm</a>
Linux x86	92.97 MB	<a href="#">jdk-7u10-linux-i586.tar.gz</a>
Linux x64	104.75 MB	<a href="#">jdk-7u10-linux-x64.rpm</a>
Linux x64	91.71 MB	<a href="#">jdk-7u10-linux-x64.tar.gz</a>
Mac OS X x64	143.46 MB	<a href="#">jdk-7u10-macosx-x64.dmg</a>
Solaris x86 (SVR4 package)	135.61 MB	<a href="#">jdk-7u10-solaris-i586.tar.Z</a>
Solaris x86	91.97 MB	<a href="#">jdk-7u10-solaris-i586.tar.gz</a>
Solaris SPARC (SVR4 package)	135.79 MB	<a href="#">jdk-7u10-solaris-sparc.tar.Z</a>
Solaris SPARC	95.3 MB	<a href="#">jdk-7u10-solaris-sparc.tar.gz</a>
Solaris SPARC 64-bit (SVR4 package)	22.86 MB	<a href="#">jdk-7u10-solaris-sparcv9.tar.Z</a>
Solaris SPARC 64-bit	17.57 MB	<a href="#">jdk-7u10-solaris-sparcv9.tar.gz</a>
Solaris x64 (SVR4 package)	22.64 MB	<a href="#">jdk-7u10-solaris-x64.tar.Z</a>
Solaris x64	15.02 MB	<a href="#">jdk-7u10-solaris-x64.tar.gz</a>
Windows x86	88.72 MB	<a href="#">jdk-7u10-windows-i586.exe</a>
Windows x64	90.36 MB	<a href="#">jdk-7u10-windows-x64.exe</a>
LINUX ARM V6/V7 Soft Float ABI	65.07 MB	<a href="#">jdk-7u10-linux-arm-sfp.tar.gz</a>

choose the JDK that corresponds to your os

# Installation of Selenium

## WebDriver contd....



- ❖ This JDK version comes bundled with Java Runtime Environment (JRE) so you do not need to download and install the JRE separately.
- ❖ Step 2 - Install Eclipse IDE
- ❖ Download "**Eclipse IDE for Java Developers**" . Be sure to choose correctly between Windows 32 Bit and 64 Bit versions.

*Choose the correct version here*

The screenshot shows a download page for the "Eclipse IDE for Java Developers". It features a large green download button with the text "Windows 32 Bit" and "Windows 64 Bit". A red dashed arrow points from the text "Choose the correct version here" to this button. To the left, there is a small icon of a computer monitor and keyboard, followed by the text "Eclipse IDE for Java Developers, 150 MB", "Downloaded 1,173,783 Times", and a "Details" link. The entire screenshot is enclosed in a thin black border.

# Installation of Selenium

## WebDriver contd....



- ❖ You should be able to download a ZIP file named "eclipse-java-juno-SR1-win32-x86\_64.zip" (the version number "SR1" may change over time).



# Installation of Selenium

## WebDriver contd....



- Inside that ZIP file, there is an "eclipse" folder which contains all the application files. You can extract the "eclipse" folder anywhere you want in your PC; but for this tutorial, extract it to your C drive.



- Unlike other popular software, no installation is required to use eclipse.

# Installation of Selenium WebDriver contd....

---



- Step 3 - Download the Selenium Java Client Driver from <http://www.seleniumhq.org/download/>

You will find client drivers for other languages there, but only choose the one for Java.

this is the download link for the Java client driver

Language	Client Version	Release Date	Download	Change log	Javadoc
Java	2.25.0	2012-07-18	<a href="#">Download</a>	<a href="#">Change log</a>	<a href="#">Javadoc</a>
C#	2.25.1	2012-07-19	<a href="#">Download</a>	<a href="#">Change log</a>	<a href="#">API docs</a>
Ruby	2.25.0	2012-07-18	<a href="#">Download</a>	<a href="#">Change log</a>	<a href="#">API docs</a>
Python	2.25.0	2012-07-18	<a href="#">Download</a>	<a href="#">Change log</a>	<a href="#">API docs</a>

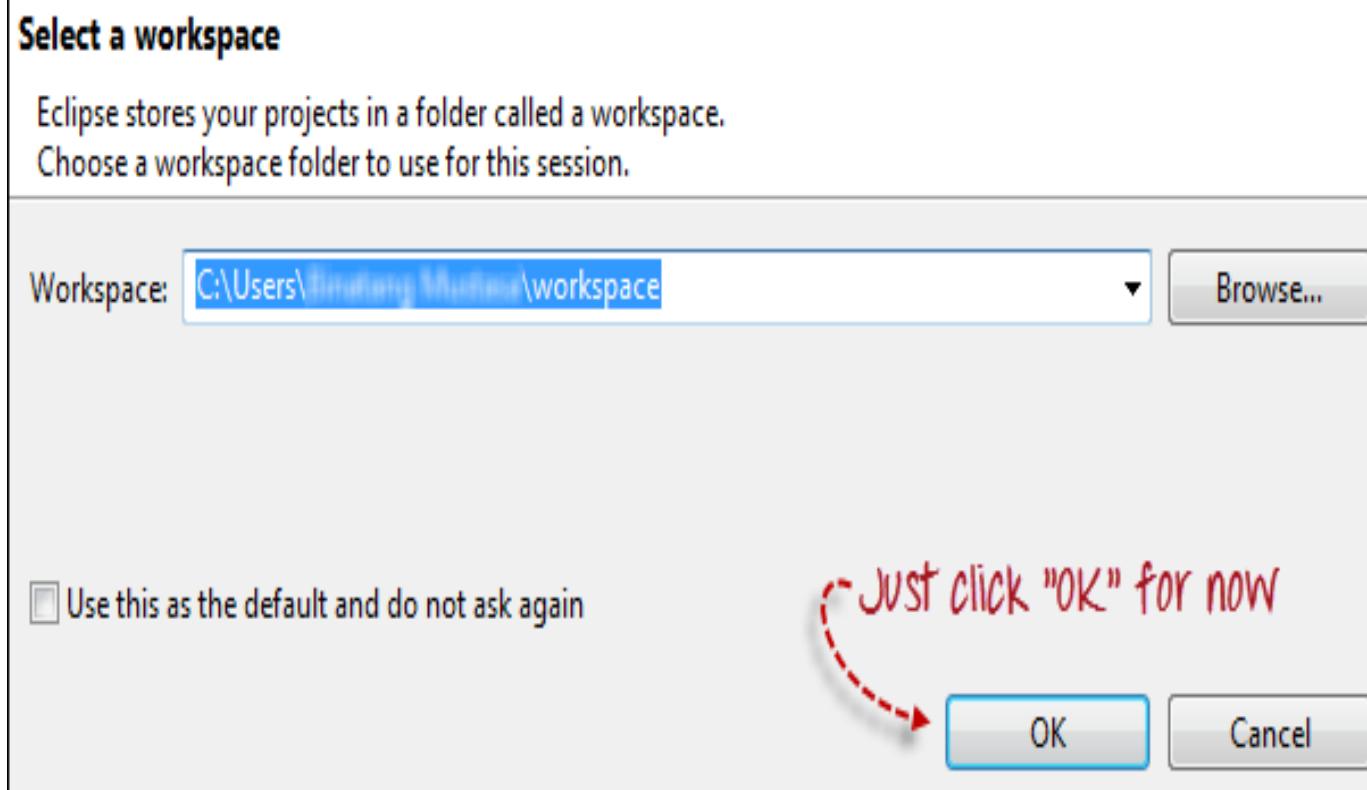
# Installation of Selenium WebDriver contd....

