# Lab 4: Using WebDriver-Manager

In this lab, we are going to leverage WebDriverManager by Boni Garcia to setup browser drivers required to execute our tests.

**Problem Statement**

We all know that we need to have browser drivers, .exe files like chromedriver.exe and geckodriver.exe in case of windows environment or binary files like chromedriver and geckodriver in case of linux distributions, in order to run our selenium webdriver automation scripts on chrome and firefox browsers.

And also we need to set the path of these files in our script like below or we need to add location to the class path.

**Example for chrome browser**

```
System.setProperty("webdriver.chrome.driver", "/path/to/binary/chromedriver");
```

**Example for firefox browser:**

```
System.setProperty("webdriver.gecko.driver", "/path/to/binary/geckodriver");
```

If the path is not defined or if the path provided is wrong, we will get an exception like below when running our tests.

```
Exception in thread "main" java.lang.IllegalStateException: The path to the driver
executable must be set by the webdriver.gecko.driver system property; for more
information, see https://github.com/mozilla/geckodriver. The latest version can be
downloaded from https://github.com/mozilla/geckodriver/releases
    at com.google.common.base.Preconditions.checkState(Preconditions.java:847)
    at
org.openqa.selenium.remote.service.DriverService.findExecutable(DriverService.java:125)

    at
org.openqa.selenium.firefox.GeckoDriverService.access$100(GeckoDriverService.java:43)
    at
org.openqa.selenium.firefox.GeckoDriverService$Builder.findDefaultExecutable(GeckoDrive

    at
org.openqa.selenium.remote.service.DriverService$Builder.build(DriverService.java:346)
    at org.openqa.selenium.firefox.FirefoxDriver.toExecutor(FirefoxDriver.java:168)
    at org.openqa.selenium.firefox.FirefoxDriver.(FirefoxDriver.java:125)
    at org.openqa.selenium.firefox.FirefoxDriver.(FirefoxDriver.java:103)
```

To avoid this error, we need to manually download and manage these drivers for each operating systems/environments and that is very painful. We also have to check and update relevant drivers when new versions of the binaries are released or new browsers versions are released along with compatibility for driver to browser.

WebDriverManager by Boni Garcia helps us to manage driver related settings automatically. Webdriver manager downloads binaries/executables in an automated way and helps us to avoid all the manual steps that we do previously related to browser drivers to run our tests.

It supports browsers such as Chrome, Firefox, Opera, PhantomJS, Microsoft Edge, or Internet Explorer. You can check that in project page.

Check maven page for more details of supported builder projects.

**Solution**

Lab solution is present in following directory:

`C:\Users\fenago\Desktop\advanced-selenium-java\Lab04\simple-project`

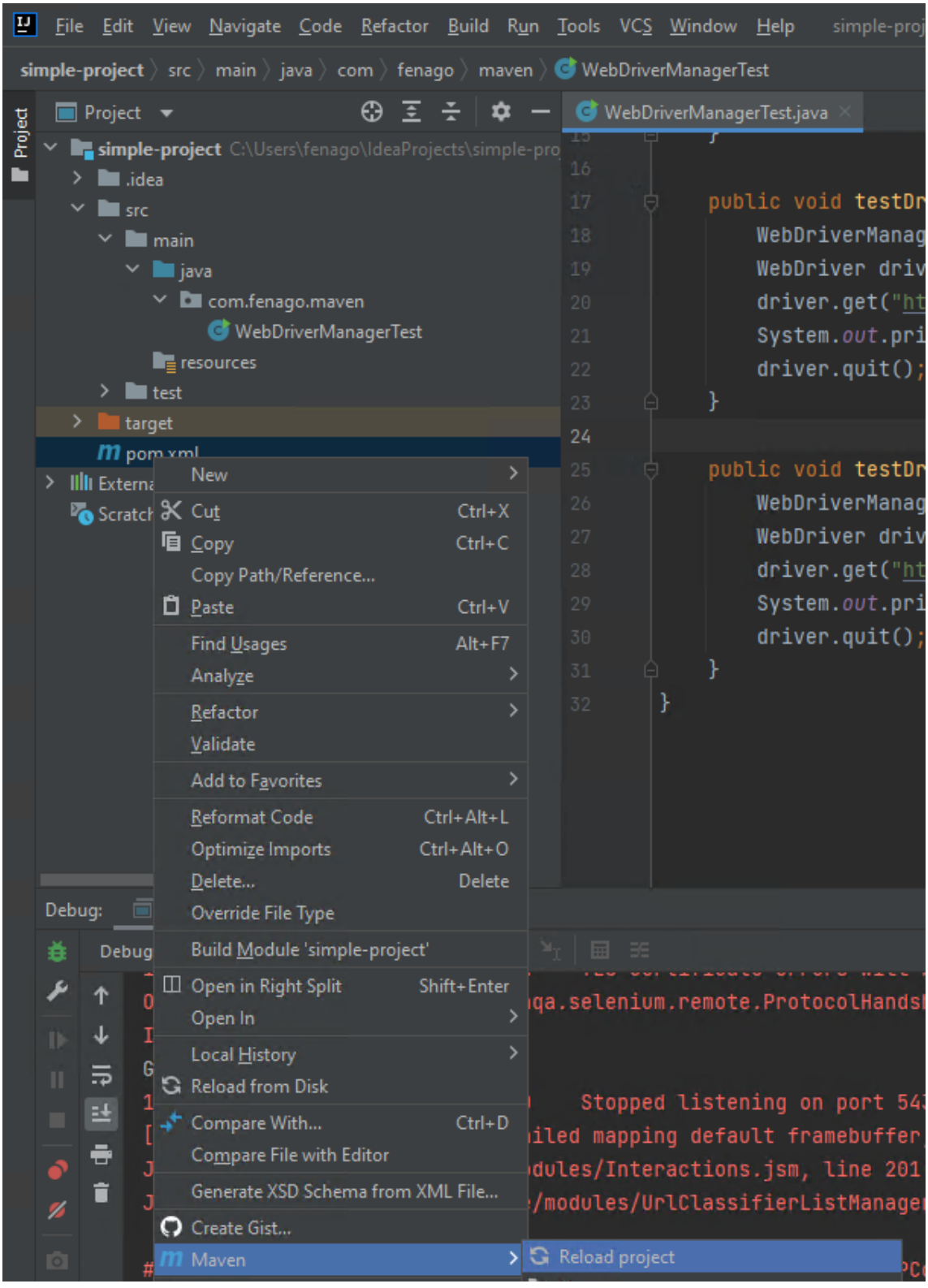
**Maven Project**

We will use `simple-project` maven project created in Lab 2.

In case of **Maven project**, we need to add the following dependency in pom.xml:

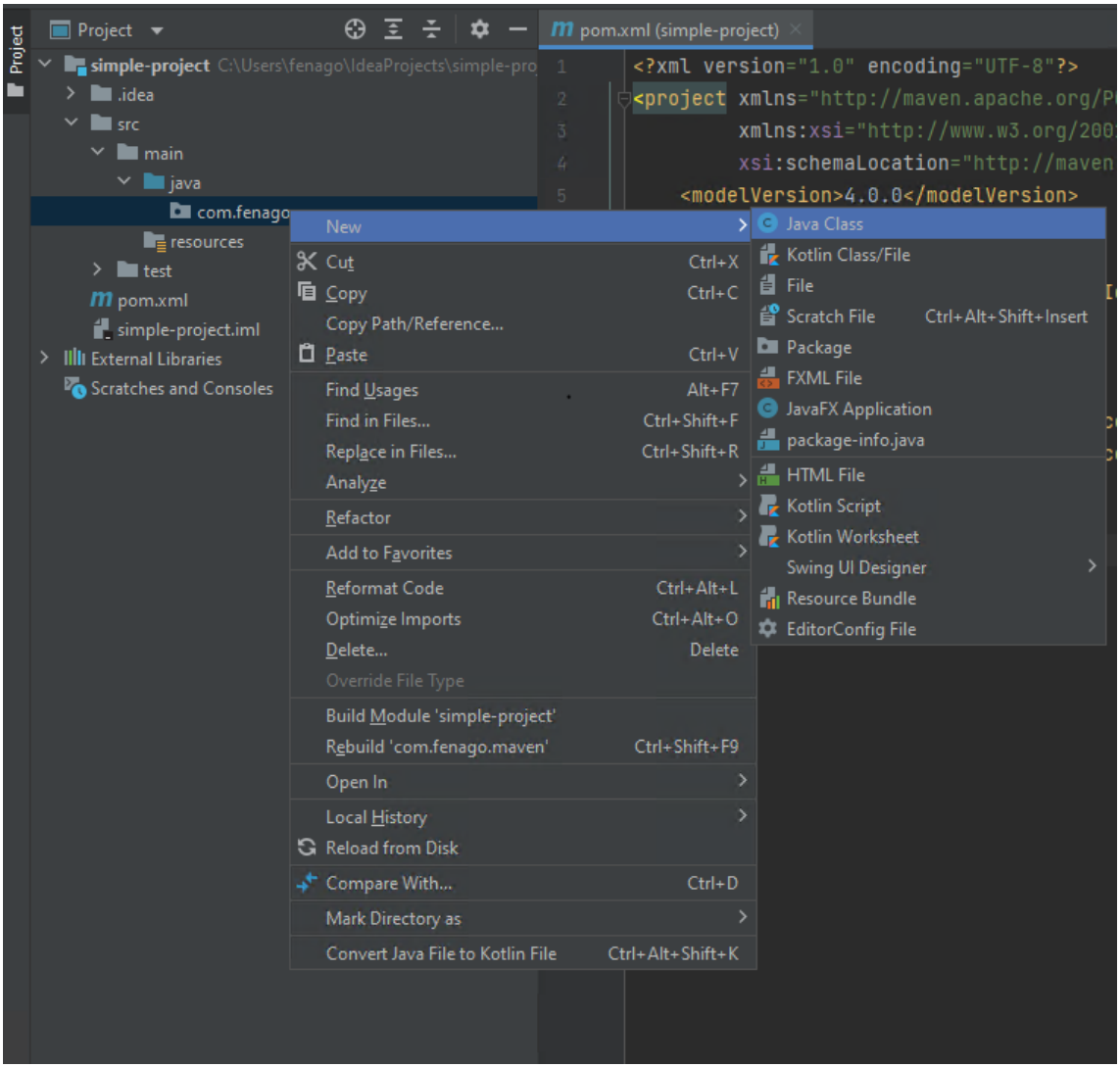
```
    <dependencies>
        <dependency>
            <groupId>org.seleniumhq.selenium</groupId>
            <artifactId>selenium-java</artifactId>
            <version>3.141.5</version>
        </dependency>
        <dependency>
            <groupId>io.github.bonigarcia</groupId>
            <artifactId>webdrivermanager</artifactId>
            <version>4.4.3</version>
        </dependency>
    </dependencies>
```

