



American International University-Bangladesh
Department of Computer Science
Summer 2020-2021

Assignment on Selenium

Subject: Software Quality and Testing
Section: C

Prepared by:

Name	ID
Roy, Showmik	17-35832-3
Uddin, MD.Azim	18-37793-2
Sad, Mahiul Alam	18-37864-2
Dola, Shionty Ghosh	18-38013-2

1. Put all screenshots of your computer during installing Selenium.

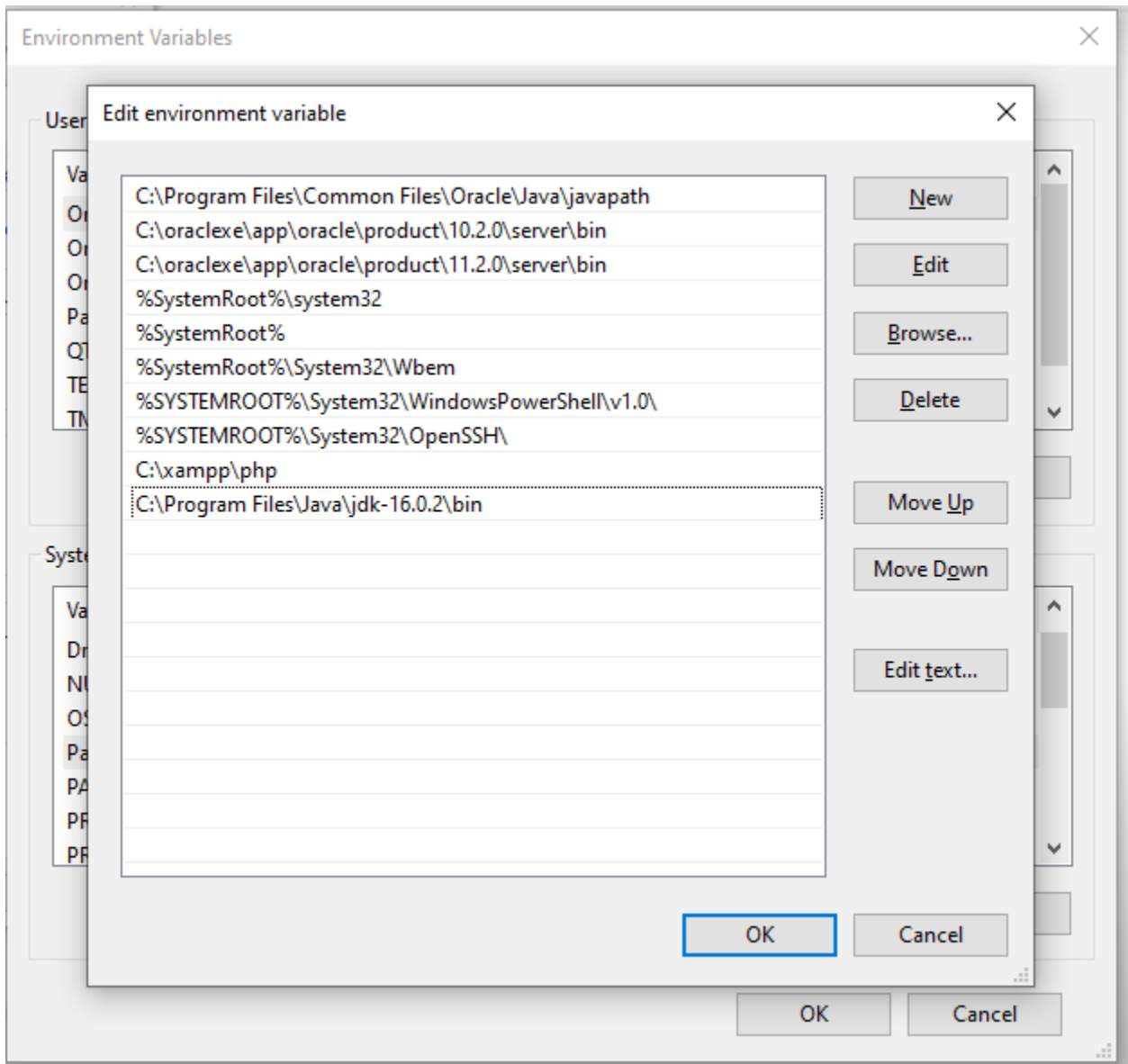
Answer:

Step by step all the screen shots are here for installing Selenium WebDriver in the computer.

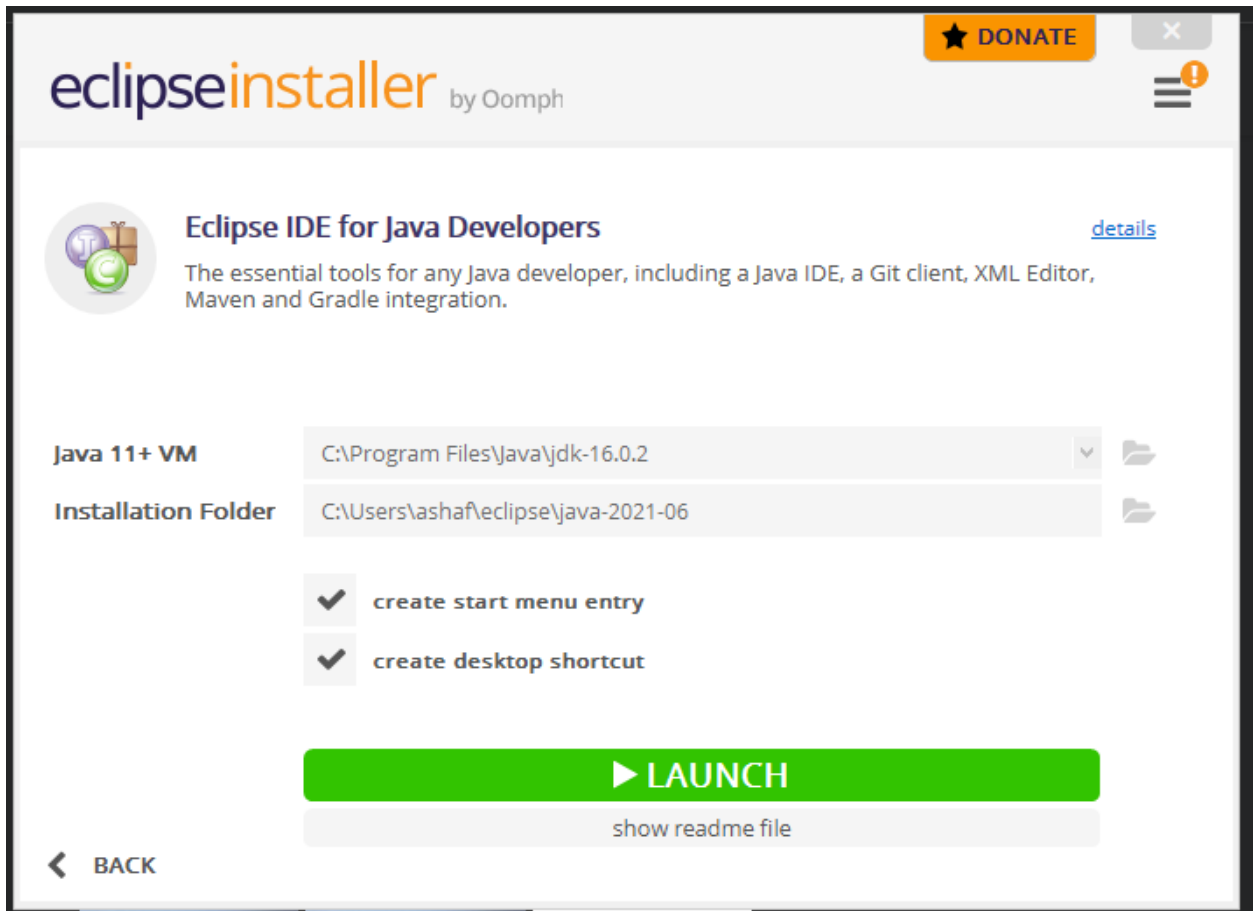
1. Java JDK installation for environment set up in PC.



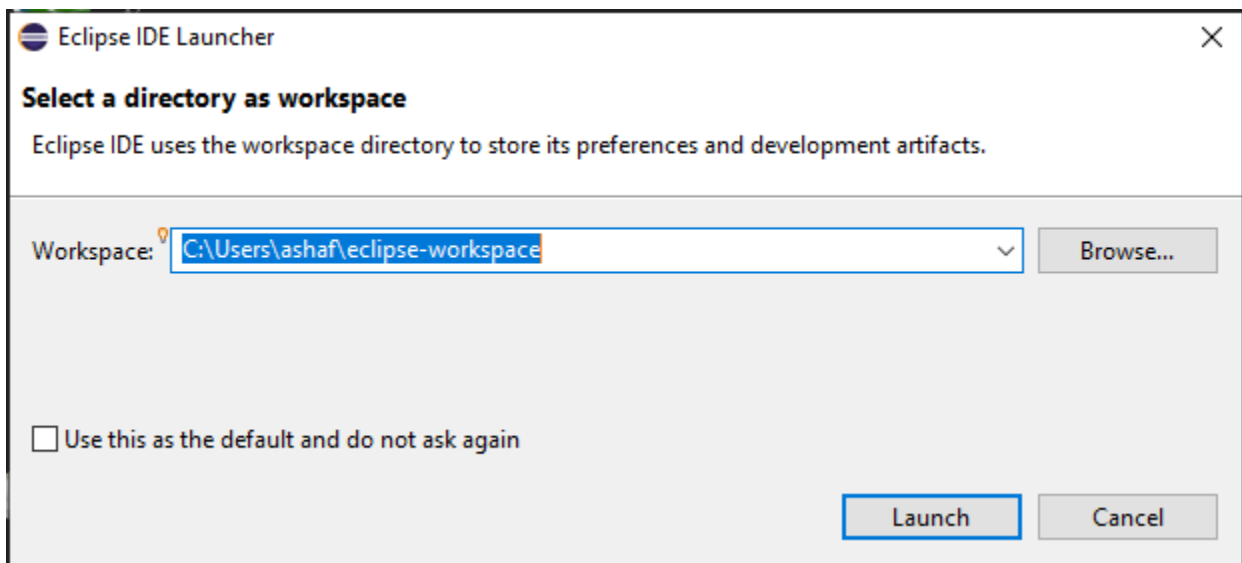
1. System environment variable setup for java