---



- ❖ This download comes as a ZIP file named "selenium-2.25.0.zip".
- ❖ For simplicity, extract the contents of this ZIP file on your C drive so that you would have the directory "C:\selenium-2.25.0\".
- ❖ This directory contains all the JAR files that we would later import on Eclipse.
- ❖ **Step 4 - Configure Eclipse IDE with WebDriver**
  1. Launch the "eclipse.exe" file inside the "eclipse" folder that we extracted in Step 2.
  2. If you followed Step 2 correctly, the executable should be located on C:\eclipse\eclipse.exe.
  3. When asked to select for a workspace, just accept the default location.

# Installation of Selenium WebDriver contd....

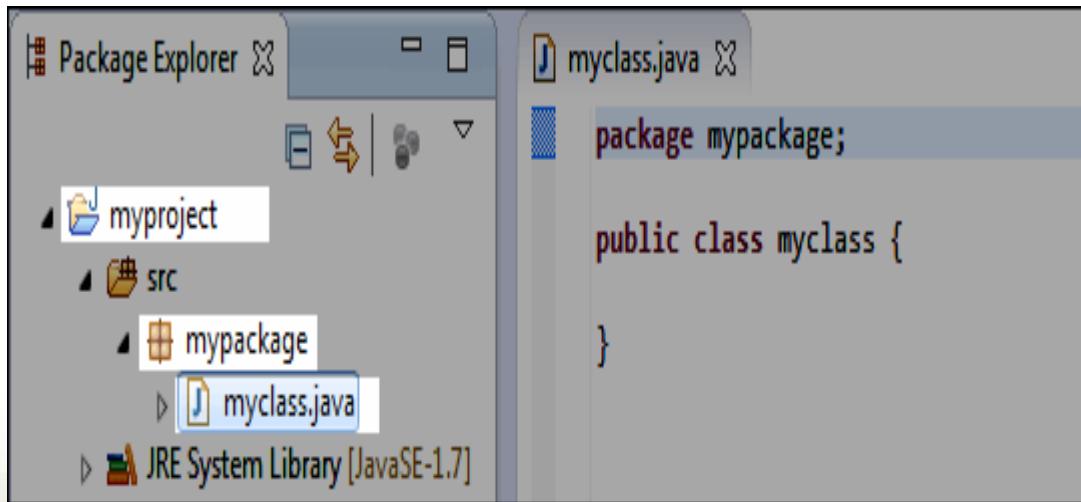


# Installation of Selenium WebDriver

## contd....



4. Create a new project through File > New > Java Project.
5. Name the project as "myproject".
6. Right-click on the newly created project and select New > Package.
7. Name that package as "mypackage".
8. Create a new Java class under *mypackage* by right-clicking on it and then selecting New > Class, and then name it as "myclass".
9. Your Eclipse IDE should look like the image below.



# Installation of Selenium WebDriver

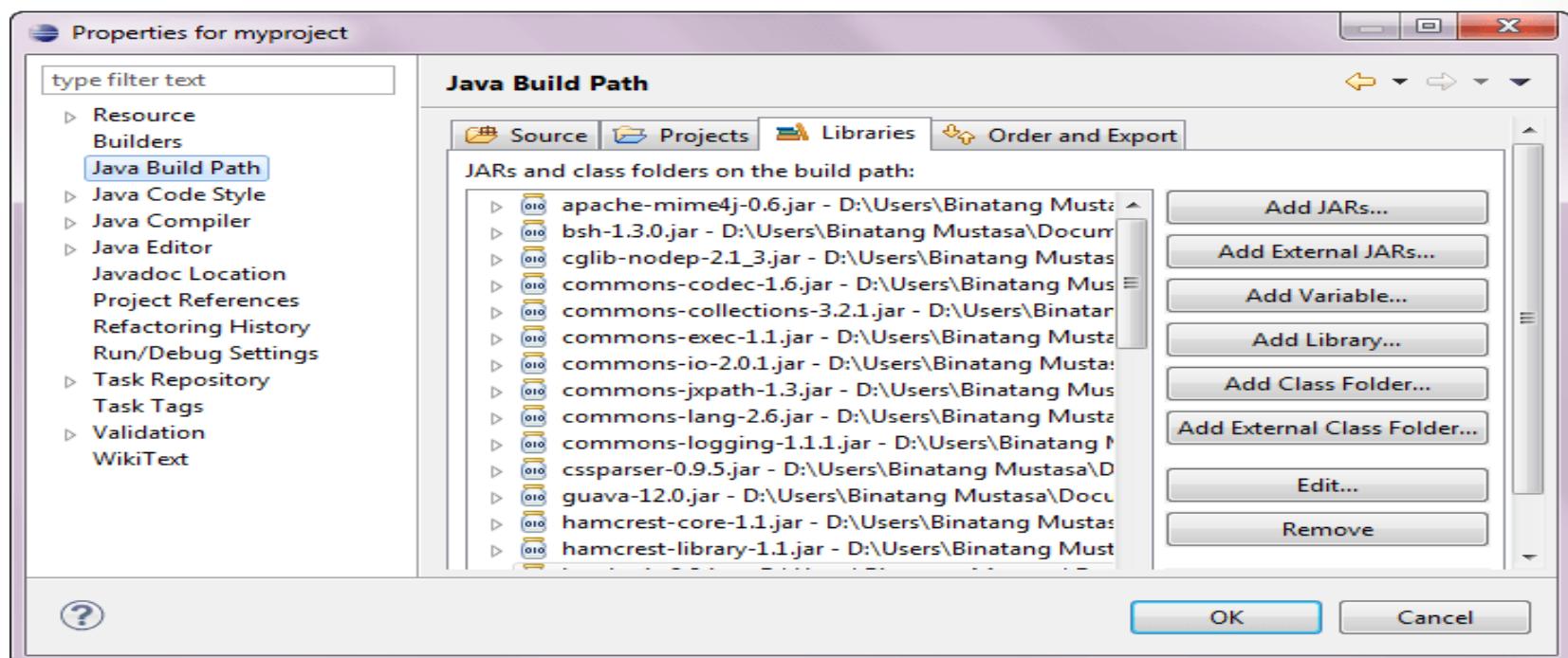
## contd....

---



10. Right-click on *myproject* and select **Properties**.
11. On the Properties dialog, click on “Java Build Path”.
12. Click on the **Libraries** tab, and then click “Add External JARs..”
13. Navigate to C:\selenium-2.25.0\ (or any other location where you saved the extracted contents of “selenium-2.25.0.zip” in Step 3).
14. Add all the JAR files inside and outside the “libs” folder.
15. Your Properties dialog should now look similar to the image below.

