**Lab Exercise - Automating Microsoft Edge with Selenium WebDriver using Java**

**Objective:**

* Learn to set up and run Selenium WebDriver with Microsoft Edge.
* Automate a simple web interaction using Java.

**Step 1: Prerequisites**

Before starting, make sure you have the following installed:

* Java JDK 17 or later
* Microsoft Edge (Latest Version)
* Microsoft EdgeDriver (matching your Edge version)
* Eclipse or IntelliJ IDEA (or any Java IDE)
* Maven (Optional, if using dependencies from pom.xml)

**Step 2: Download and Set Up Microsoft Edge WebDriver**

1. Find your Edge version  
   Open Microsoft Edge and type:  
   edge://settings/help  
   Note the Edge version.
2. Download EdgeDriver  
   Visit the Edge WebDriver Download page at  
   https://developer.microsoft.com/en-us/microsoft-edge/tools/webdriver/  
   Download the matching EdgeDriver version for your OS.
3. Extract the file and copy msedgedriver.exe to a known location (e.g., C:\WebDriver).

**Step 3: Set Up a Java Project in an IDE**

* Open Eclipse or IntelliJ IDEA.
* Create a new Java project named SeleniumEdgeTest.
* Create a new Java class named EdgeSeleniumTest.

**Step 4: Add Selenium Dependencies (For Maven Users)**

If you are using Maven, add the following to your pom.xml:

<dependencies>

<dependency>

<groupId>org.seleniumhq.selenium</groupId>

<artifactId>selenium-java</artifactId>

<version>4.5.1</version>

</dependency>

</dependencies>

If not using Maven, download Selenium JAR files from https://www.selenium.dev/downloads/ and add them to your project’s Build Path.

**Step 5: Write the Selenium WebDriver Code**

Create a new Java class and copy the following code:

**Example 1:**

package demo;

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.edge.EdgeDriver;

import org.openqa.selenium.edge.EdgeOptions;

public class MyClass {

public static void main(String[] args) {

// Set the EdgeDriver executable path

System.setProperty("webdriver.edge.driver", "C:\\webdrv\\msedgedriver.exe");

// EdgeOptions configuration

EdgeOptions options = new EdgeOptions();

options.addArguments("--remote-allow-origins=\*"); // Bypass security restrictions

options.setCapability("ms:edgeOptions", options);

options.setCapability("se:ieOptions", "{}"); // Fix WebSocket issue

// Start EdgeDriver

WebDriver driver = new EdgeDriver(options);

try {

driver.get("https://www.google.com");

System.out.println("Title: " + driver.getTitle());

} finally {

driver.quit();

}

}

}

**Example 2:**

import org.openqa.selenium.WebDriver;

import org.openqa.selenium.edge.EdgeDriver;

import org.openqa.selenium.edge.EdgeOptions;

public class EdgeSeleniumTest {

public static void main(String[] args) {

// Step 1: Set the EdgeDriver path

System.setProperty("webdriver.edge.driver", "C:\\WebDriver\\msedgedriver.exe");

// Step 2: Configure EdgeOptions

EdgeOptions options = new EdgeOptions();

options.addArguments("--remote-allow-origins=\*"); // Fix for remote connection issues

options.addArguments("inprivate"); // Run Edge in Incognito mode

options.setCapability("ms:edgeOptions", options);

// Step 3: Initialize WebDriver

WebDriver driver = new EdgeDriver(options);

try {

// Step 4: Open Google

driver.get("https://www.google.com");

// Step 5: Print Page Title

System.out.println("Title of the page: " + driver.getTitle());

// Step 6: Verify Page Title

if (driver.getTitle().contains("Google")) {

System.out.println("Test Passed: Google homepage opened successfully!");

} else {

System.out.println("Test Failed: Unexpected page title.");

}

} catch (Exception e) {

e.printStackTrace();

} finally {

// Step 7: Close the browser

driver.quit();

}

}

}

**Step 6: Run the Test**

1. Save the file.
2. Run the program (EdgeSeleniumTest.java).
3. Expected Output (in Console):

Title of the page: Google

Test Passed: Google homepage opened successfully!

1. Microsoft Edge will open, visit Google, and then close automatically.

**Step 7: Troubleshooting**

**Error: "403 Forbidden"**

* Solution: Use EdgeOptions() and set "--remote-allow-origins=\*".

**Error: "WebDriverException: Connection Refused"**

* Solution: Ensure EdgeDriver version matches Edge (Step 2).

**Error: "EdgeDriver Not Found"**

* Solution: Check System.setProperty("webdriver.edge.driver", "C:\\WebDriver\\msedgedriver.exe");  
  Make sure the path is correct.

**Lab Exercise Summary**

* Set up Selenium WebDriver for Microsoft Edge.
* Wrote a Java program to open Google and verify the title.
* Handled common errors like WebSocket failures.