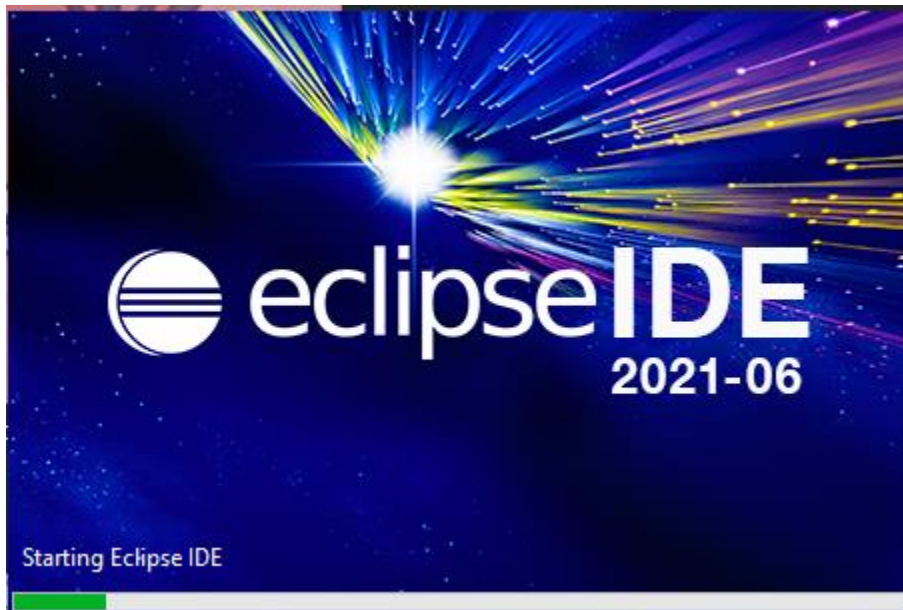
3.Eclipse IDE installation



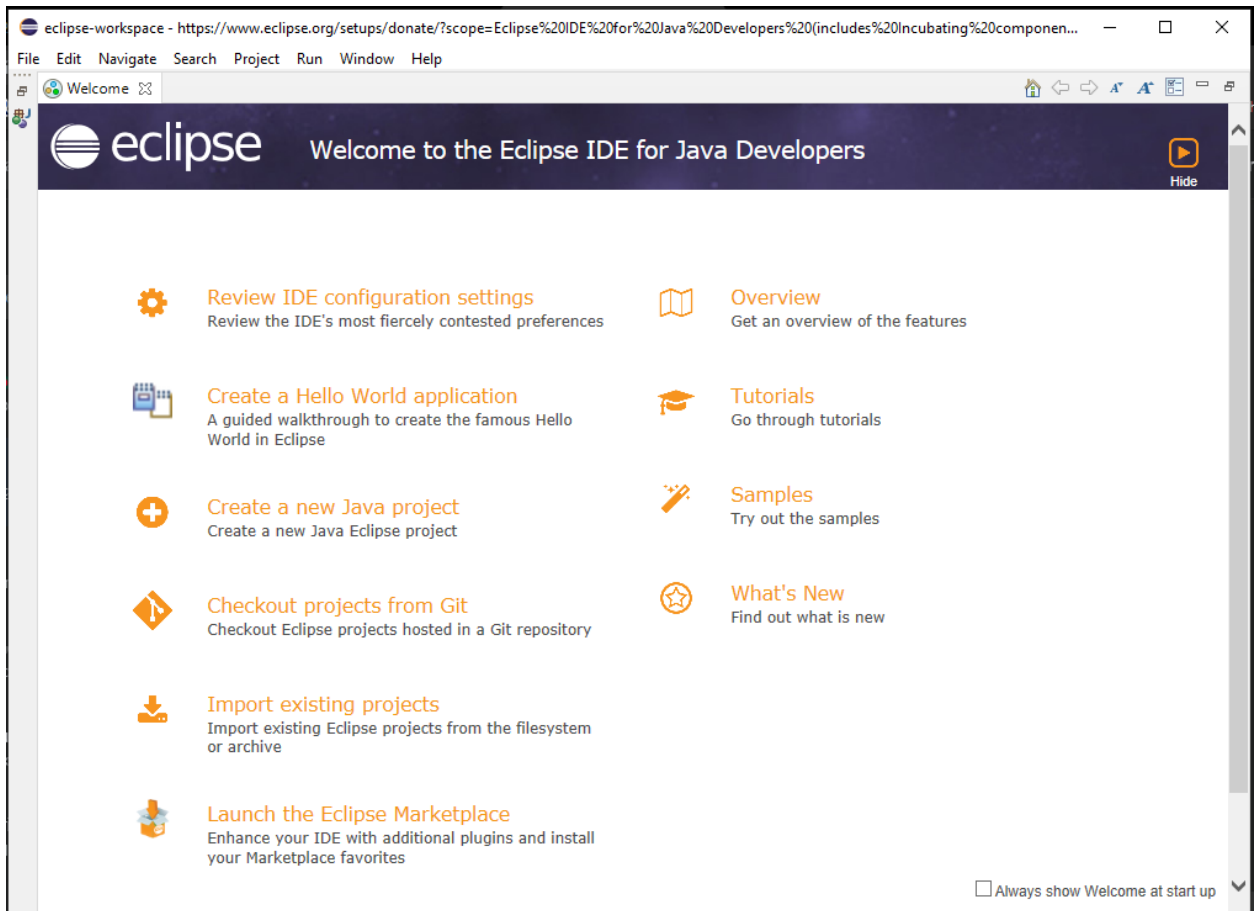
4.Selecting Directory as Workspace



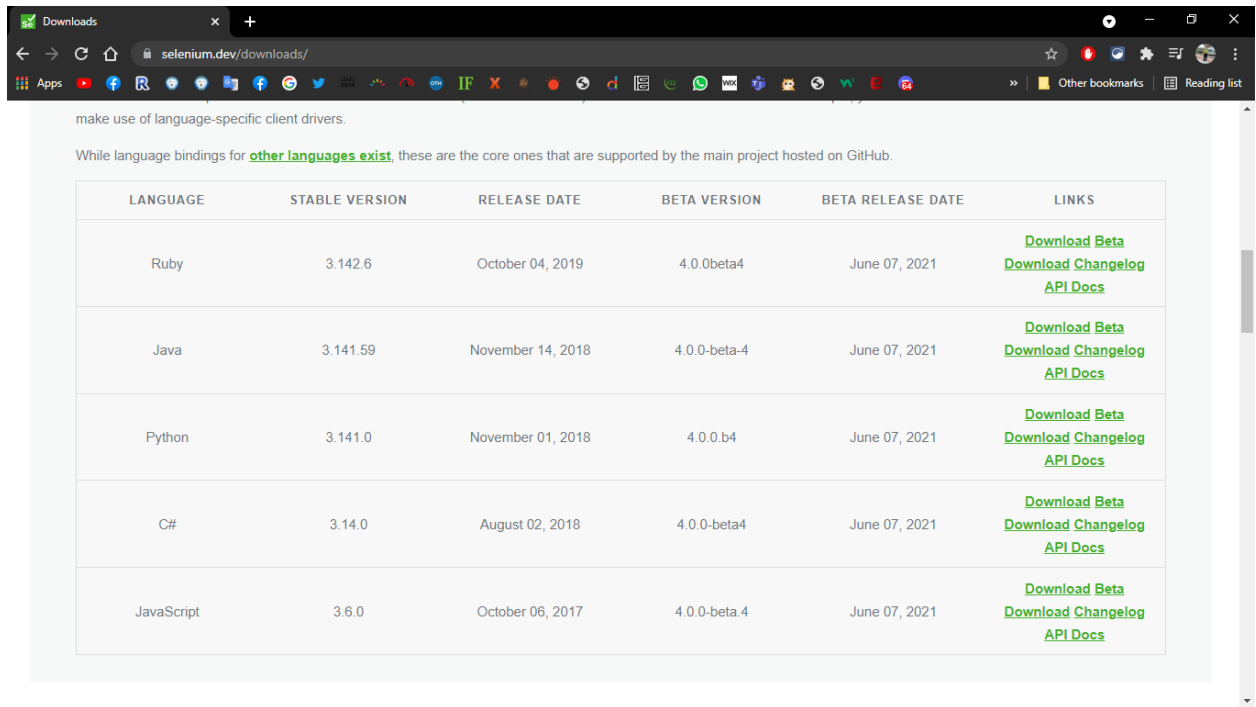
5.Starting Eclipse IDE



6.EclipseIDE Welcome Page



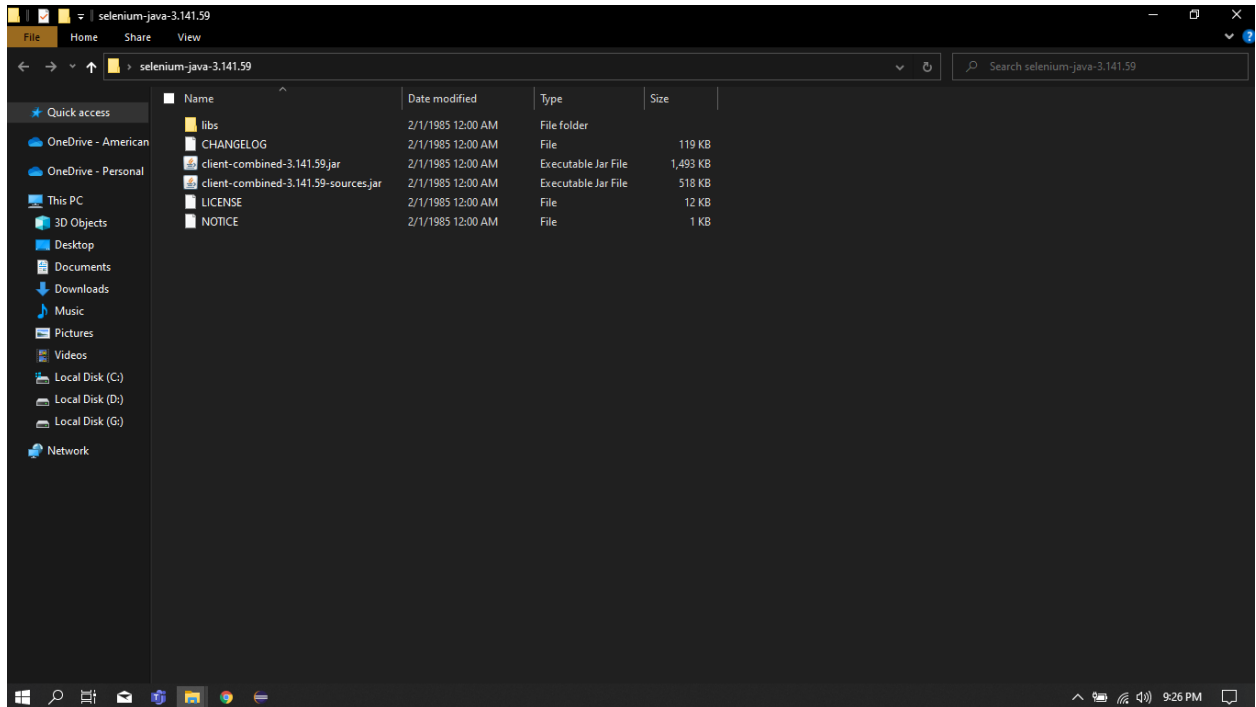
7. Downloading Selenium



The screenshot shows a web browser window at the URL `selenium.dev/downloads/`. The page content includes a table of supported languages and their versions. Above the table, there is text stating: "make use of language-specific client drivers. While language bindings for [other languages exist](#), these are the core ones that are supported by the main project hosted on GitHub."

LANGUAGE	STABLE VERSION	RELEASE DATE	BETA VERSION	BETA RELEASE DATE	LINKS
Ruby	3.142.6	October 04, 2019	4.0.0beta4	June 07, 2021	Download Beta Download Changelog API Docs
Java	3.141.59	November 14, 2018	4.0.0-beta-4	June 07, 2021	Download Beta Download Changelog API Docs
Python	3.141.0	November 01, 2018	4.0.0.b4	June 07, 2021	Download Beta Download Changelog API Docs
C#	3.14.0	August 02, 2018	4.0.0-beta4	June 07, 2021	Download Beta Download Changelog API Docs
JavaScript	3.6.0	October 06, 2017	4.0.0-beta.4	June 07, 2021	Download Beta Download Changelog API Docs