# Installation of Selenium WebDriver contd....



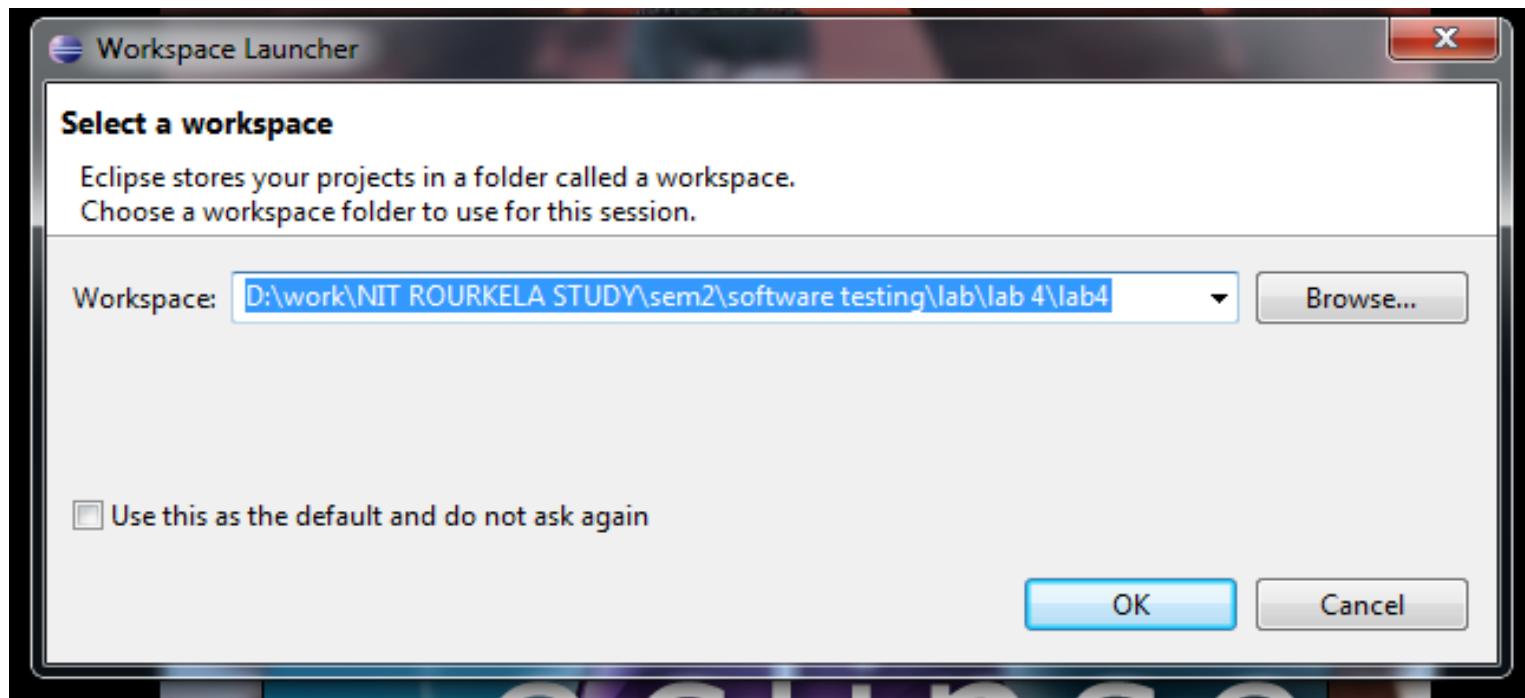
16. Finally, click OK and we are done importing Selenium libraries into our project.

# Implementation of Selenium Webdriver

---



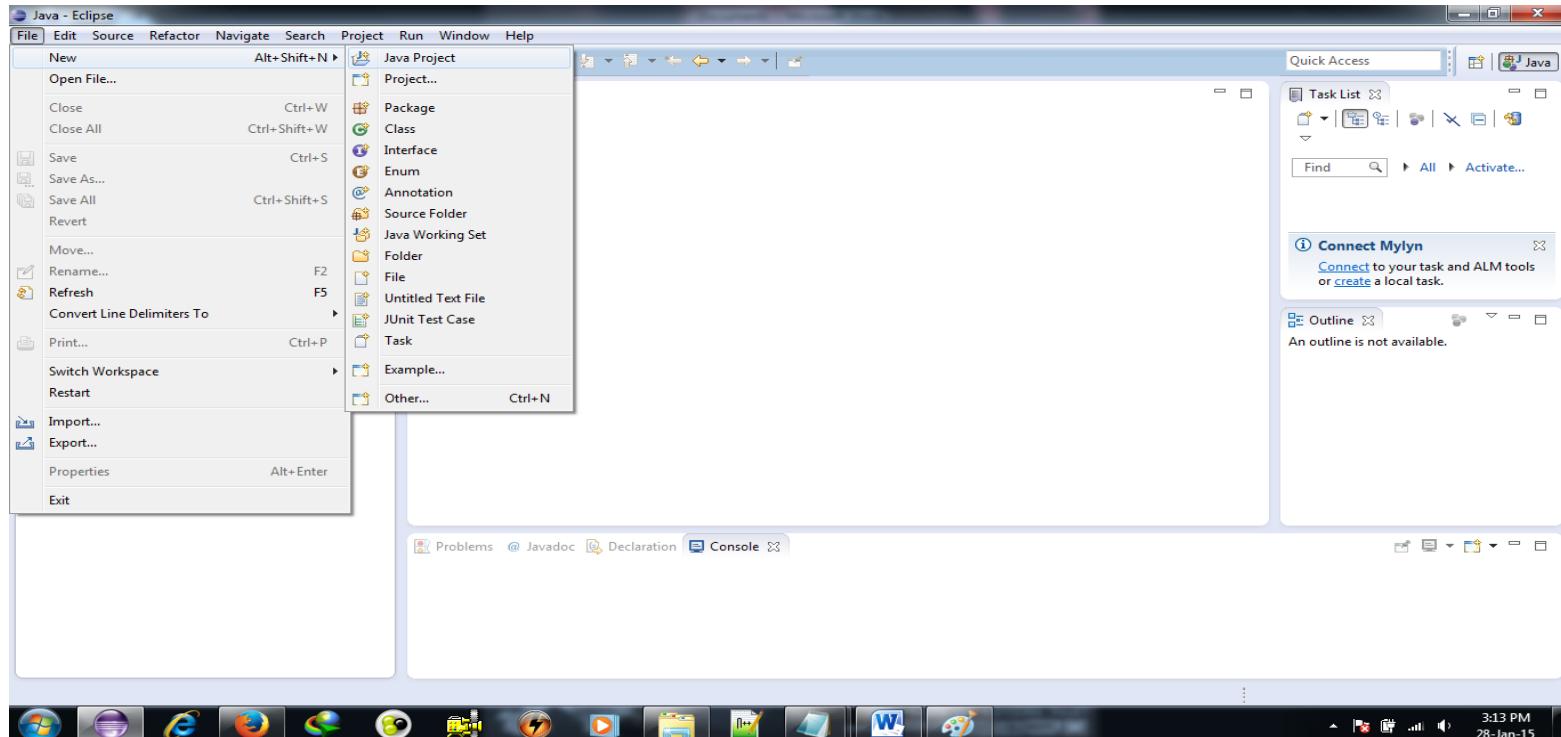
Open Eclipse.



