Automation Testing using Selenium

Challenges of a Tester

Scenario From A Company: *Tester*

Tasks:-

- Write the test cases from scratch
- Execute 1,000 test cases
- Analyze pass/ fail status manually

Challenges:-

- 50-60/day = 10 days totally for only executing test cases
- Time to debug is non-deterministic
- Humans are error-prone

Automation Testing Advantages

Scenario From A Company: *Tester*

Tasks:-

- Write the test cases from scratch
- All test cases can be executed overnight
- Easier to analyze pass/ fail status report

Challenges:-

- Time for debugging errors

Automation Testing Advantages

Benefits/ Advantages

1. Saves time
2. Reduces the cost to company
3. Greater accuracy
4. Better quality reports
5. Less/ no errors
6. Repeatable

What is Selenium ?

Beating the tedious challenges of *manual testing* is the obvious reason behind using automated tools.

And, here's why Selenium is the best choice:

open source

Being **Open-Source**, Selenium is available for **free**.

Mac OS
SUPPORTED OPERATING SYSTEMS

Selenium works good with **any Operating System**.

SUPPORTED BROWSERS

Selenium lets you perform tests on **any Web Browser**.

PHP.NET
Perl Java
Ruby Python
C#

Selenium supports **multiple Programming Languages**.

Selenium vs. its Counterparts

Features	HP QTP	IBM RFT	TestComplete	Selenium
License	Required	Required	Required	Open Source
Cost	High	High	High	Free
Customer support	Yes	Yes	Yes	Yes; Open source community
Coding skills	Low	Low	High	Very High
Environment support	Only Windows	Only Windows	Windows only (7, Vista, Server 2008 or later OS)	Windows, Linux, Mac

Use of Selenium

"Selenium is an open-source tool that can automate almost any web browser."

So many test cases, so much work..... So much stress !!!!!!

Testing with Selenium has made life so relaxing !!

➤ Selenium can only be used to test web applications.

➤ Selenium is fast and easy to use even with large sets of data, and has a guaranteed accuracy.

➤ Selenium directly runs scripts for any web browser to automate the web application and test it.

Components of Selenium

As of April – 2018, the latest release of the tool is **Selenium Version 3.12.0**.

The Selenium suite comprised the following four components:

Selenium Suite

- Selenium IDE
- Selenium Grid
- Selenium RC
- Selenium WebDriver

Selenium RC, however, was merged with WebDriver and launched anew as Selenium WebDriver with better functionalities.

Setting up Selenium

The following three software are prerequisite to begin using Selenium.

I. Java → **Programming Language to write scripts**

II. Eclipse → **Environment to compile and run scripts**

III. Selenium → **Framework for testing web applications**

Setting up Selenium

Step 1: Installing Java

✓ Download and install the latest release of the Java Platform, Standard Edition Development Kit from the following link:- http://www.oracle.com/technetwork/java/javase/downloads/index.html

Overview | **Downloads** | Documentation | Community | Technologies | Training

Java SE Development Kit 10 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- Java Developer Newsletter: From your Oracle account, select **Subscriptions**, expand **Technology**, and subscribe to **Java**.
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

JDK 10.0.1 checksum

Java SE Development Kit 10.0.1

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

○ Accept License Agreement ⦿ Decline License Agreement

Setting up Selenium

✓ After Java is installed, we'll need to set **Environment Variables** to use JDK with Eclipse.

✓ Right click on My PC →Go to Properties →Go to Advanced System Settings →**System Properties** window pops up →Click on Environment Variables under the **Advanced** tab.

✓ **Environment Variables** window pops up →Click on New under **User variables**.