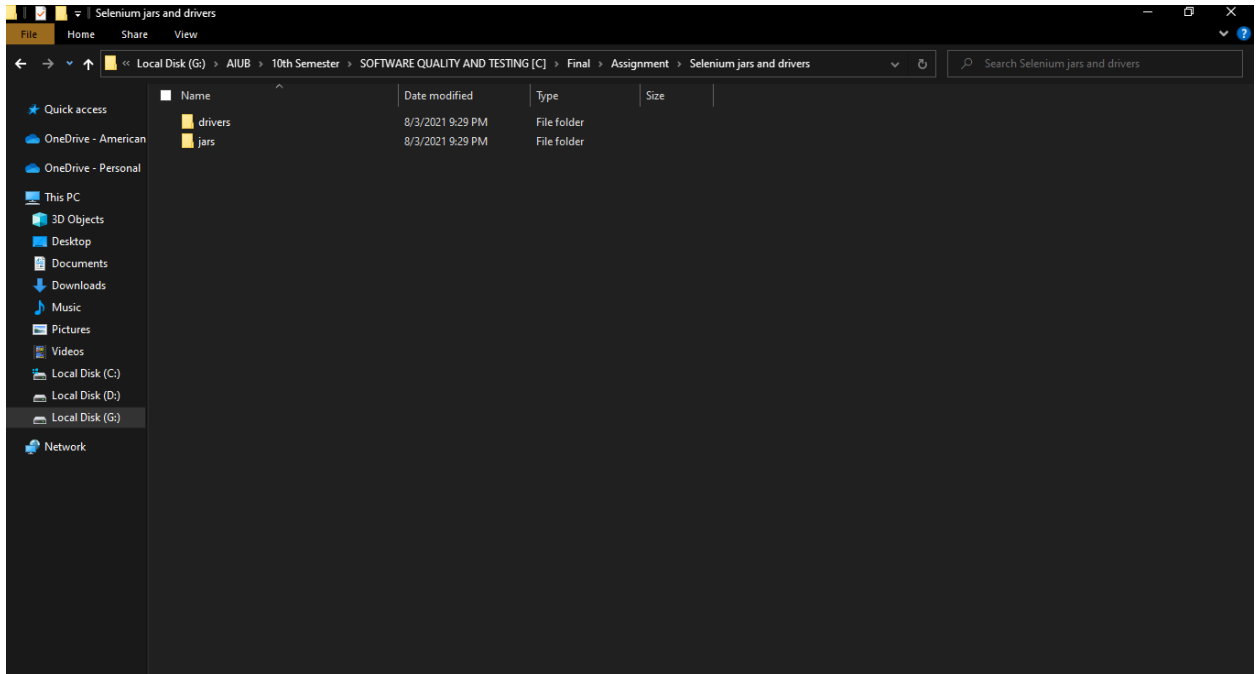
8. Selenium JAVA Files



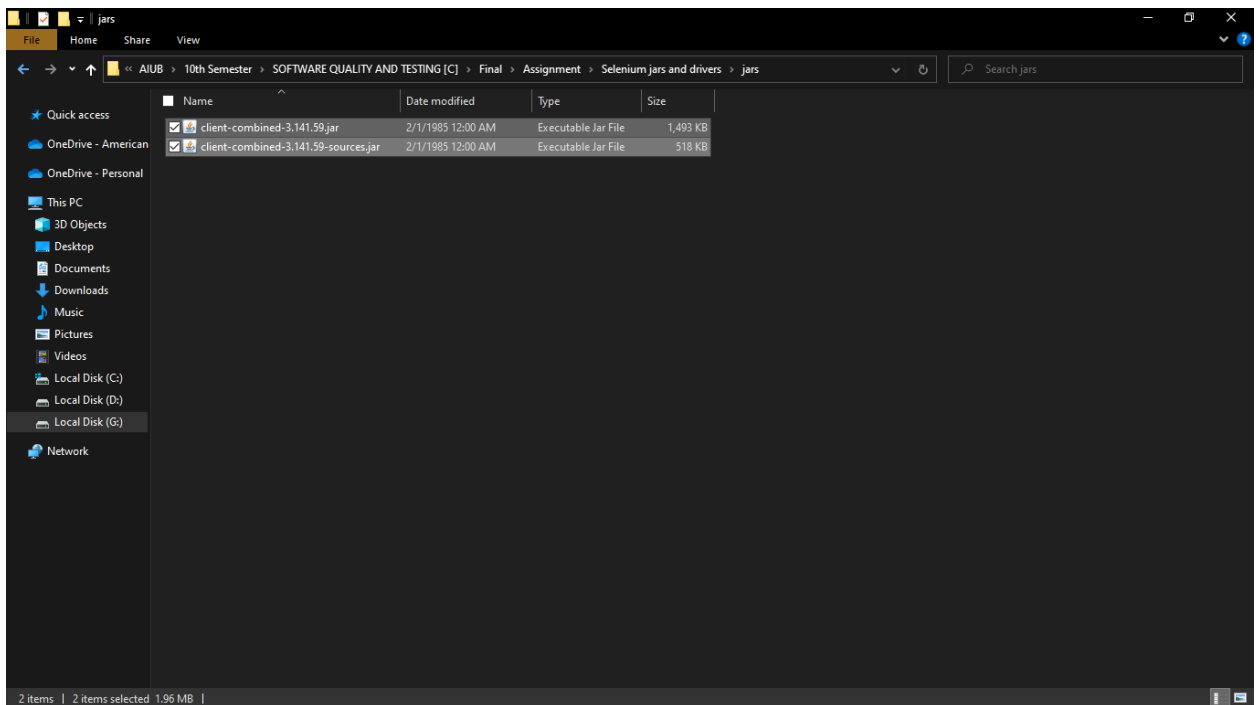
The screenshot shows a Windows File Explorer window with the address bar set to `selenium-java-3.141.59`. The left sidebar shows the 'This PC' view. The main pane displays a list of files and folders:

Name	Date modified	Type	Size
libs	2/1/1985 12:00 AM	File folder	
CHANGELOG	2/1/1985 12:00 AM	File	119 KB
client-combined-3.141.59.jar	2/1/1985 12:00 AM	Executable Jar File	1,493 KB
client-combined-3.141.59-sources.jar	2/1/1985 12:00 AM	Executable Jar File	518 KB
LICENSE	2/1/1985 12:00 AM	File	12 KB
NOTICE	2/1/1985 12:00 AM	File	1 KB

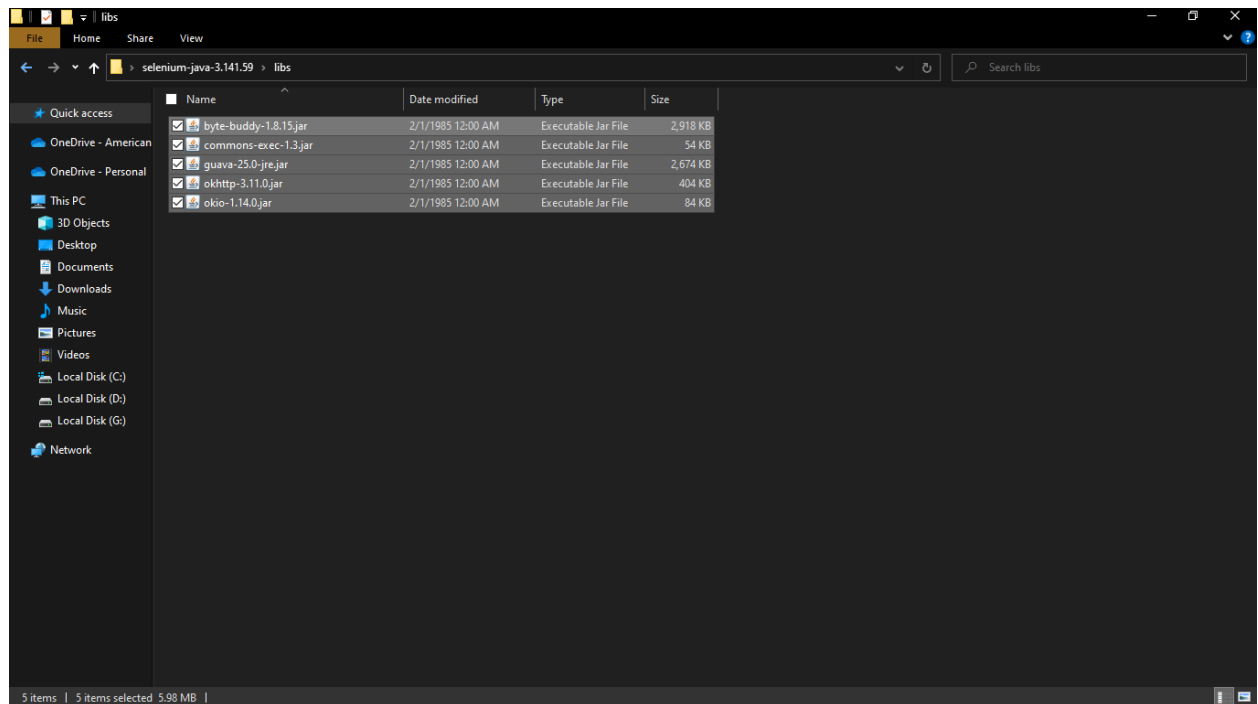
9.creating selenium jars and driver's folder



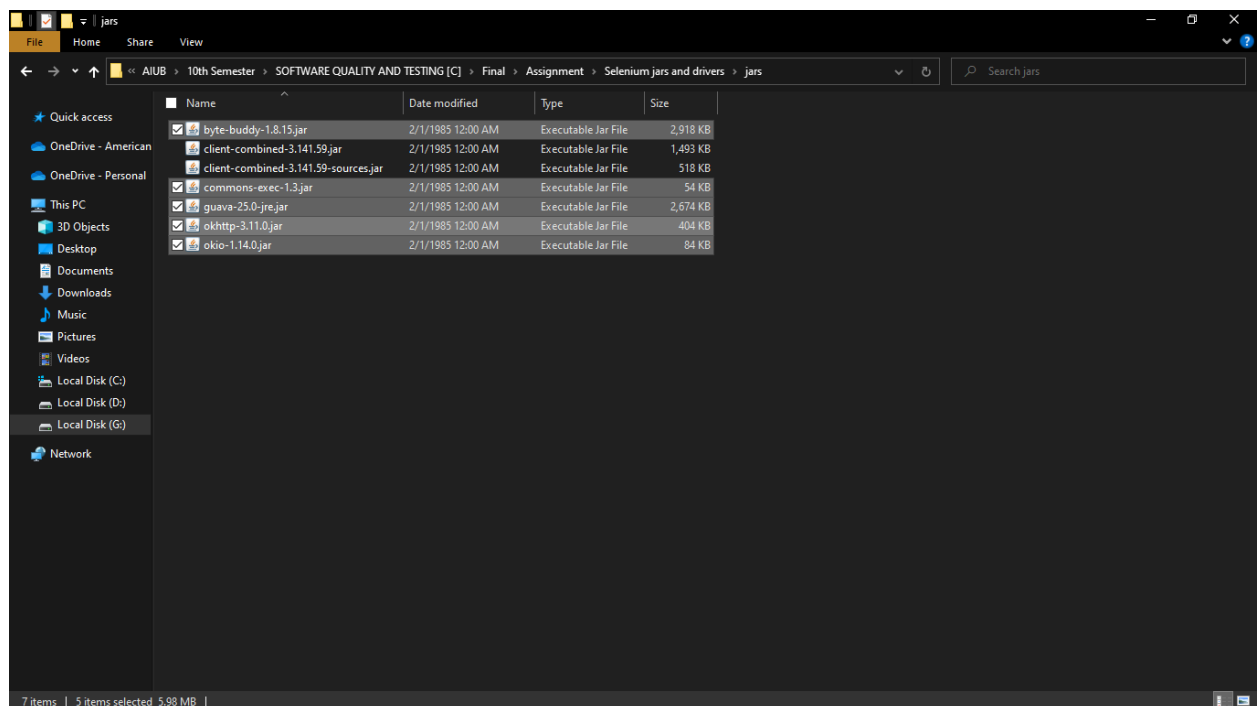
10.Placing jar files from downloaded selenium to jars folder



11. Copying libs jar files








12. Pasting jars files into jars folder



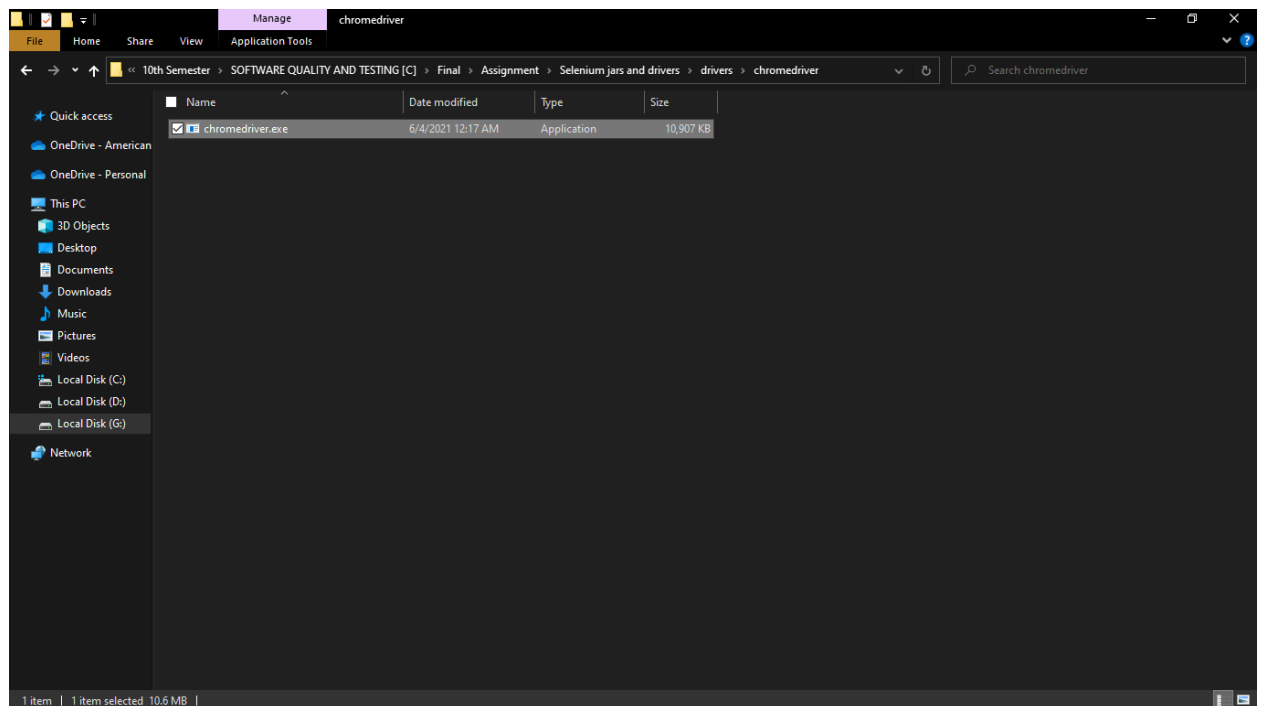
13. Downloading Chrome Driver for selenium