# Implementation of Selenium Webdriver contd....



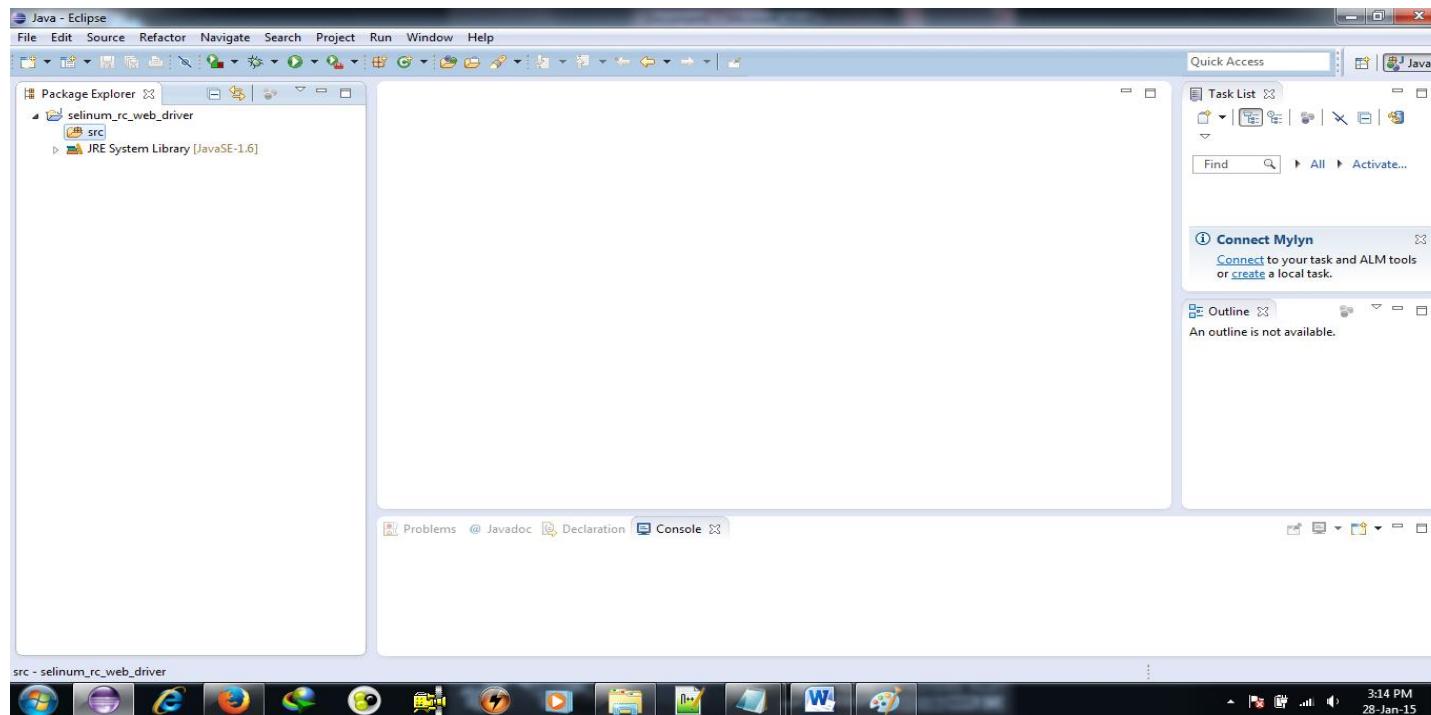
☞ Go to new->JAVA project.



# Implementation of Selenium Webdriver contd....



>Create a new project.

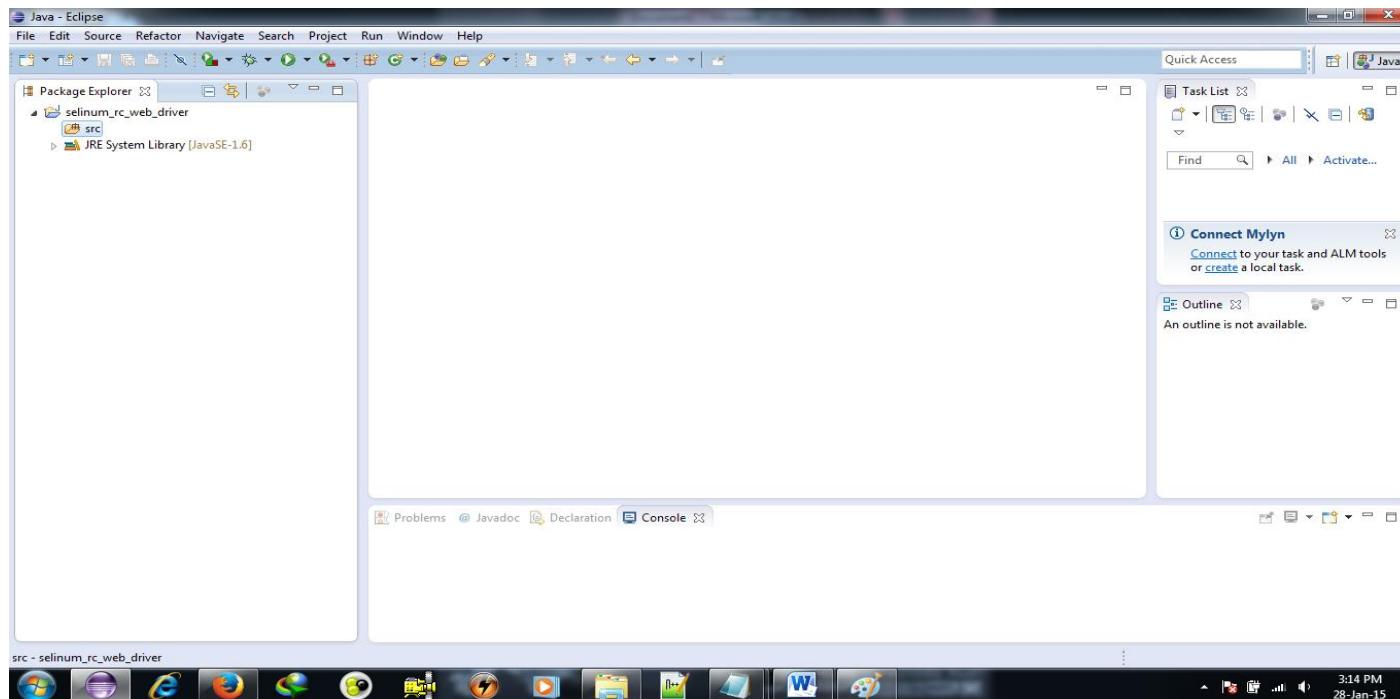


# Implementation of Selenium Webdriver contd....

---



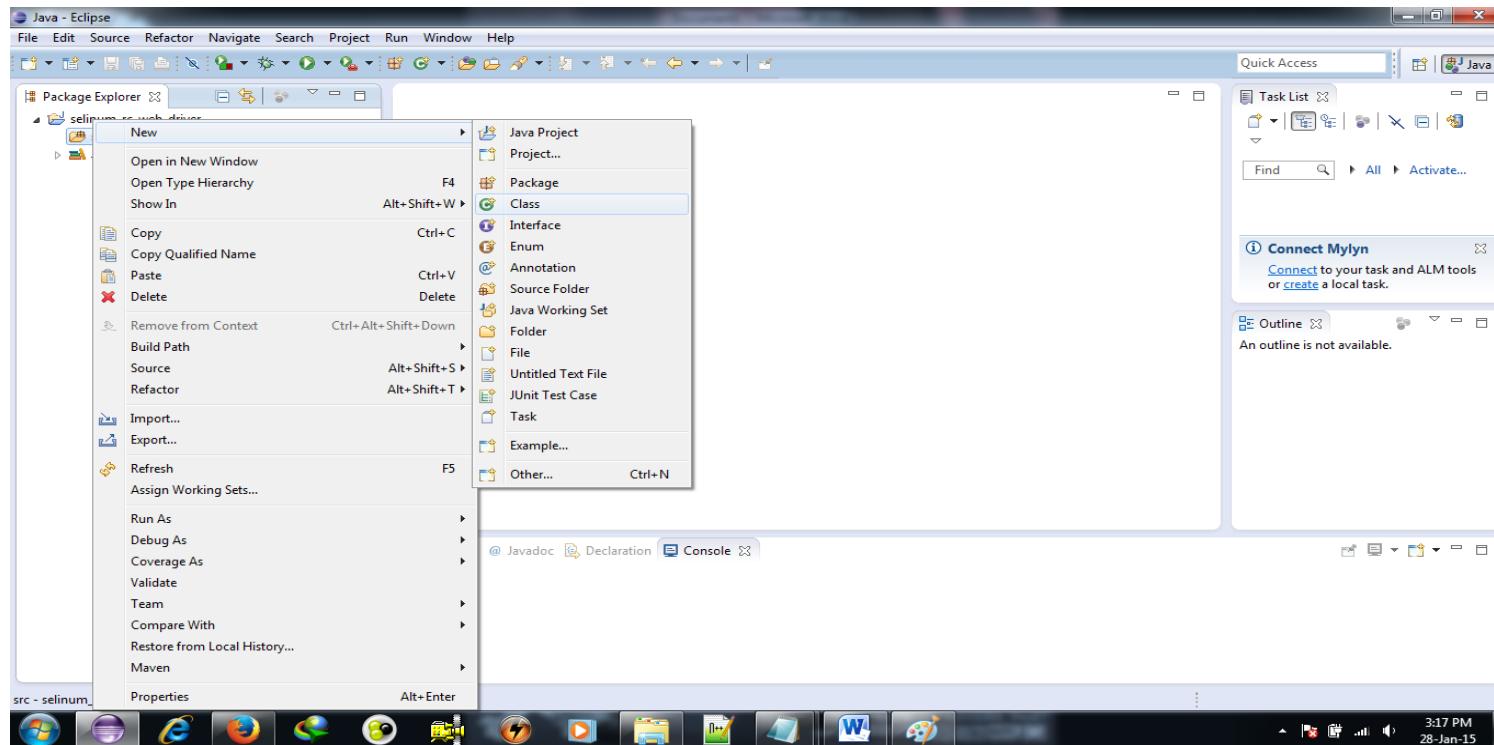
❖ New project will be created.