✓ Under the **Edit User Variable** window that pops up, set the **Variable name** as *Path and* **Variable value** as the location of the *bin* folder inside the *JDK* folder on your system. Similarly, create another variable with the name *JAVA_HOME* and set its values as the location of the *JDK* folder.
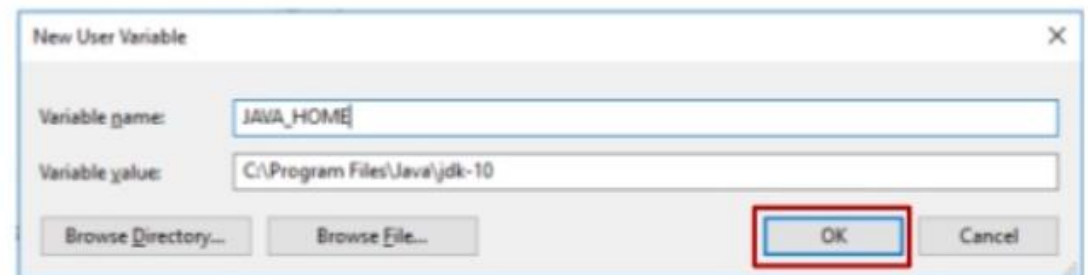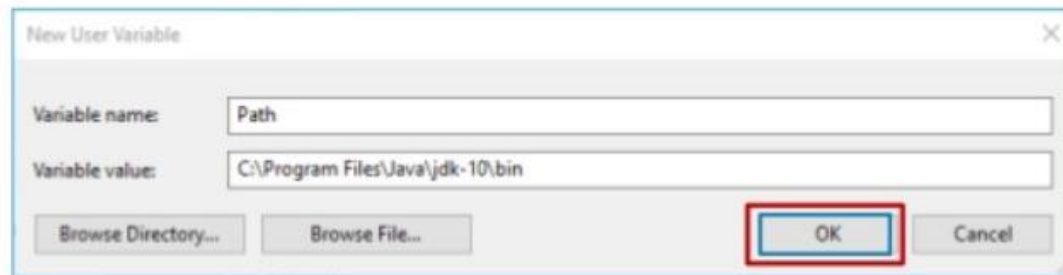
Setting up Selenium

Step 2: Installing Eclipse

✓ Download and install the latest release for Eclipse from the following link:

https://www.eclipse.org/downloads/

⬇ Download

Download from: China - University of Science and Technology of China (http)

File: eclipse-inst-win64.exe SHA-512

>> Select Another Mirror

Setting up Selenium

Setting up Selenium

Download the JAR files (selenium-server-3.9.1.zip & selenium-server-standalone-3.9.1.jar for version 3.9) from the version that you have selected.

Index of /3.9/

	Name	Last modified	Size	ETag
	Parent Directory		-	
	selenium-html-runner-3.9.1.jar	2018-02-07 22:43:43	14.23MB	bddf0e5bedcd9afc2f3829225fa5ef9b
	IEDriverServer_Win32_3.9.0.zip	2018-02-05 17:44:30	0.94MB	c7d7743b24cb897c8565839cec22ca83
	selenium-dotnet-3.9.0.zip	2018-02-05 17:44:32	4.47MB	997e2db93d50be64d58ba374fd1b1819
	selenium-dotnet-3.9.1.zip	2018-02-09 20:33:46	4.47MB	b362b2d826e0a3cf2eb14aefc81d787c
	selenium-dotnet-strongnamed-3.9.0.zip	2018-02-05 17:44:32	4.48MB	debcfeaa4149cdb4d92f580844acd158
	selenium-dotnet-strongnamed-3.9.1.zip	2018-02-09 20:33:48	4.48MB	61180d6c06a361b858a2279eea09c22a
	selenium-html-runner-3.9.0.jar	2018-02-05 14:57:45	14.23MB	74923c40144ce876b60412018acd1054
	IEDriverServer_x64_3.9.0.zip	2018-02-05 17:44:31	1.08MB	5cff5e4d62b13876c0b2cd9b7bd4a2b3
	selenium-java-3.9.0.zip	2018-02-05 14:57:34	8.43MB	7e9a0002b8e28074f52bcfe7a239f2ca
	selenium-java-3.9.1.zip	2018-02-07 22:43:32	8.43MB	1fcd99a0df0a537002d99e28db6cf596
	selenium-server-3.9.0.zip	2018-02-05 14:57:28	21.05MB	d6b1ce14a0369ed2f5974757bc7f656b
	selenium-server-3.9.1.zip	2018-02-07 22:43:25	21.05MB	0825e089662edcb27ec5ee30ef05d152
	selenium-server-standalone-3.9.0.jar	2018-02-05 14:57:12	22.34MB	306a475b6f1d540969416cdf11cd7361
	selenium-server-standalone-3.9.1.jar	2018-02-07 22:43:10	22.34MB	eee40b2683858fd7091bf8b5481f306f