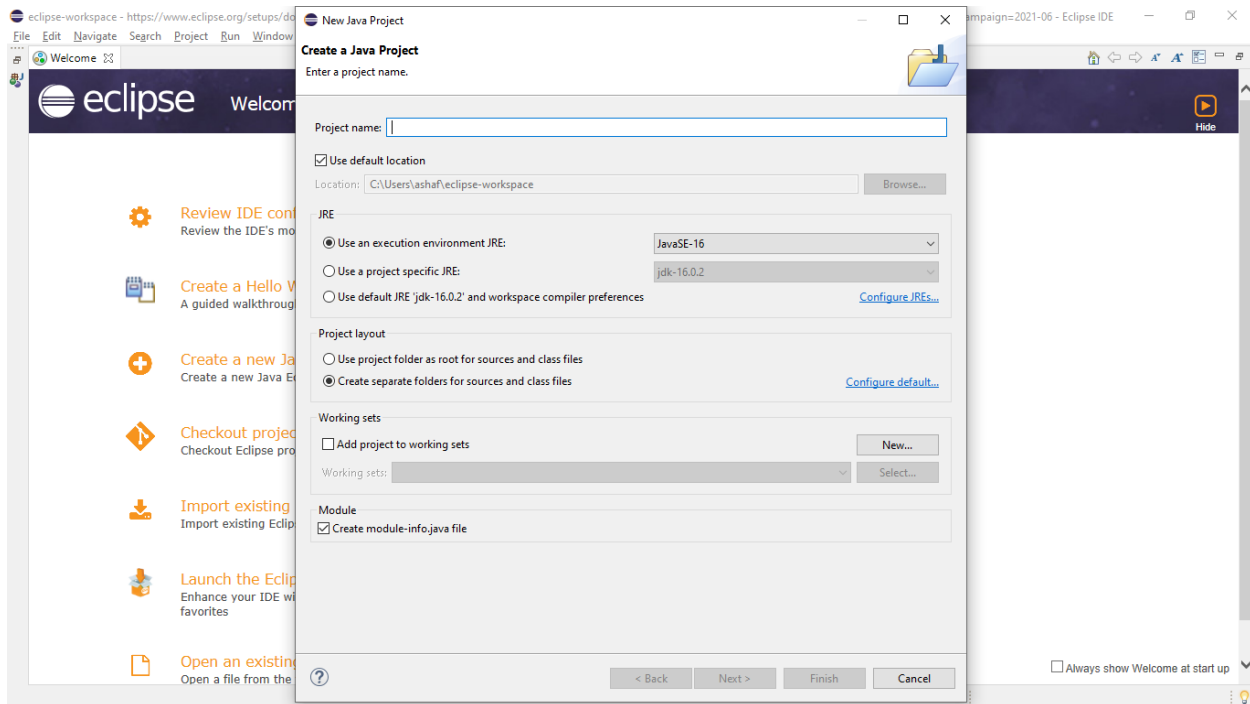
Index of /92.0.4515.43/

	Name	Last modified	Size	ETag
	Parent Directory		-	
	chromedriver_linux64.zip	2021-06-11 09:57:52	5.74MB	b29501f84c0a3104958df2d950417450
	chromedriver_mac64.zip	2021-06-11 09:57:55	7.76MB	35c25e2c5a45310850c35e8288388dc6
	chromedriver_mac64_m1.zip	2021-06-11 09:57:58	7.10MB	0e20a81c41fb64b3d71791f764993ab7
	chromedriver_win32.zip	2021-06-11 09:58:00	5.66MB	400a977e0ed14e4340155ed330f72f5b
	notes.txt	2021-06-11 09:58:06	0.00MB	6d98c0a6a6f45a38376d5fa70213a08c