# Implementation of Selenium Webdriver contd....



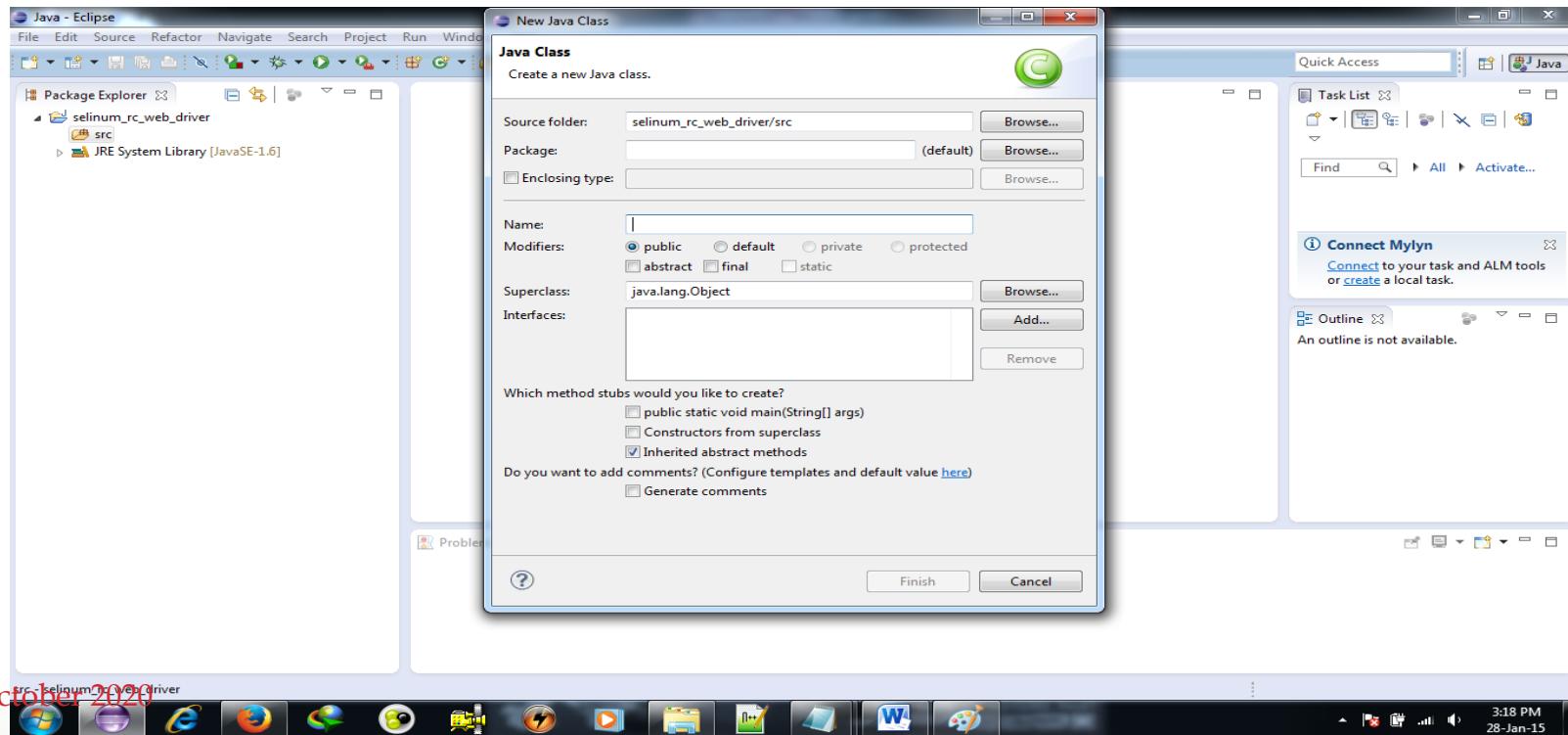
>Create new java class.



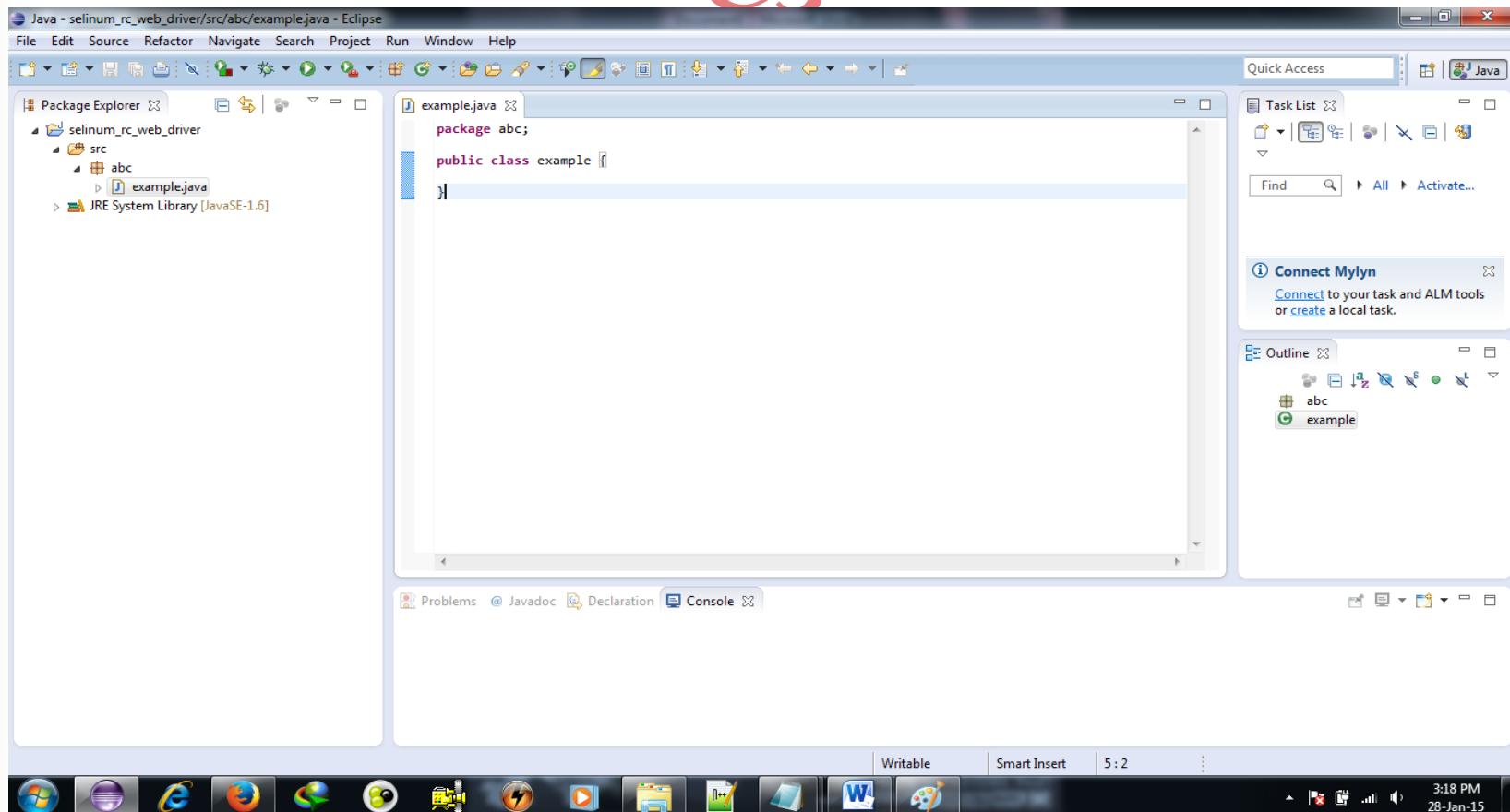
# Implementation of Selenium Webdriver contd....