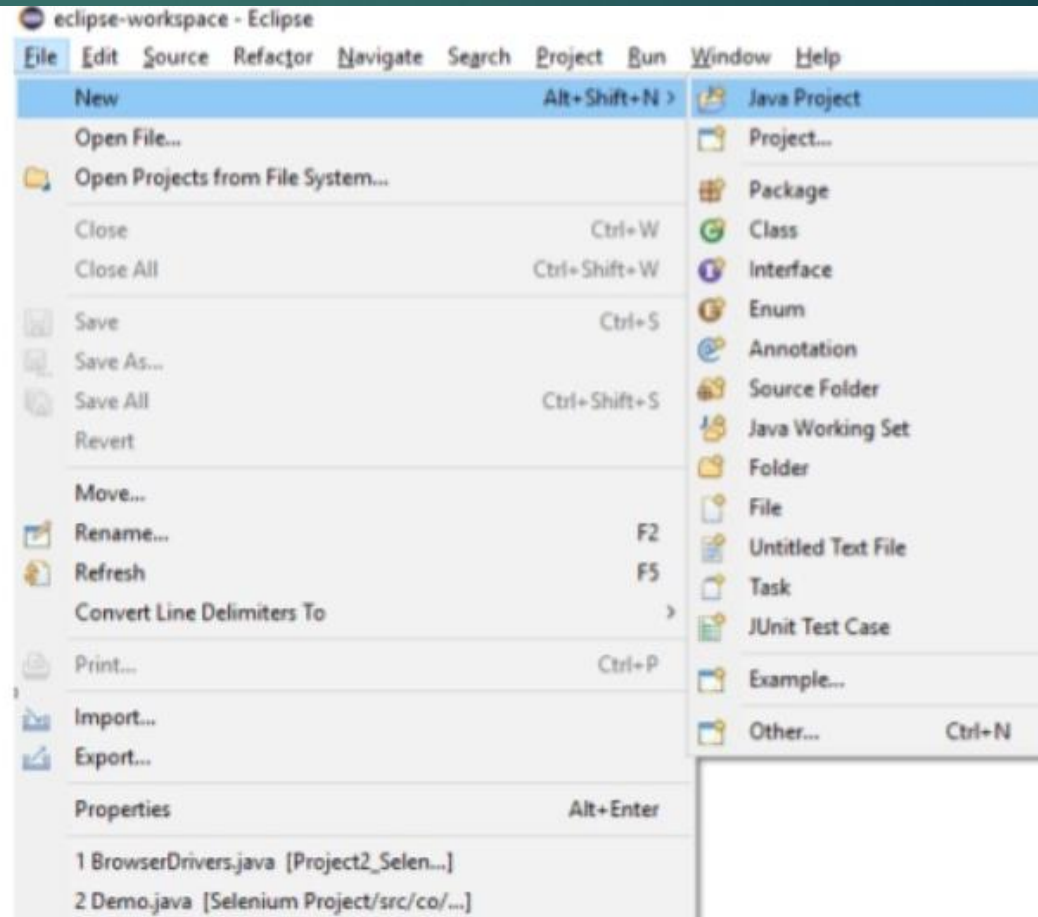# Setting up Selenium

Step 4: Configuring Eclipse for Selenium

✓ Open Eclipse and set a path for your workplace