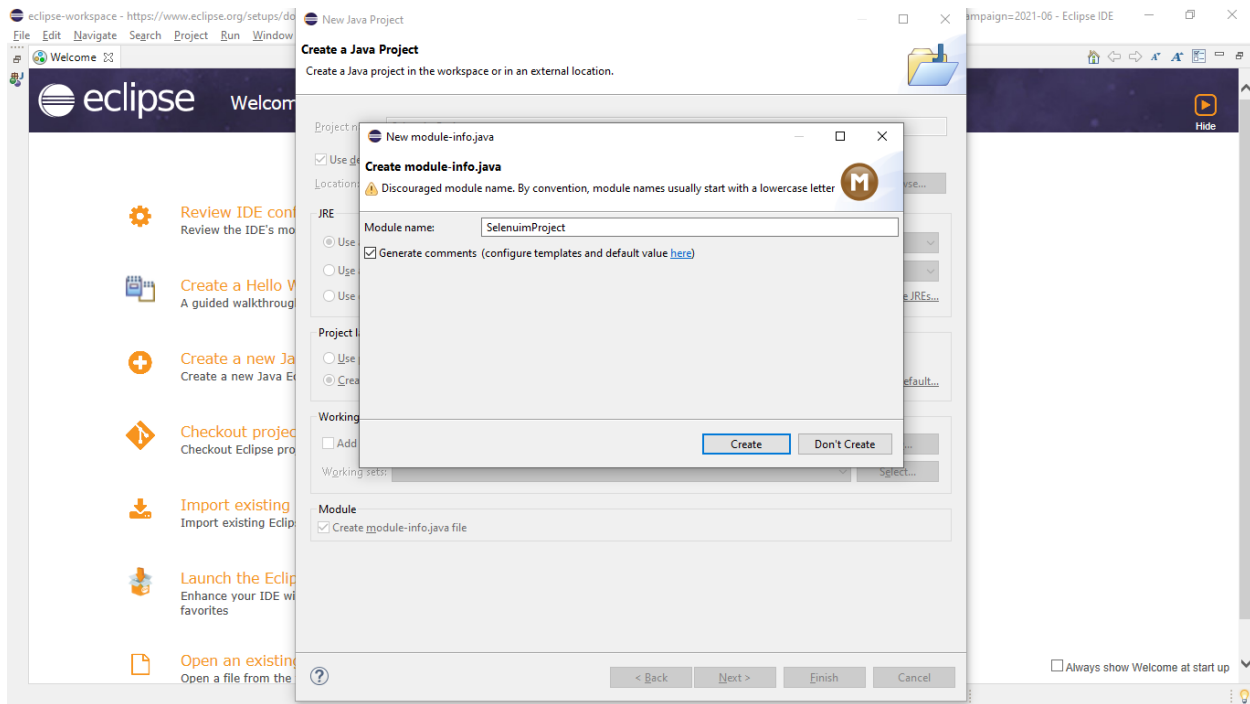
14. Pesting chrome driver for selenium



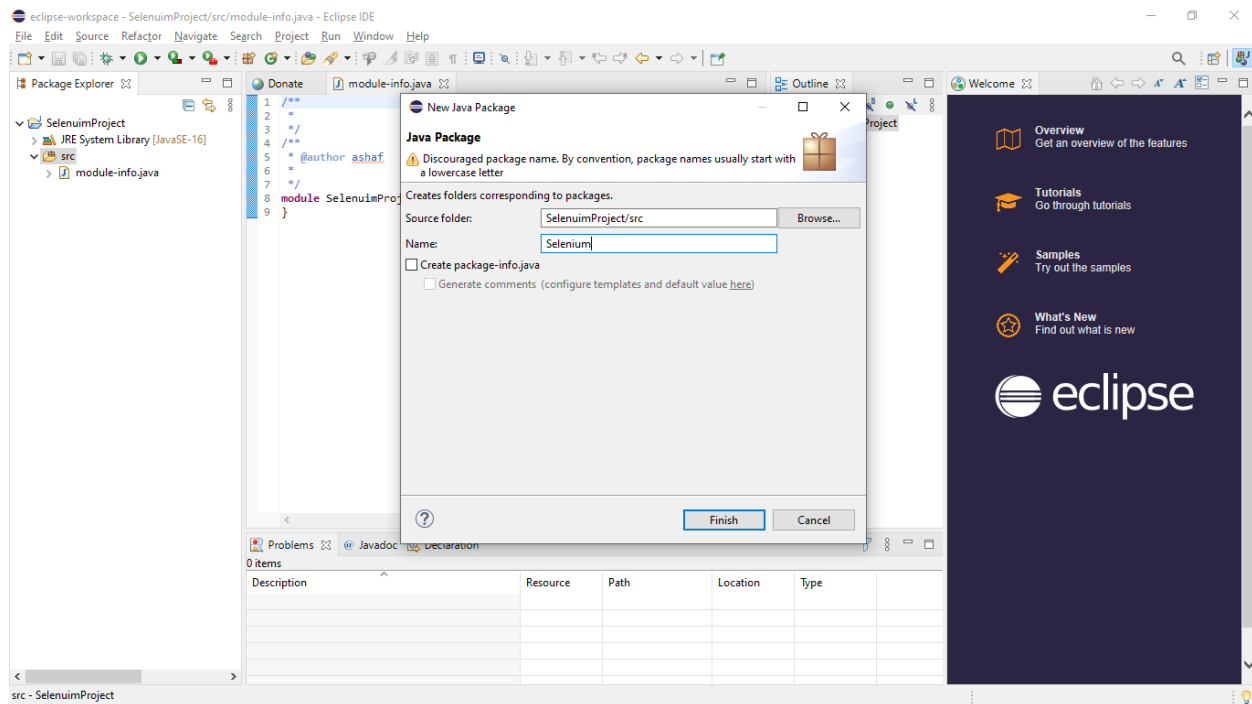
15.Creating New Project



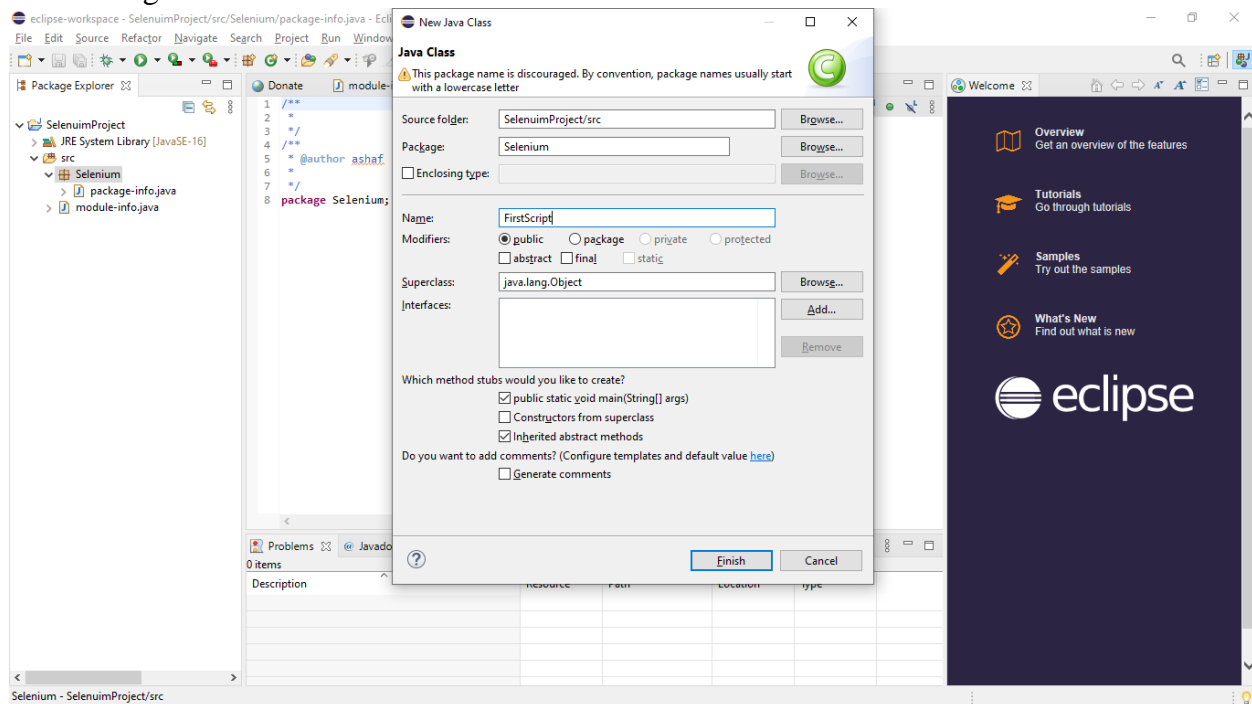
16. Creating Module



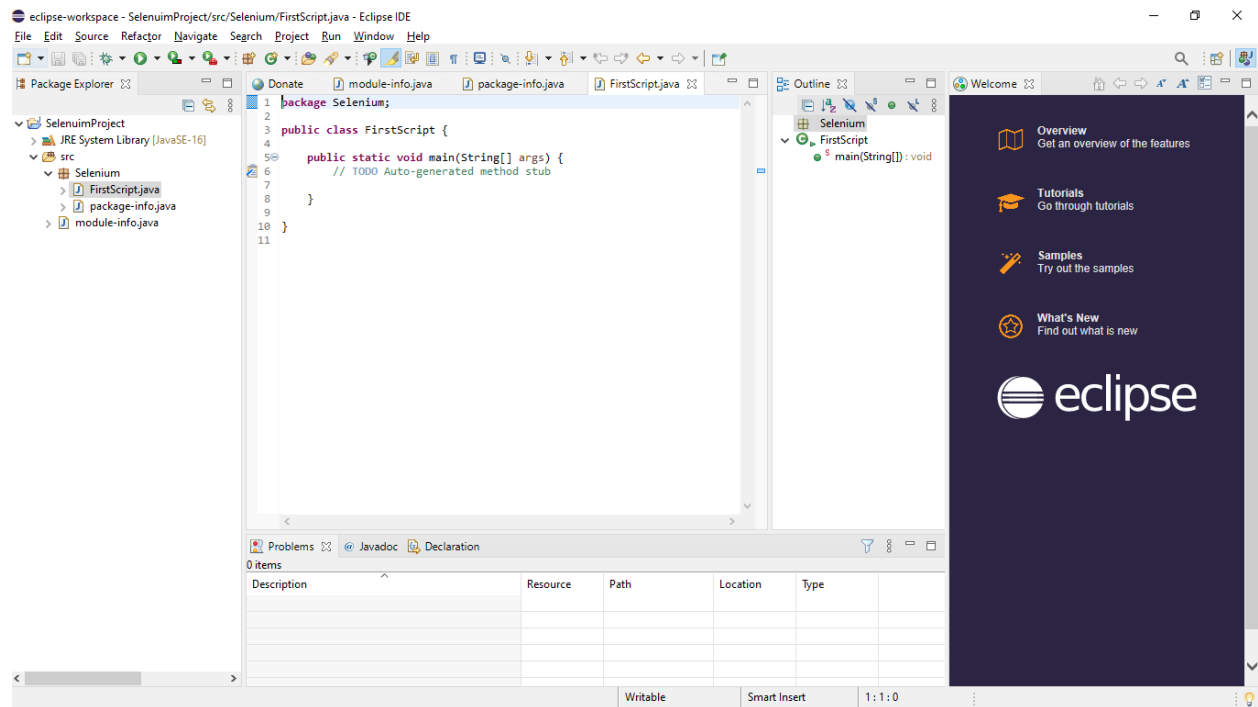
17. Creating Selenium Package



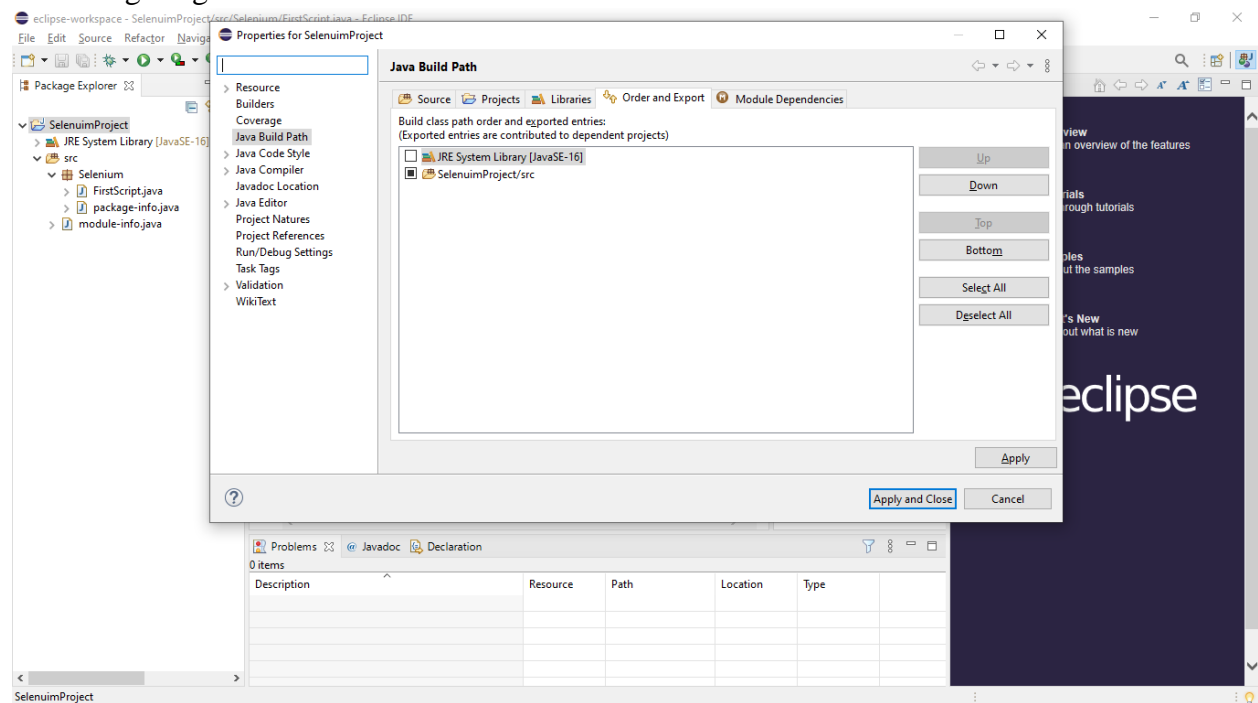
18. Creating a Class



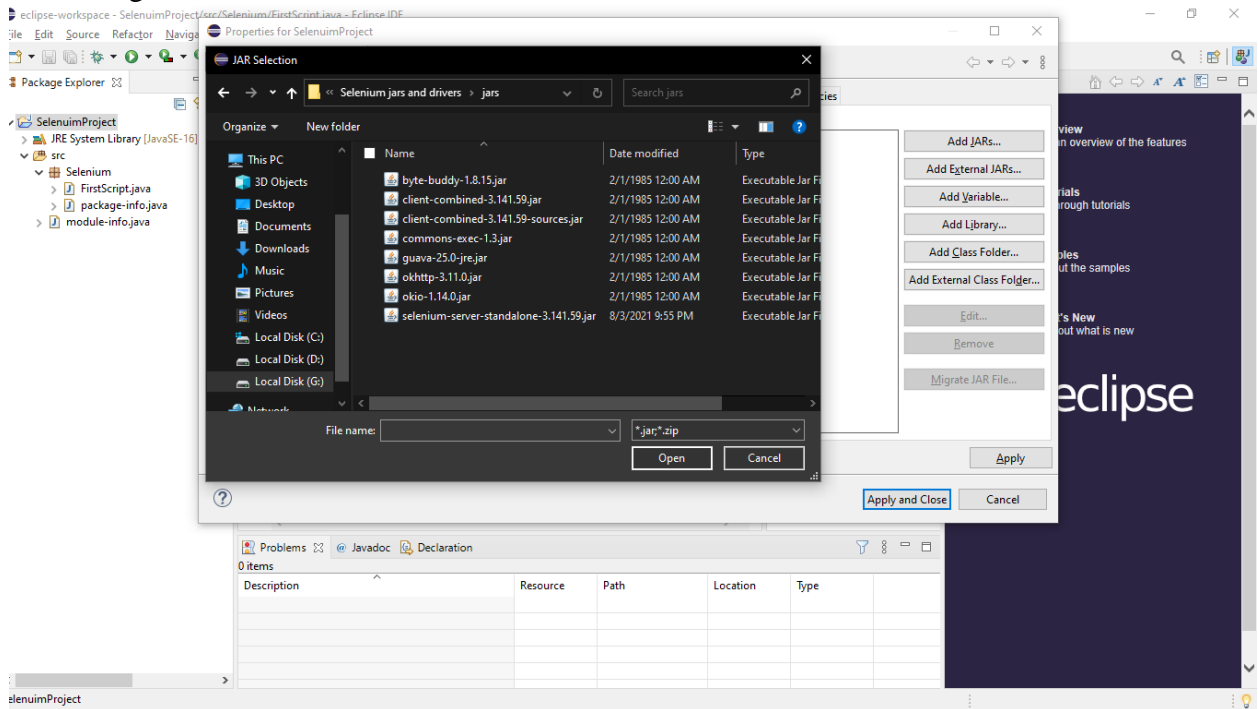
19. Class Created



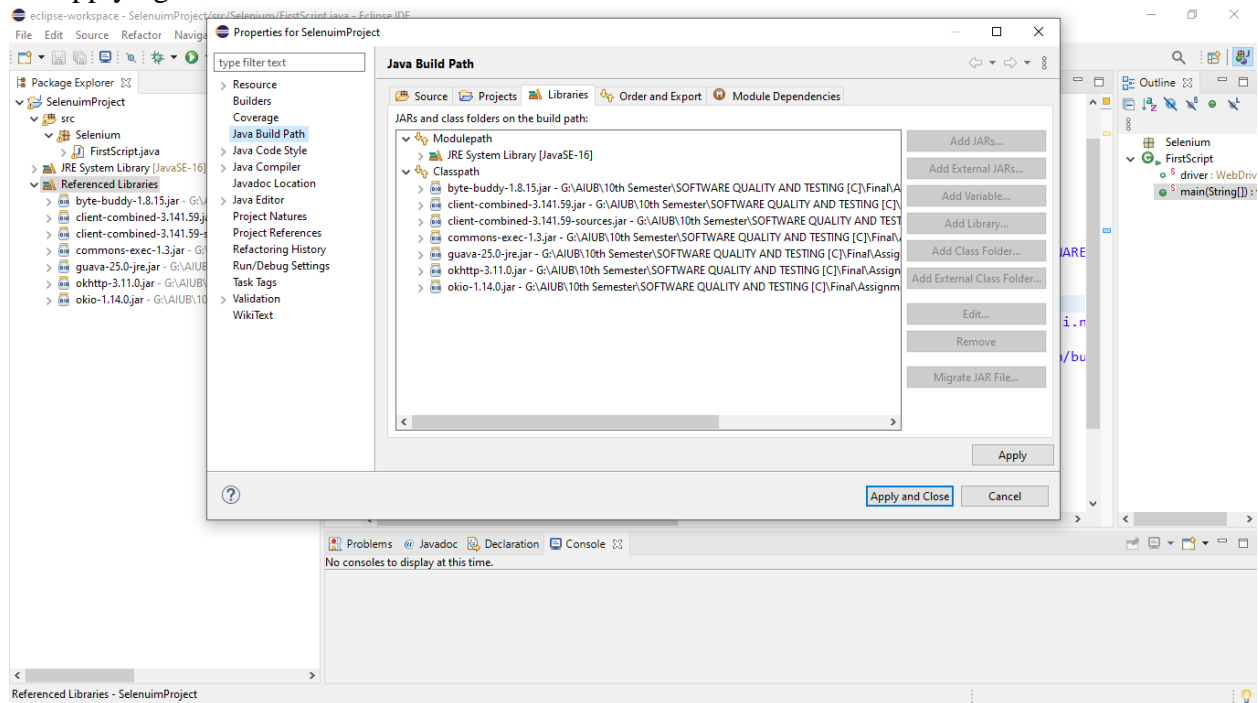
20. Configuring Java Build Path



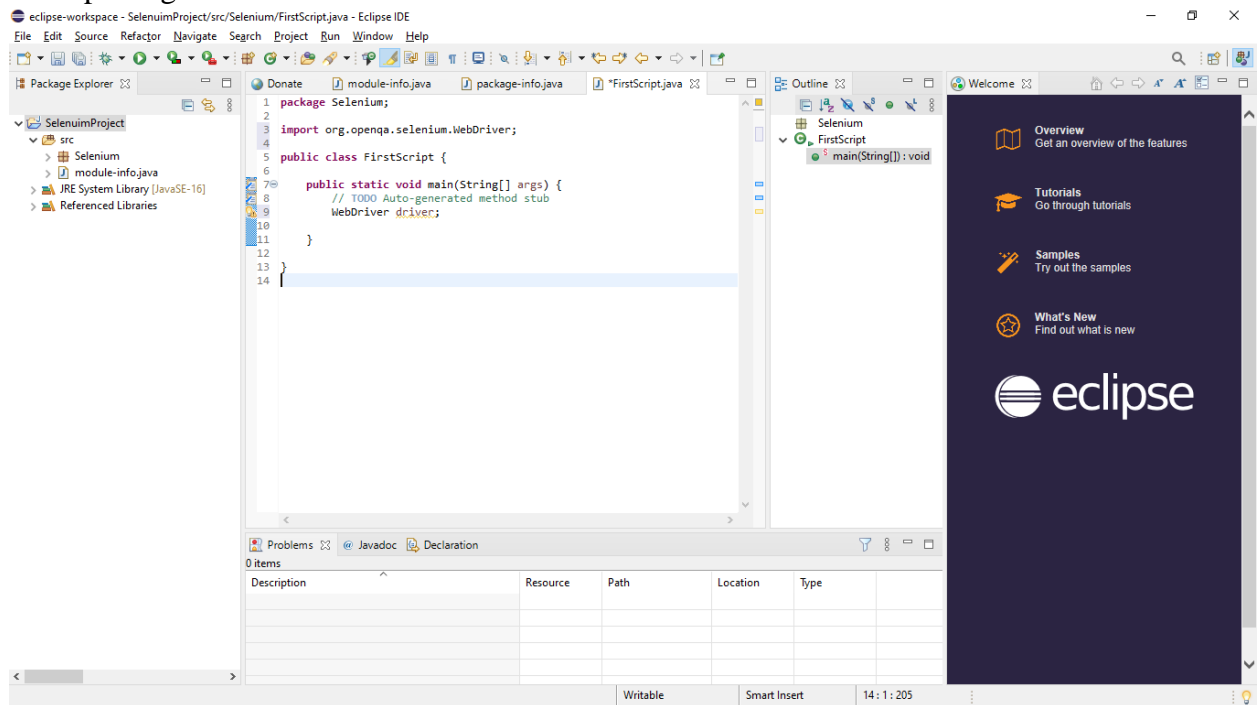
21.Adding Jars files



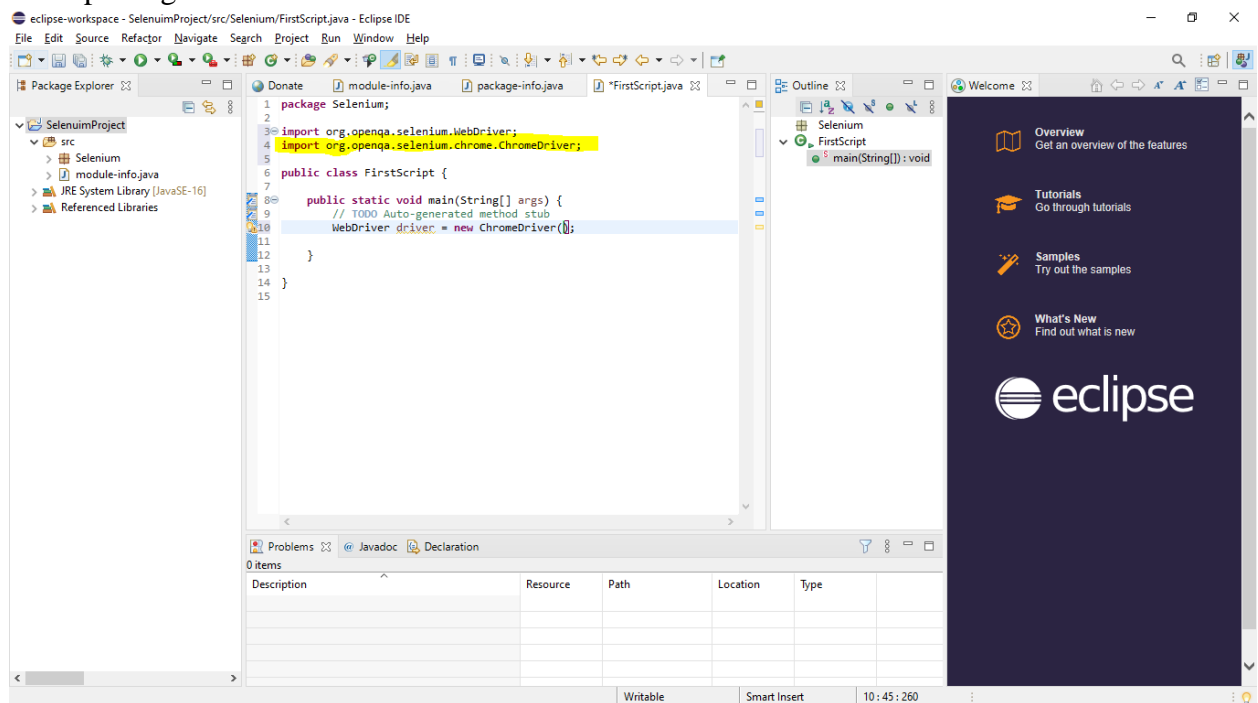
22.Applying Jars files



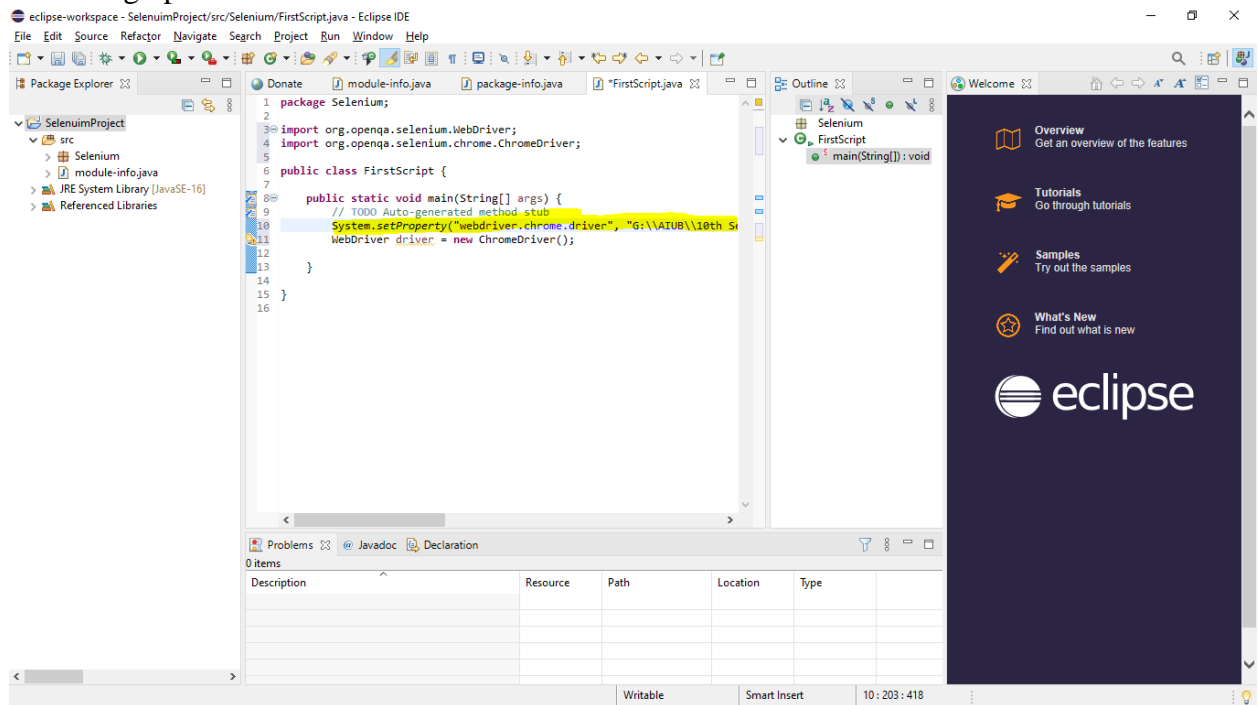
23.Importing Selenium WebDriver



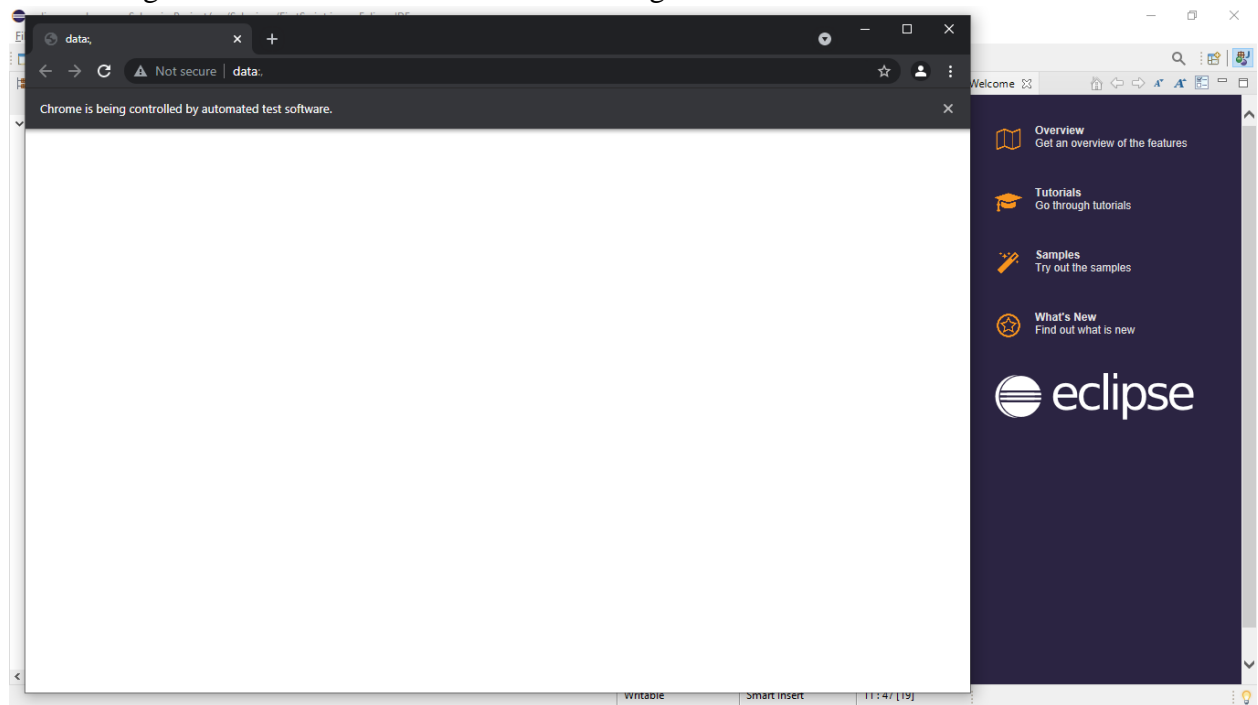
24.Importing Chrome Driver



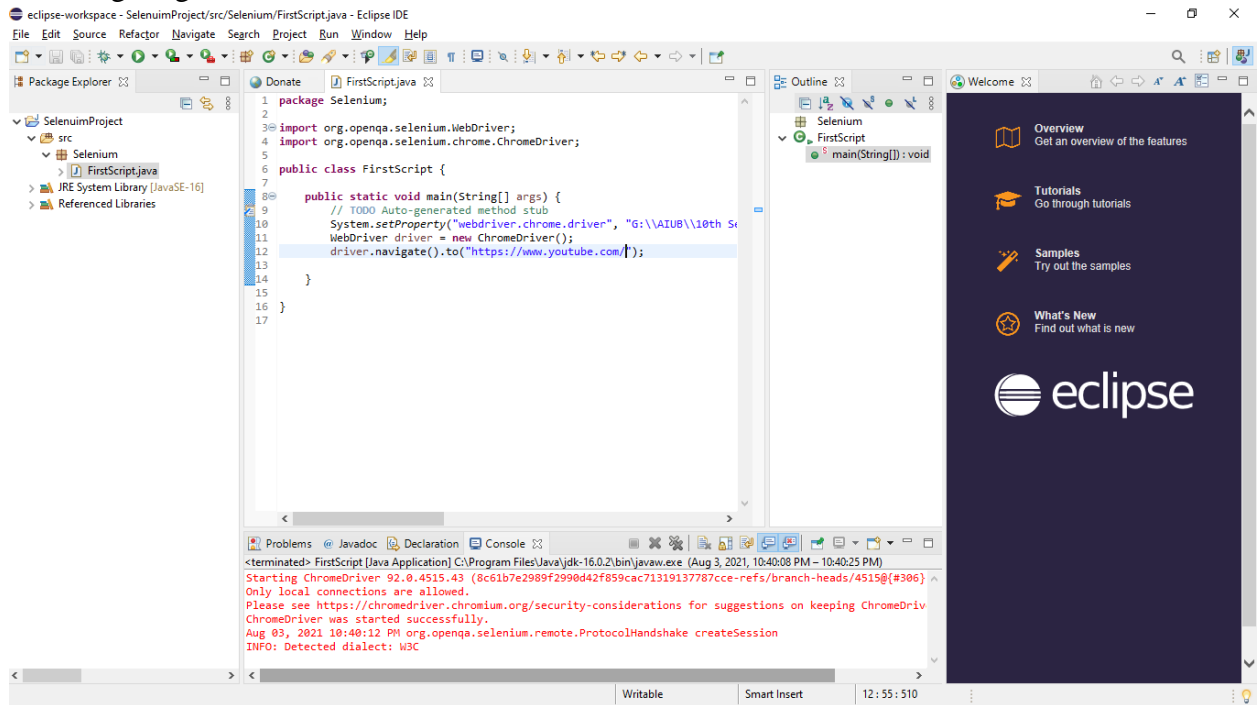
25.Setting up Chrome Driver



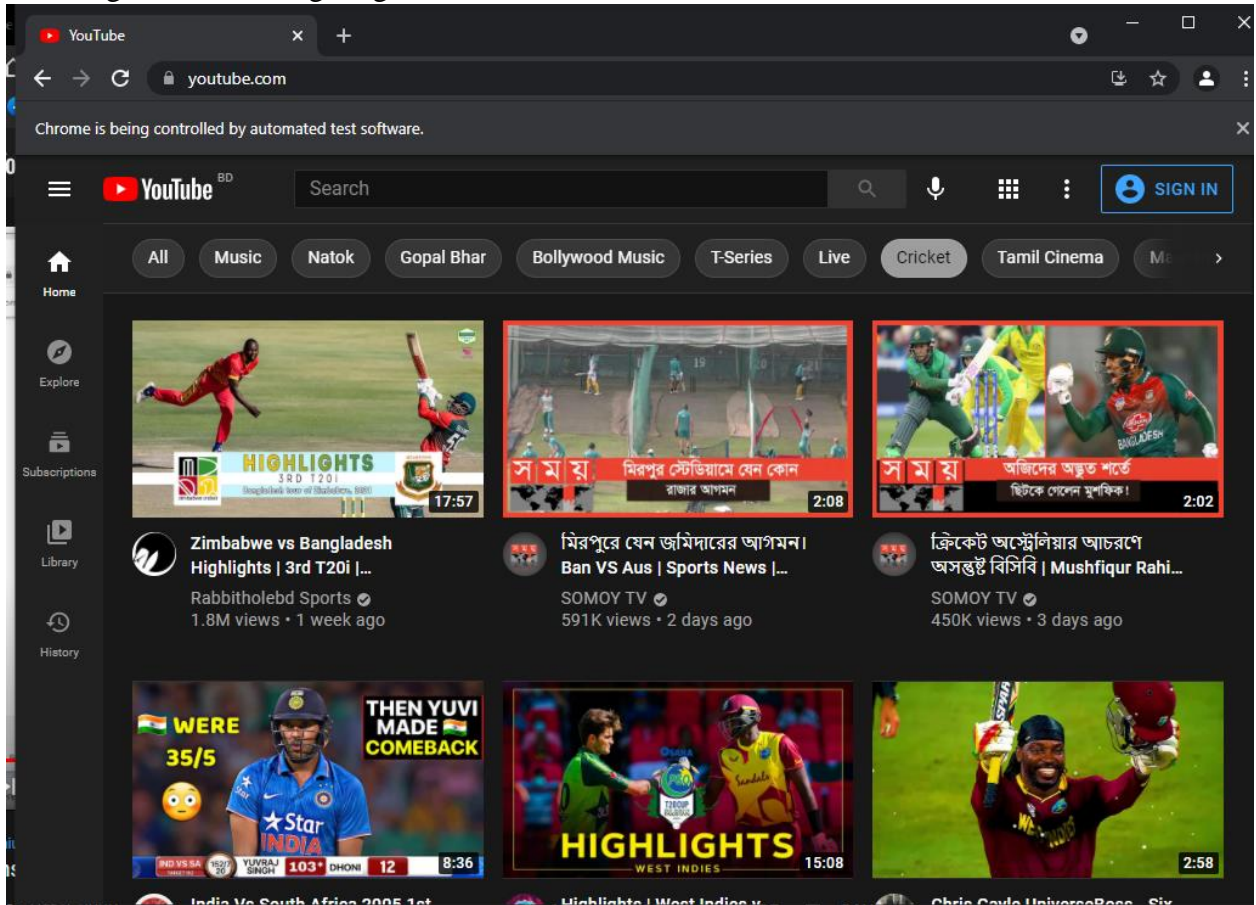
26.Running Selenium Automated Software Testing



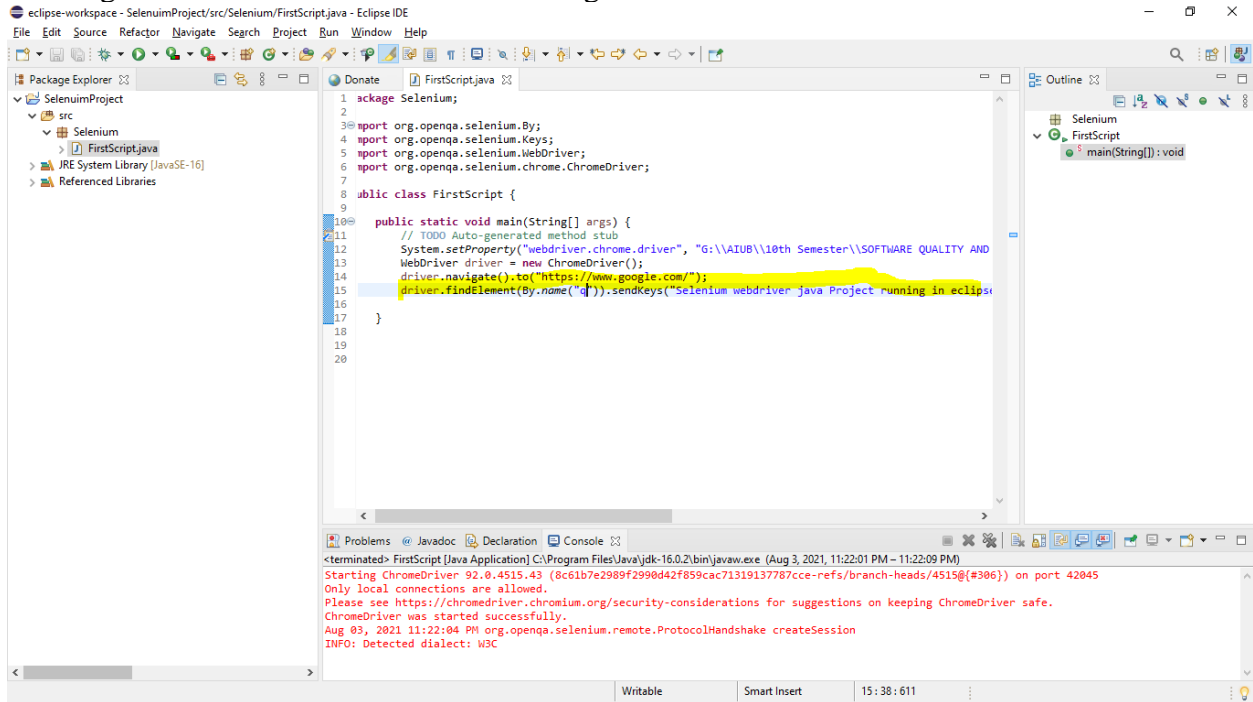
27. Navigating to Chrome Browser



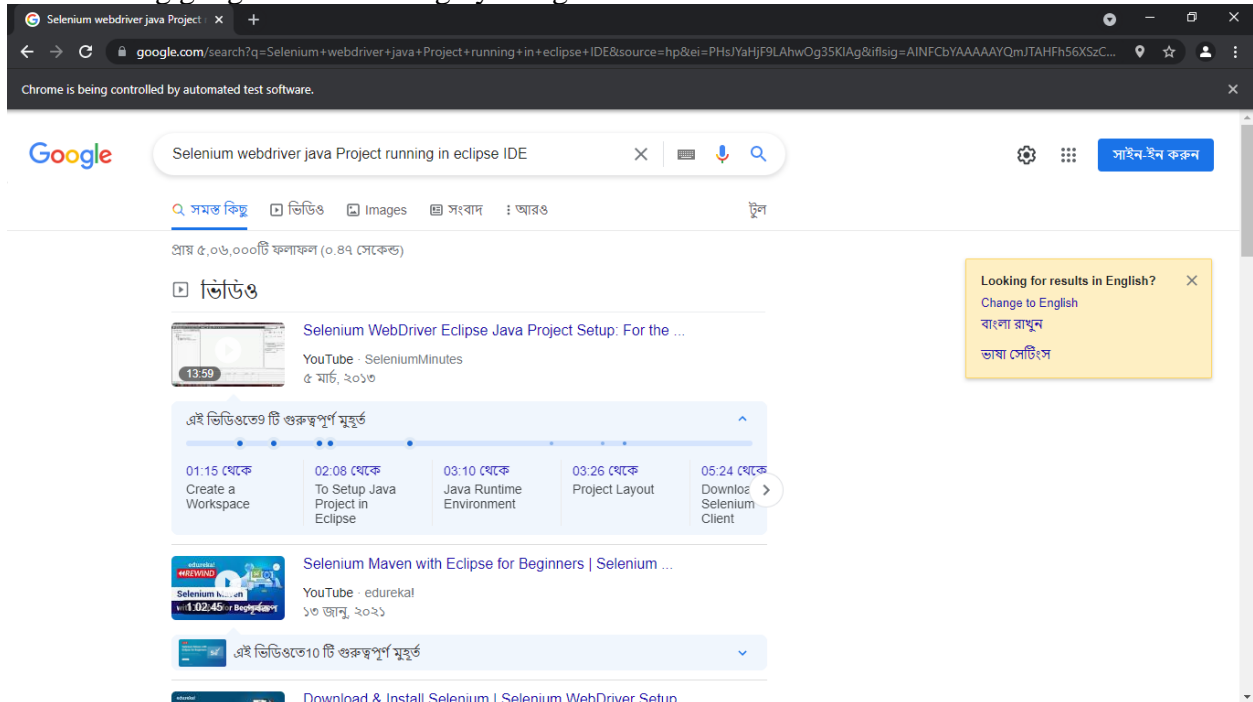
28.Using selenium navigating to YouTube browser.



29.using selenium chrome driver for browsing



30.Browsing google and searching by using automated test software selenium



2. Describe the benefit of automated testing and specialty of Selenium.

Answer:

Automated testing is the best way to increase the efficiency, effectiveness and coverage of the software testing. Automated testing check the result of the expected behavior and report to the engineer about the test result. And automated test can be repeated easily and can be extended to perform tasks which is not possible in manual testing. Automated testing is good way to save money and time as automated testing can decrease the time to execute the repetitive tests from days to hours. When time saves that relates directly into cost savings. Automated software testing looks inside the software and see memory files, data tables, file contents, and internal program states to ensure that the product is behaving as