☞ Enter java class name and package name and then click finish.



# Implementation of Selenium Webdriver contd....



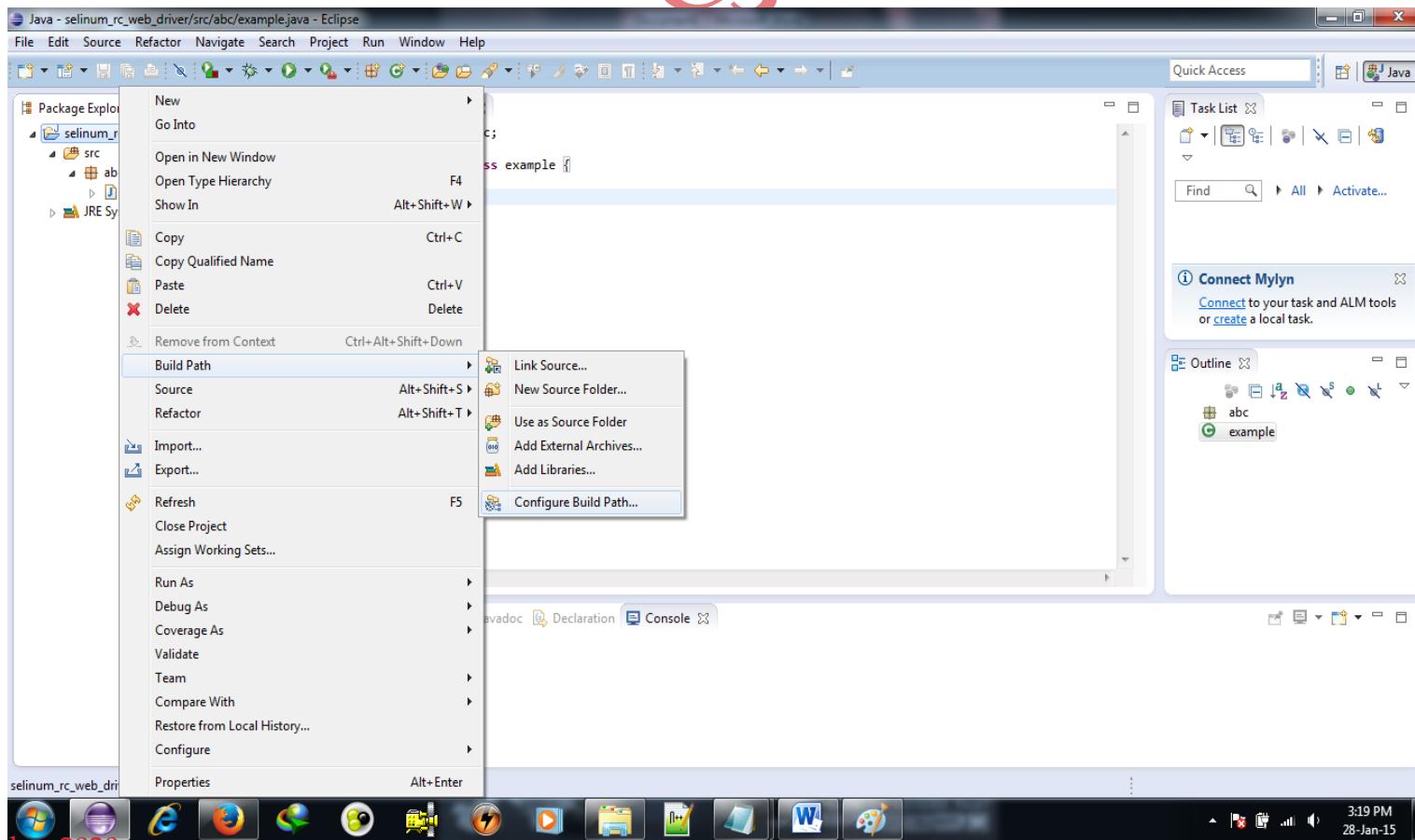
# Implementation of Selenium Webdriver contd....

---



- ❖ Now we have to add different library files for our project. For adding different library files the step are
- ❖ Right click on project → build path → configure build path

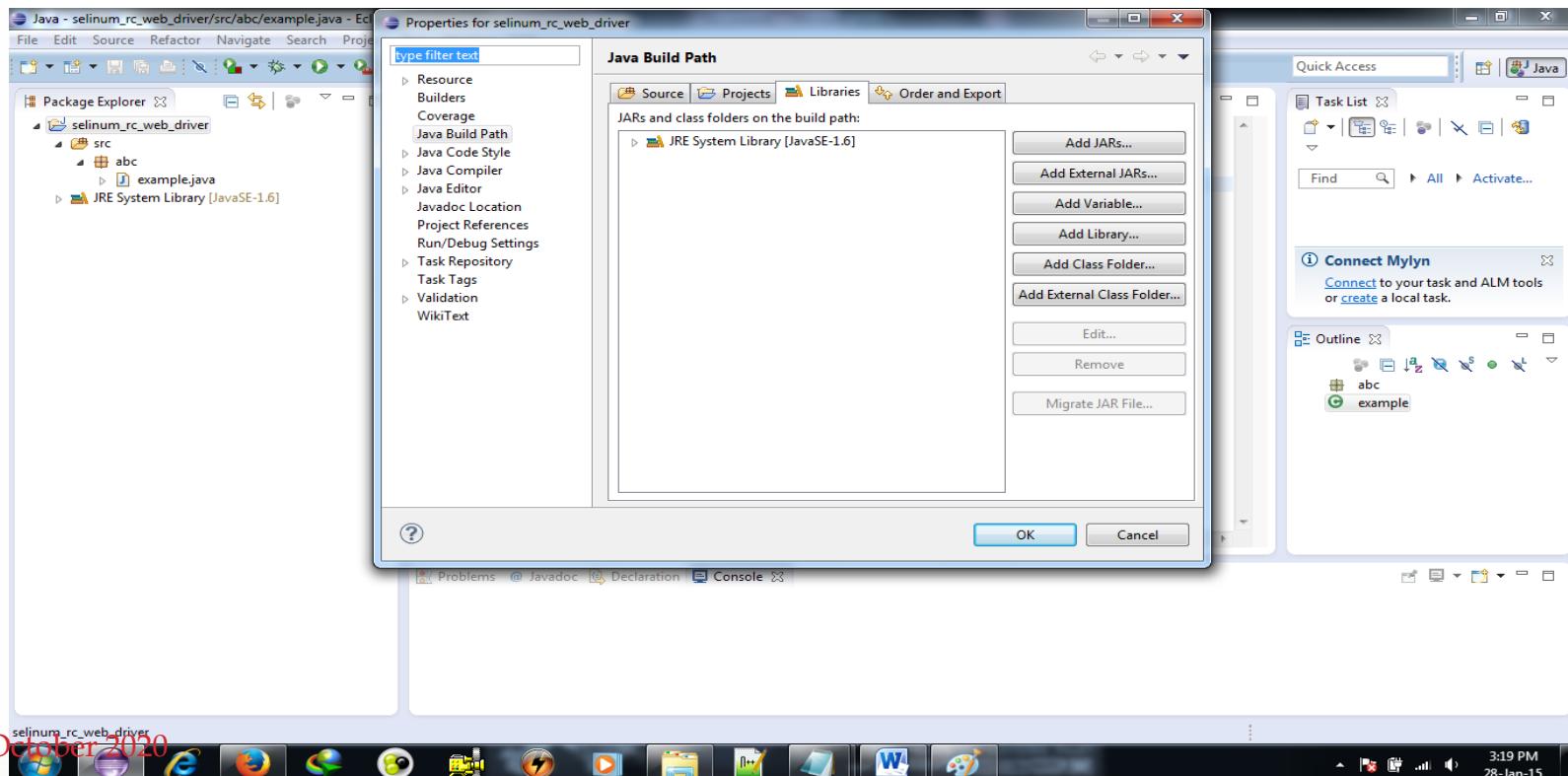
# Implementation of Selenium Webdriver contd....