directory in the Eclipse Launcher window and click Launch.
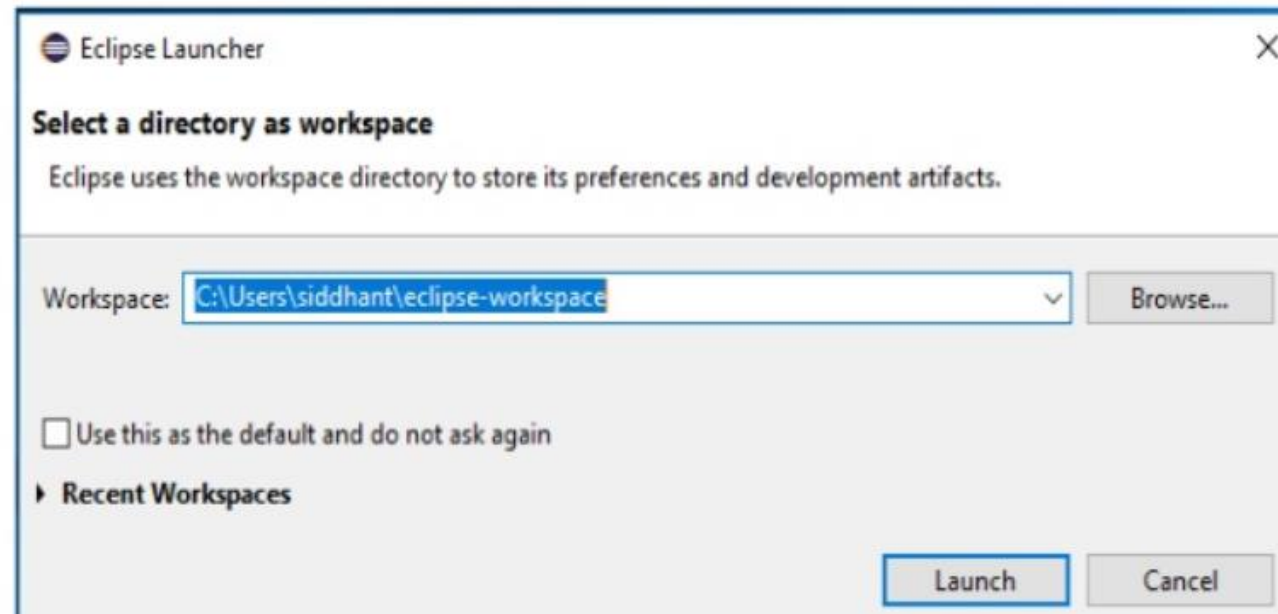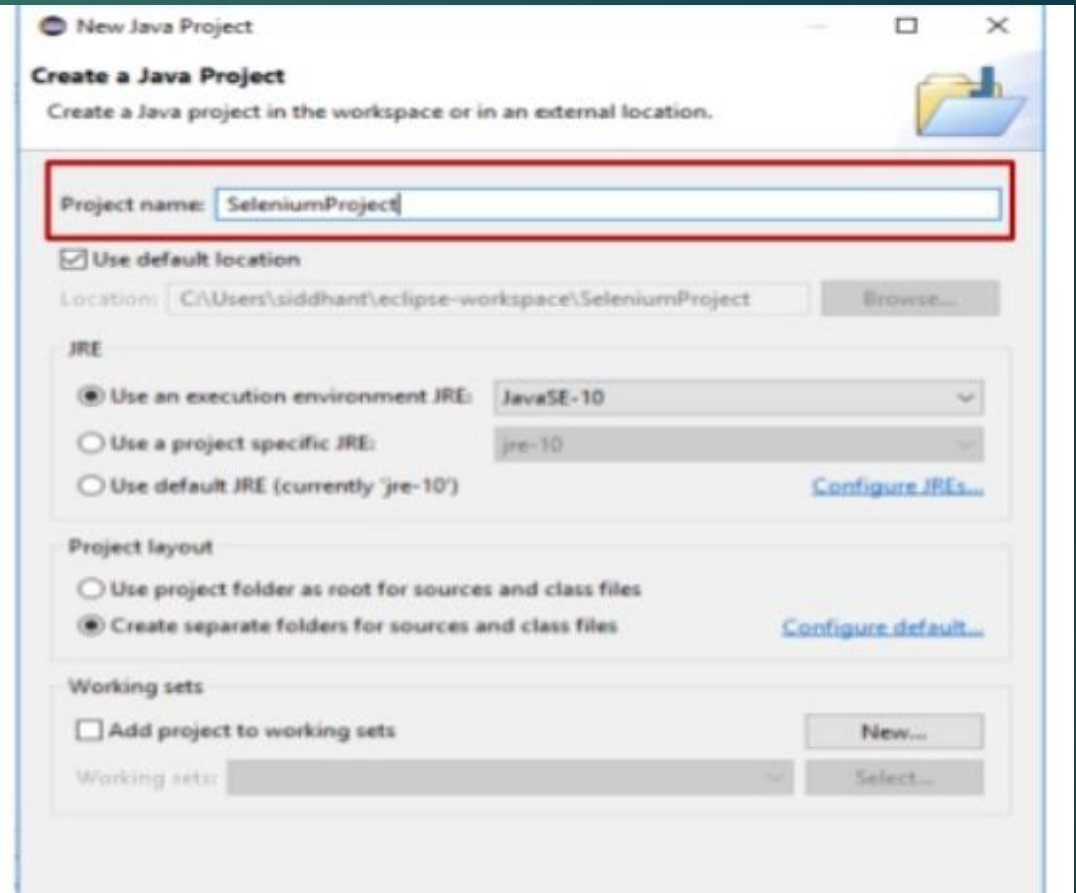
Setting up Selenium