expected. Test automation executes lots of different complex test cases during every test run. Automated tests repeatedly perform the steps when they are executed and record detailed results. Tests can be run automatically whenever source code are changed and notify the developer team if test fail. Features like these saves developer teams time.

Selenium is the open source automation testing driver which is used for doing automated tests on different web browsers. Selenium is used to automate the testing in various web browsers. It supports Chrome, Mozilla, Firefox, Safari, and IE, and can easily automate browser testing using Selenium WebDriver.

❖ **Framework and Language Support**

Selenium can be supported in Java, Python, JavaScript, C#, programming languages for testing software automation. Scripts can be written in any of these programming languages and Selenium converts the codes into Selenium supported codes very firstly. Selenium supported languages has different frameworks which helps to write test script for Selenium test automation.

❖ **Open Source Availability**

The Selenium community is helping developers teams and software engineers to automate the web browser functions and features. Selenium customize the code for better code management. Selenium has now the very reliable automation tool because it can easily test the scripts to validate functionality.

❖ **Multi-Browser Support**

Chrome, Firefox, Safari, Internet Explorer, Opera, and Edge browsers are the most used web browsers and Selenium script can be easily run in all the mentioned browsers. And the codes for selenium is same of all the browser, so it do need to rewrite the script again.

❖ **Support Across Various Operating Systems**

Selenium automation tool supports all operating systems. Selenium is supporting and can work with different operating systems like Windows, Linux, Mac OS, UNIX, etc. This makes developers and software testers to write easily the test automation scripts.

❖ **Ease Of Implementation**