# Implementation of Selenium Webdriver contd....



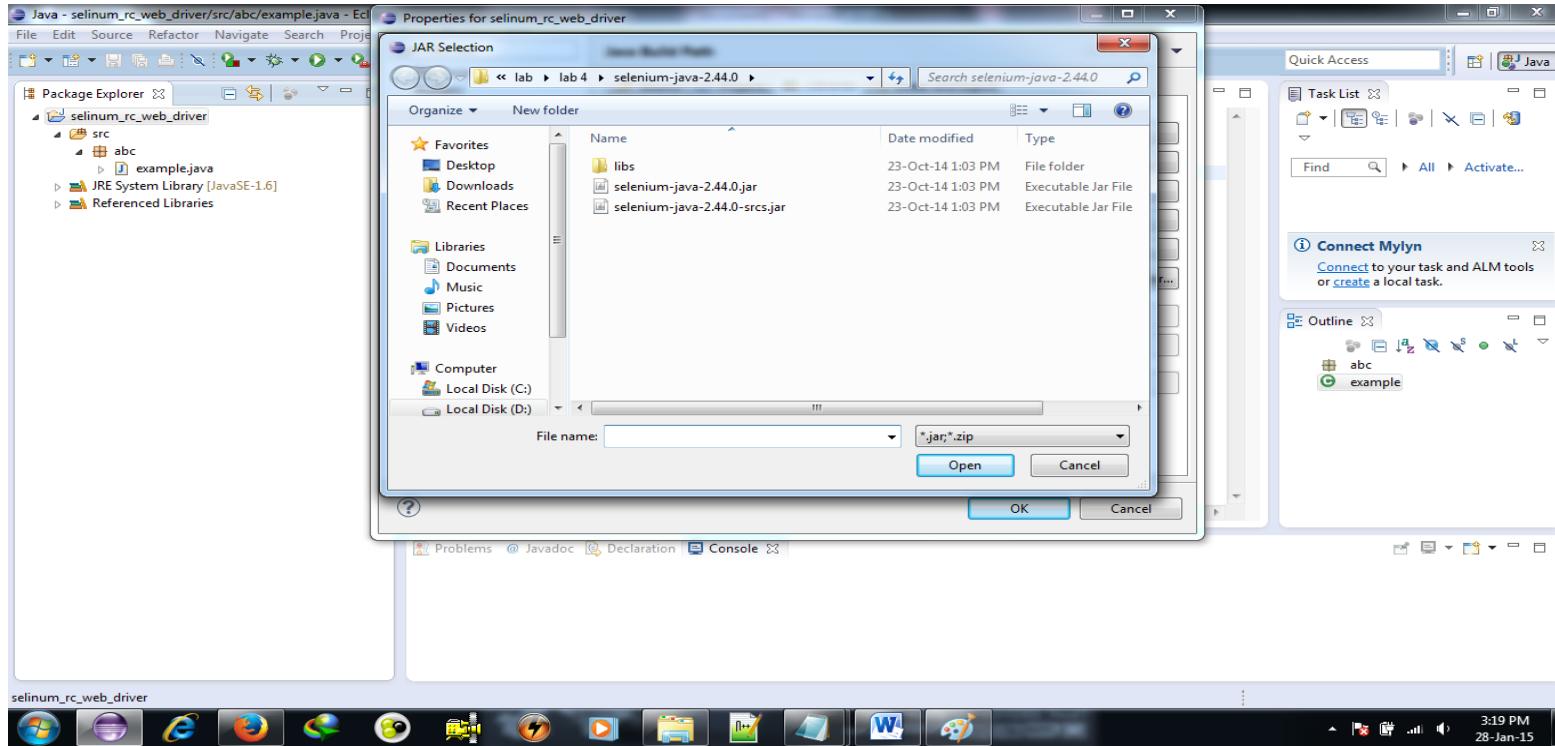
Then click on libraries and add external jar files.



# Implementation of Selenium Webdriver contd....



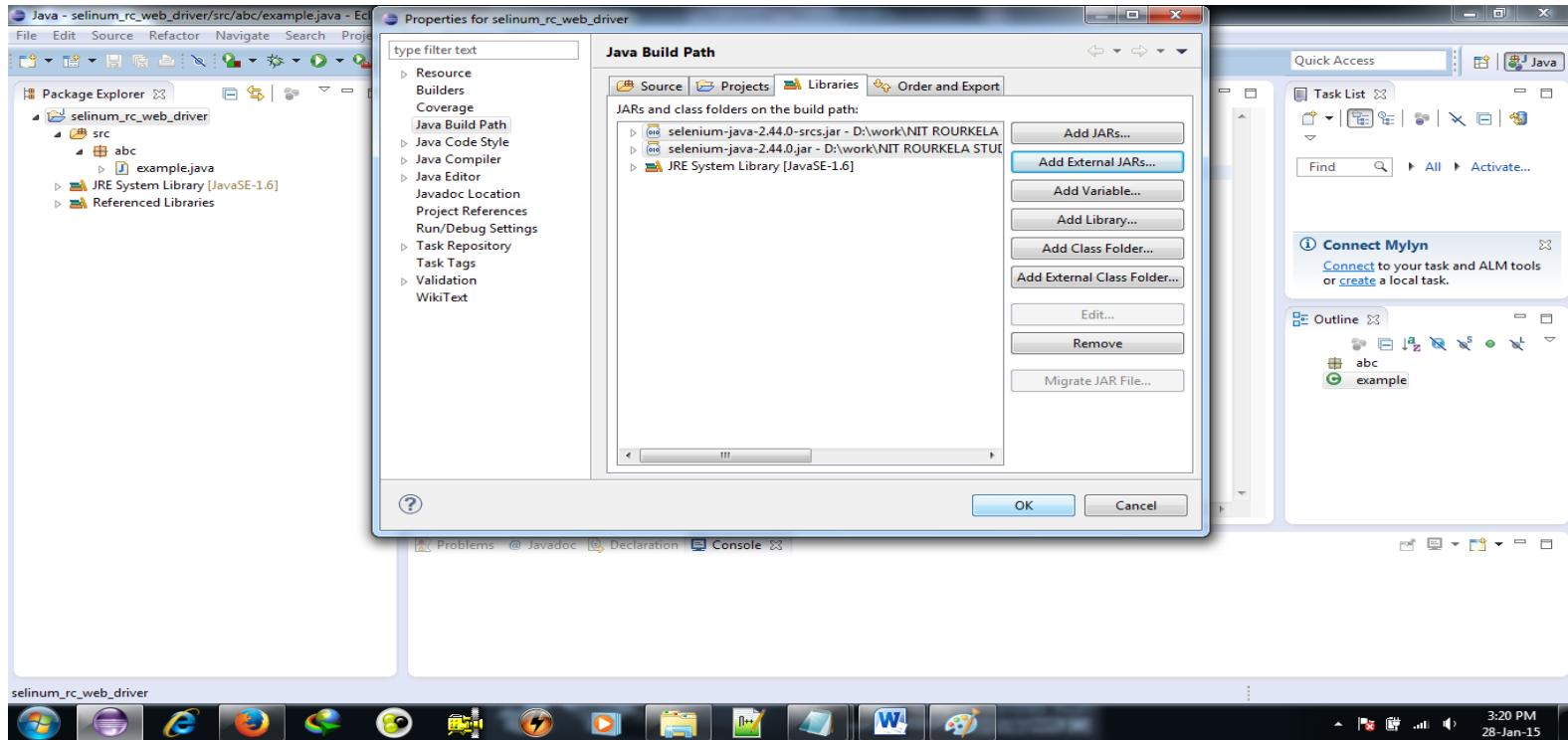
>Select all the associated jar files and click open.