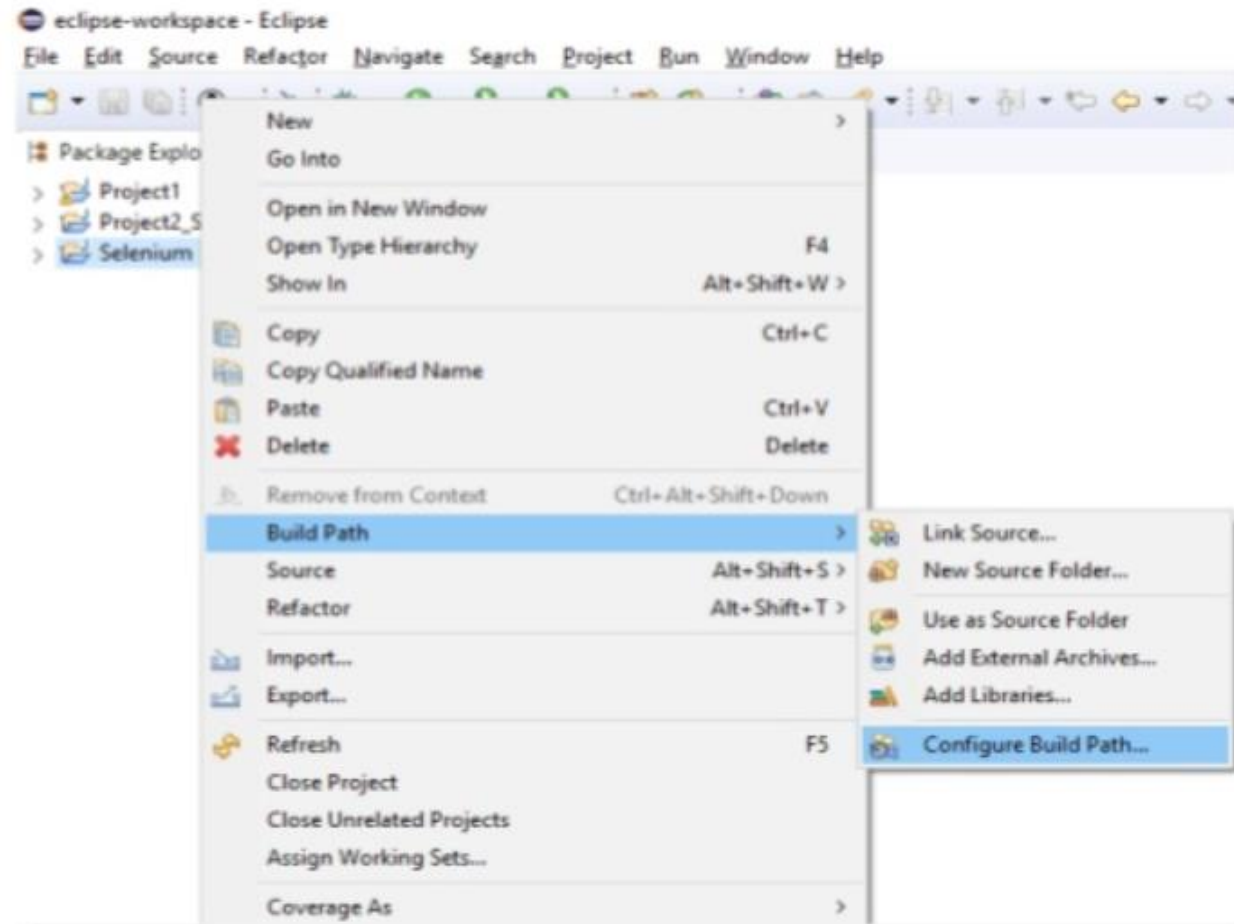✓ After Eclipse is launched, go to

File →New →Java Project.

Setting up Selenium

✓ Enter Project Name →Selenium Project.

✓ Click Finish.