Selenium automation framework is very easy to understand and useful tool. Selenium helps to create and execute test scripts effectively. Testers can monitor while tests are running. Testers easily analyze detailed reports of Selenium and take proper actions.

❖ **Reusability and Integrations**

Selenium automation tests are reusable and can be tested in multiple browsers and operating systems. Selenium is not an all-inclusive web automation testing tool. Because, it needs third-party frameworks and add-ons to broaden the scope of testing.

❖ **Flexibility**

Test management is very important in testing lifecycle. It is easier and very efficient with Selenium features like regrouping and refactoring of test cases. This helps developers and testers in quick changes to the code, reducing duplication, minimizing complications and improving maintainability. These features enable Selenium more flexible and usable as compared to other automation testing tools and helps Selenium to keep an edge.

❖ **Parallel Test Execution**

The main purpose of automated testing is to save efforts and time. By using Selenium Grid, we can execute multiple tests in parallel, reducing the test execution time.

❖ **Less Hardware Usage**

Selenium focused on automation tools like QTP, UFT, SilkTest, and Selenium requires less hardware as compared to other testing tools.

❖ **Easy to Learn and Use**

Writing Selenium scripts is like writing a few pieces of codes to automate functionalities of any website. Documentation on the Selenium website is very helpful for developer and testers team to start with Selenium automation testing. Selenium tutorials, testing, and development support is just a Google search away.

❖ **Constant Updates**

The Selenium community is constantly releasing updates and upgrades. These upgrades are readily available and easy to understand. This makes Selenium resourceful as compared to other tools and cost-effective.

3.Practice a dummy project testing in Selenium and put all screenshots from your computer during practicing it.