# Implementation of Selenium Webdriver contd....



Then click on OK



# Implementation of Selenium Webdriver contd....



Now write the code for execution and run it.

The screenshot shows the Eclipse IDE interface with the following details:

- Title Bar:** Java - selenium\_rc\_web\_driver/src/abc/example.java - Eclipse
- Menu Bar:** File Edit Source Refactor Navigate Search Project Run Window Help
- Toolbar:** Standard Eclipse toolbar icons.
- Package Explorer:** Shows the project structure: selenium\_rc\_web\_driver > src > abc > example.java.
- Java Editor:** Displays the Java code for "example.java".

```
package abc;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.support.ui.ExpectedCondition;
import org.openqa.selenium.support.ui.WebDriverWait;

public class example {
    public static void main(String[] args) {
        // Create a new instance of the Firefox driver
        // Notice that the remainder of the code relies on the interface,
        // not the implementation.
        WebDriver driver = new FirefoxDriver();

        // And now use this to visit Google
        driver.get("http://www.google.com");
        // Alternatively the same thing can be done like this
        // driver.navigate().to("http://www.google.com");

        // Find the text input element by its name
        WebElement element = driver.findElement(By.name("q"));

        // Enter something to search for
        element.sendKeys("Cheese!");
    }
}
```
- Outline View:** Shows the class structure: abc > example > main(String[]): void.
- Task List:** A panel for managing tasks.
- Console:** A tabbed view for output and error messages.

# Implementation of Selenium Webdriver contd....

---



```
package org.openqa.selenium.example;  
import org.openqa.selenium.By;  
import org.openqa.selenium.WebDriver;  
import org.openqa.selenium.WebElement;  
import org.openqa.selenium.firefox.FirefoxDriver;  
import org.openqa.selenium.support.ui.ExpectedCondition;  
import org.openqa.selenium.support.ui.WebDriverWait;
```

# Implementation of Selenium Webdriver contd....

---



```
public class Selenium2Example{  
    public static void main(String[] args){  
        // Create a new instance of the Firefox driver  
        // Notice that the remainder of the code relies on the interface,  
        // not the implementation.  
        WebDriver driver=new FirefoxDriver();  
        // And now use this to visit Google  
        driver.get("http://www.google.com");  
        // Alternatively the same thing can be done like this  
        // driver.navigate().to("http://www.google.com");
```

# Implementation of Selenium Webdriver contd....

---



```
// Find the text input element by its name
WebElement element=driver.findElement(By.name("q"));
// Enter something to search for
element.sendKeys("Cheese!");
// Now submit the form. WebDriver will find the form for us
from the element
element.submit();
// Check the title of the page
System.out.println("Page title is: "+driver.getTitle());
// Google's search is rendered dynamically with JavaScript.
```

# Implementation of Selenium Webdriver contd....

---

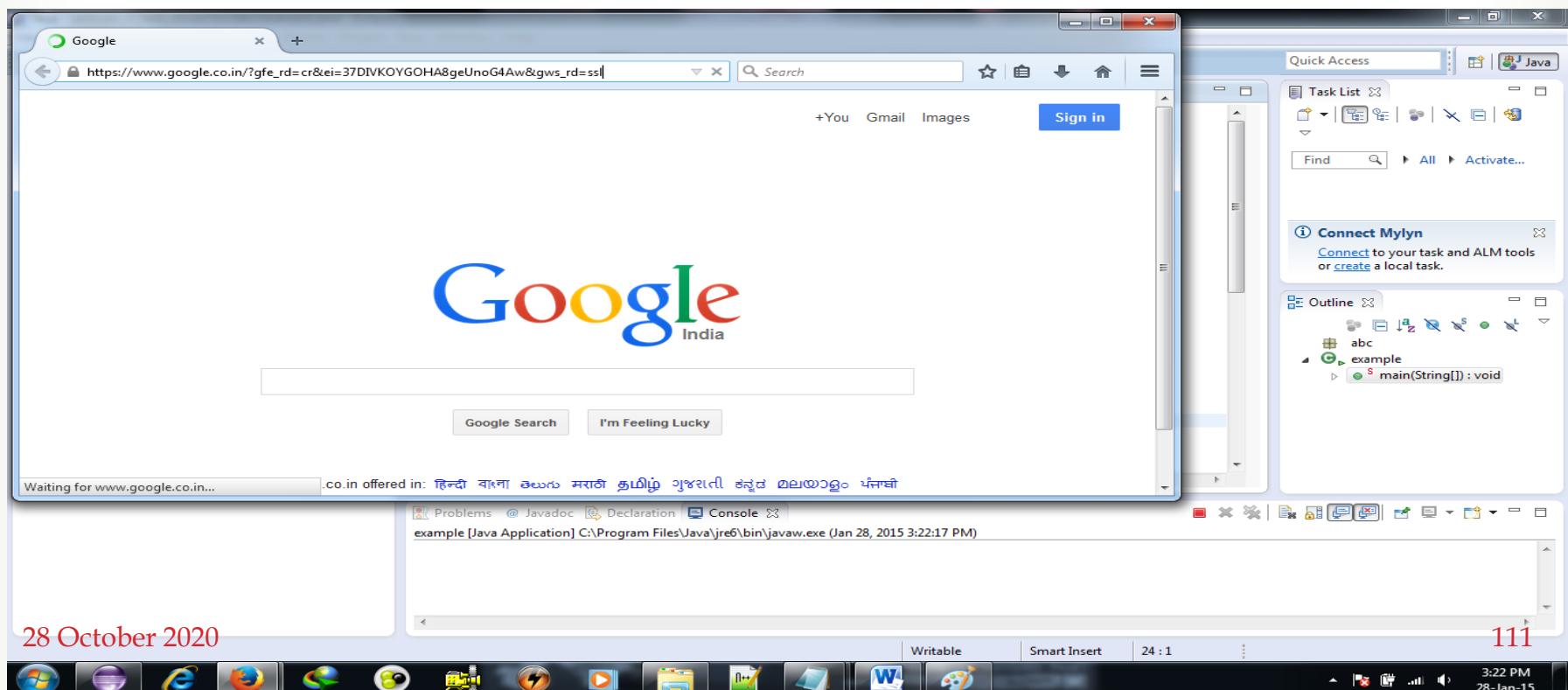


```
// Wait for the page to load, timeout after 10 seconds
(new WebDriverWait(driver,10)).until(new
ExpectedCondition<Boolean>(){
public Boolean apply(WebDriver d){
return d.getTitle().toLowerCase().startsWith("cheese!");
}
});
// Should see: "cheese! - Google Search"
System.out.println("Page title is: "+driver.getTitle());
//Close the browser
driver.quit();
}
}
```

# Implementation of Selenium Webdriver contd....



❖ Browser will be opened automatically after the execution of code which is written in eclipse :



# Thank You