Right-click on pom.xml and select **Maven | Reload project**




**Launch chrome and firefox browser**

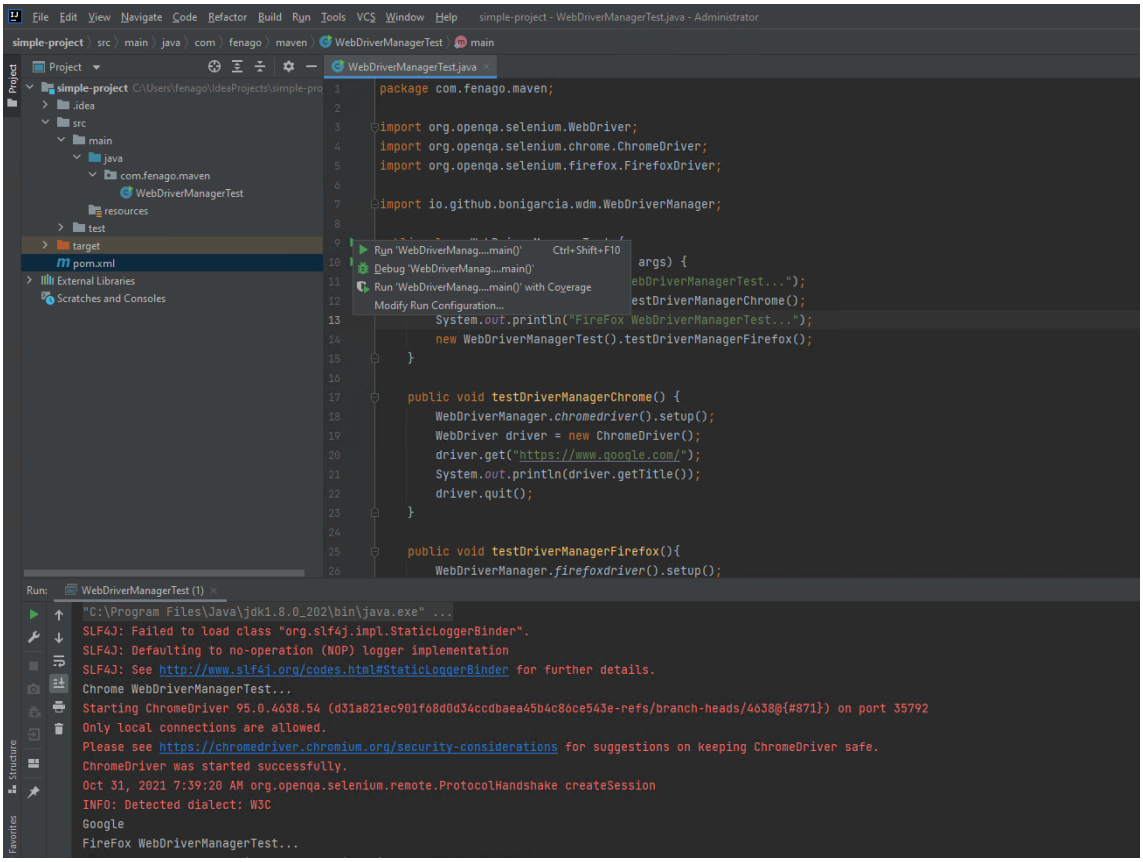
- Define new class called `WebDriverManagerTest` and copy following code:

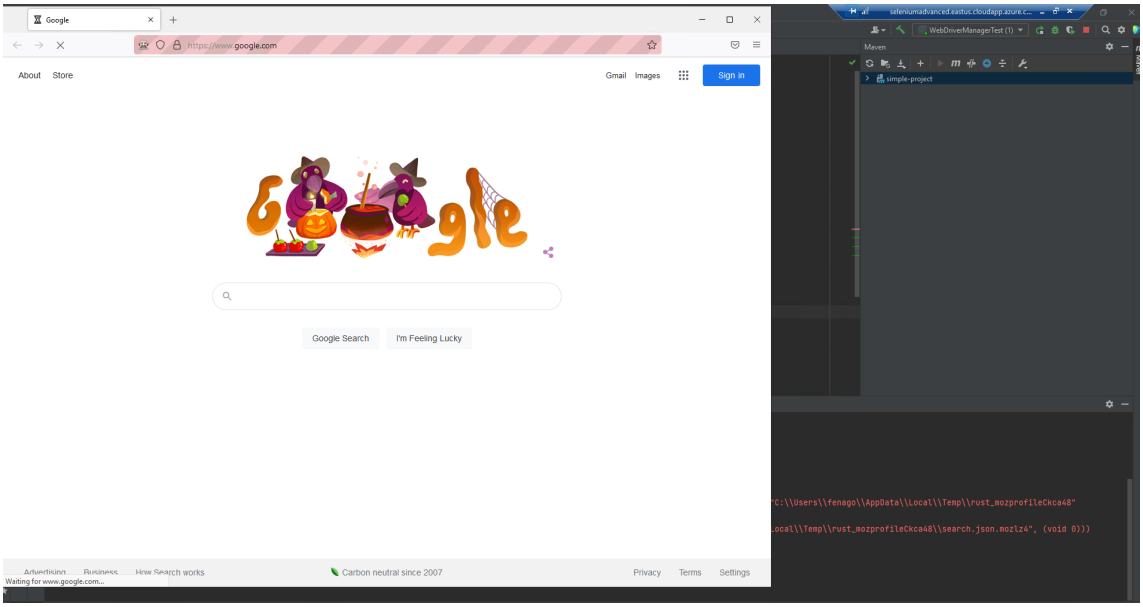



```
package com.fenago.maven;

import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.firefox.FirefoxDriver;

import io.github.bonigarcia.wdm.WebDriverManager;

public class WebDriverManagerTest {
    public static void main(String[] args) {
        System.out.println("Chrome WebDriverManagerTest...");
        new WebDriverManagerTest().testDriverManagerChrome();
        System.out.println("FireFox WebDriverManagerTest...");
        new WebDriverManagerTest().testDriverManagerFirefox();
    }

    public void testDriverManagerChrome() {
        WebDriverManager.chromedriver().setup();
```

```
        WebDriver driver = new ChromeDriver();
        driver.get("https://www.google.com/");
        System.out.println(driver.getTitle());
        driver.quit();
    }

    public void testDriverManagerFirefox(){
        WebDriverManager.firefoxdriver().setup();
        WebDriver driver = new FirefoxDriver();
        driver.get("https://www.google.com/");
        System.out.println(driver.getTitle());
        driver.quit();
    }
}
```

**Run WebDriver Application**






**Note:**

To download specific versions or from specific urls, change respective value of the variables in version.properties or webdrivermanager.properties depending on where it is available.
Also you can add support to any new versions of browser driver by defining it in version.properties.

Have a look at [version.properties]

Have a look at [webdrivermanager.properties]

At any time you want to change default values, copy the required files from [here] into your resources directory with exact same name and update required values in the property file. That's it.