Answer:

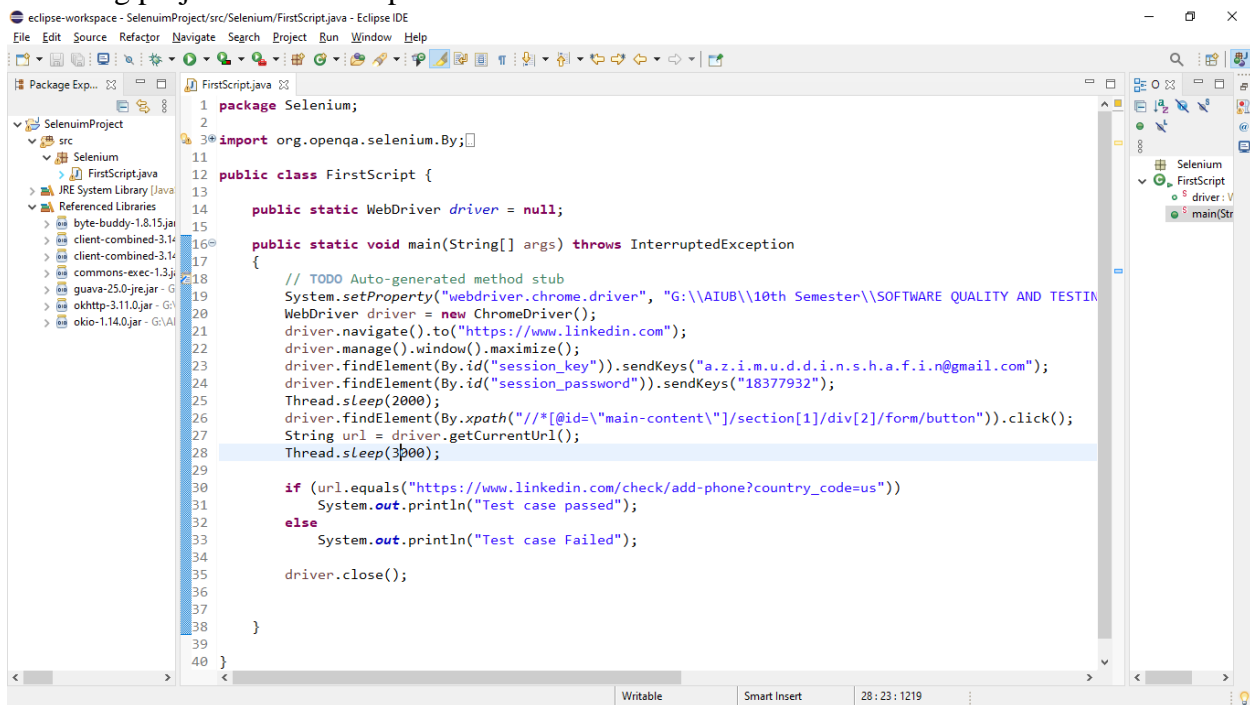
Selenium is designed to automate web browser automation. It is primarily used to write scripts for actions users might take on website.

❖ The LinkedIn Login Use Case

- In this test, we use LinkedIn website to test a very basic use case in chrome, in which a user logs in and, upon successful authentication, and then go to LinkedIn Homepage. There are two basic processes in this use case, each of which we want to test:
- The login process, which involves the user entering a username and password in a form, and then clicking a Sign In button.

The login response process, in which the website displays the login response message and visit the homepage.

1.Writing project code in Eclipse IDE



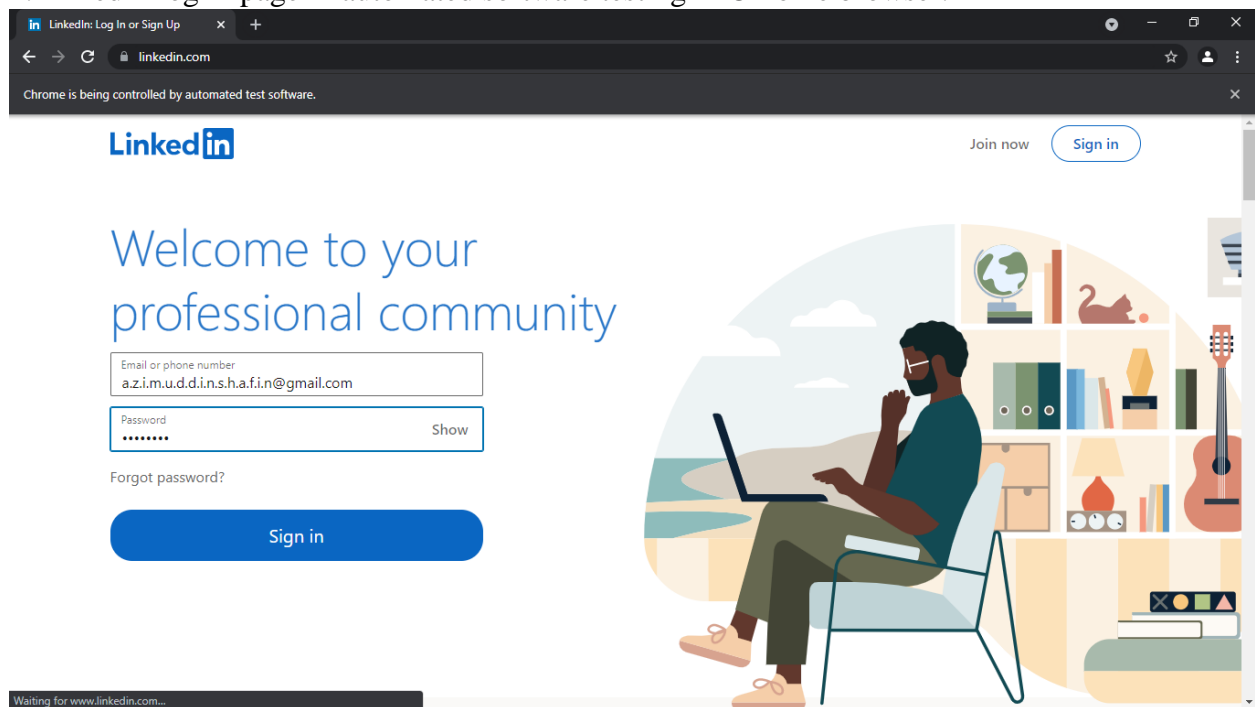
The screenshot shows the Eclipse IDE interface with a Java project named 'SeleniumProject'. The 'FirstScript.java' file is open, displaying the following code:

```
1 package Selenium;
2
3 import org.openqa.selenium.By;
4
5 public class FirstScript {
6
7     public static WebDriver driver = null;
8
9     public static void main(String[] args) throws InterruptedException
10    {
11        // TODO Auto-generated method stub
12        System.setProperty("webdriver.chrome.driver", "G:\\AIUB\\10th Semester\\SOFTWARE QUALITY AND TESTING\\chromedriver.exe");
13        WebDriver driver = new ChromeDriver();
14        driver.navigate().to("https://www.linkedin.com");
15        driver.manage().window().maximize();
16        driver.findElement(By.id("session_key")).sendKeys("a.z.i.m.u.d.d.i.n.s.h.a.f.i.n@gmail.com");
17        driver.findElement(By.id("session_password")).sendKeys("18377932");
18        Thread.sleep(2000);
19        driver.findElement(By.xpath("//*[@id='main-content']/section[1]/div[2]/form/button")).click();
20        String url = driver.getCurrentUrl();
21        Thread.sleep(3000);
22
23        if (url.equals("https://www.linkedin.com/check/add-phone?country_code=us"))
24            System.out.println("Test case passed");
25        else
26            System.out.println("Test case Failed");
27
28        driver.close();
29    }
30 }
31 }
```

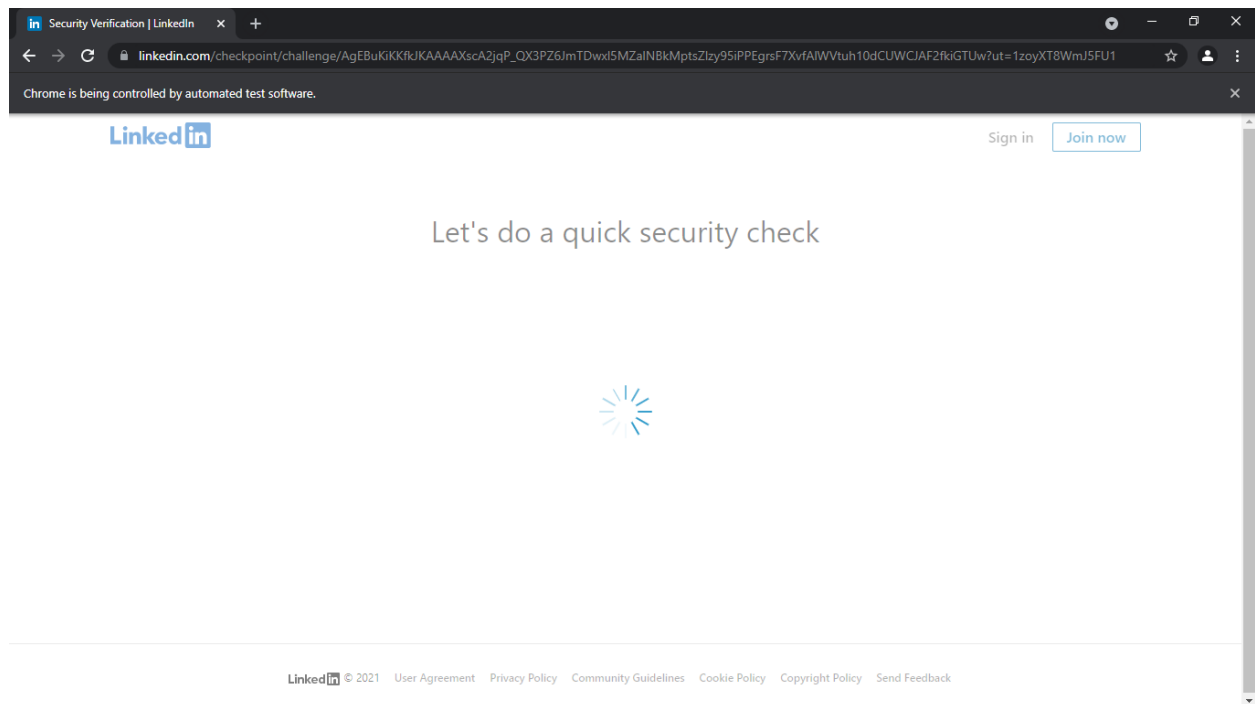
4. Show all the test results of your practice in the report.

Answer:

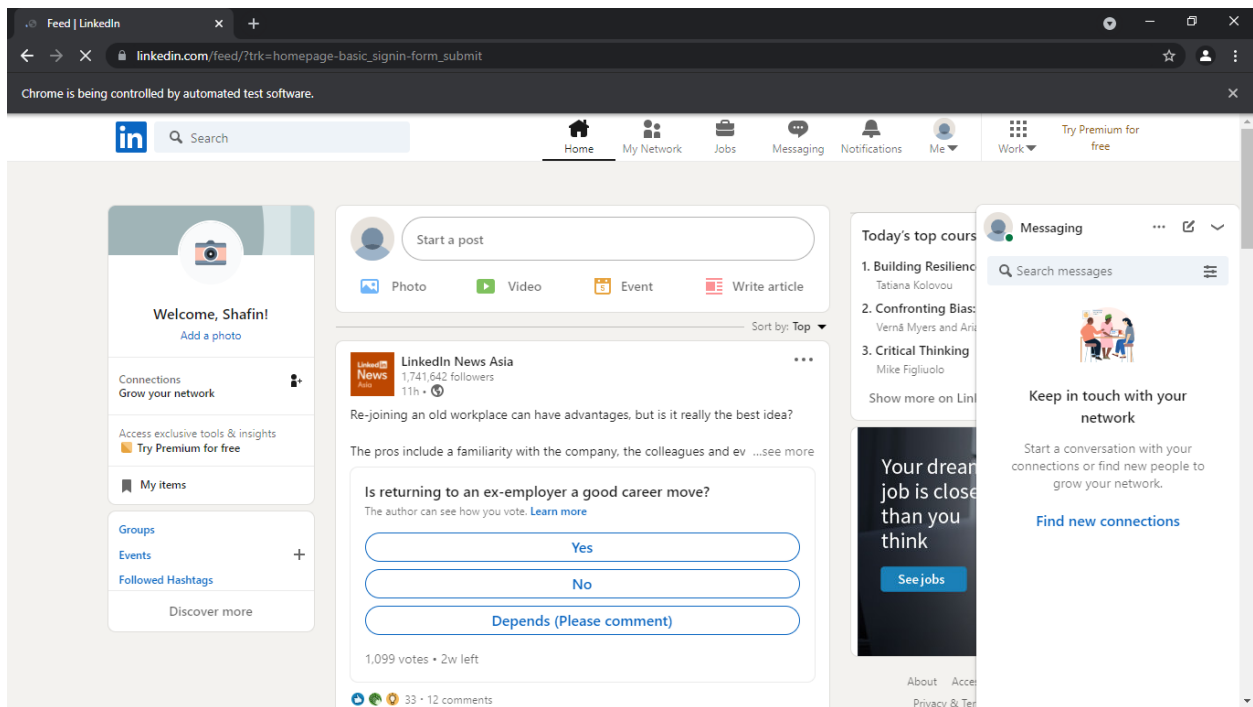
1. LinkedIn log in page in automated software testing in Chrome browser.



2.LogIn Security Checkup



3.Linked Home page visiting using selenium



4.test case result passed