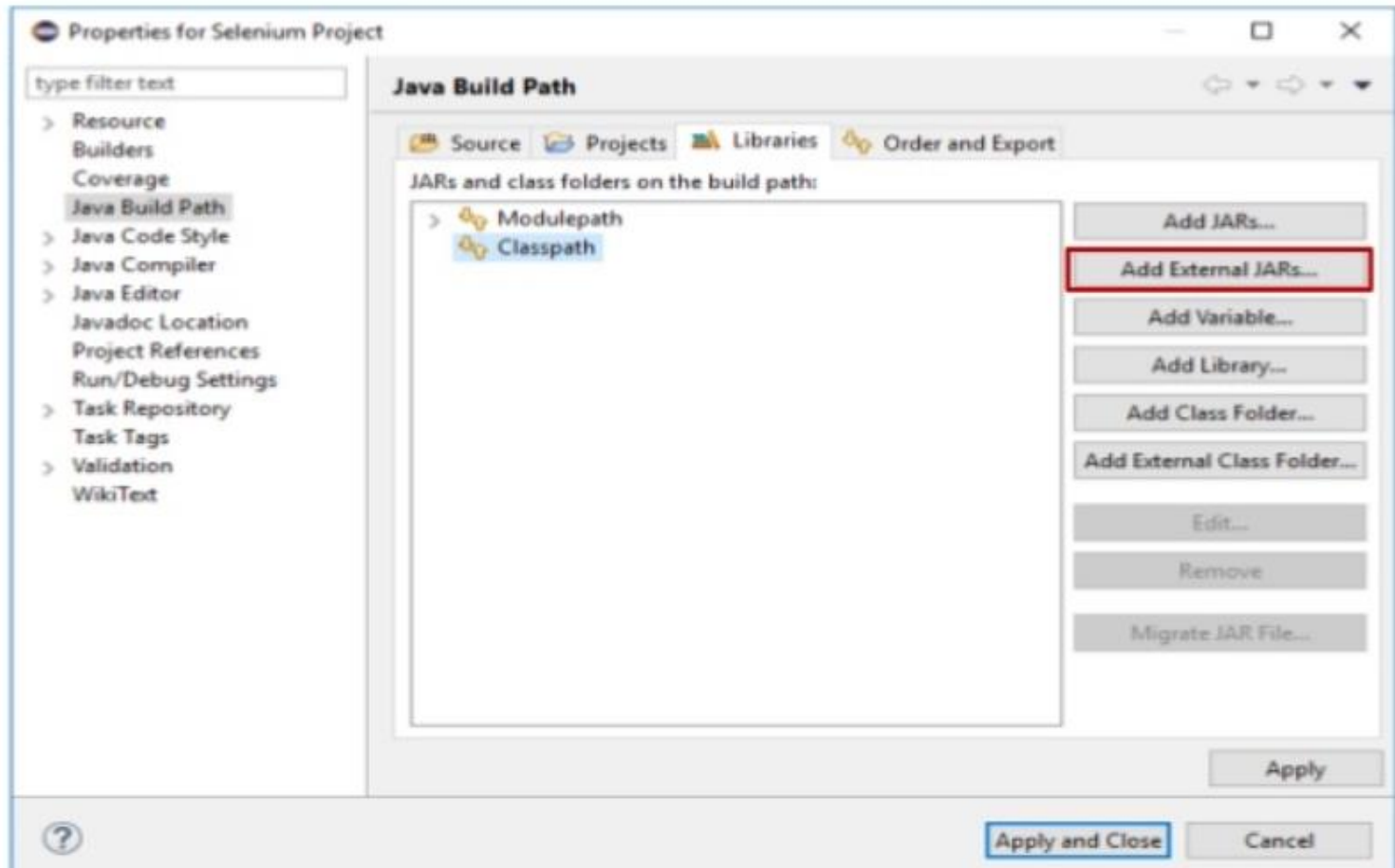# Setting up Selenium

Under the Package Explorer tab, right click on the name of your project (Selenium Project), go to
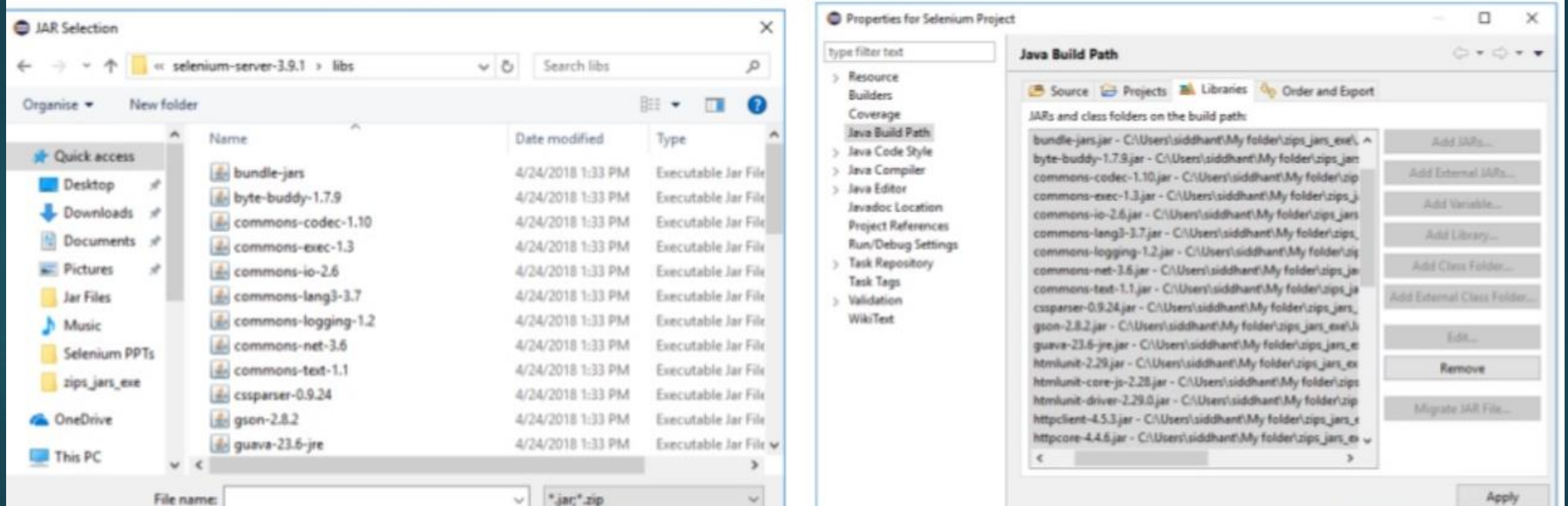
Build Path →Configure Build Path.

Setting up Selenium

Setting up Selenium

THANK YOU