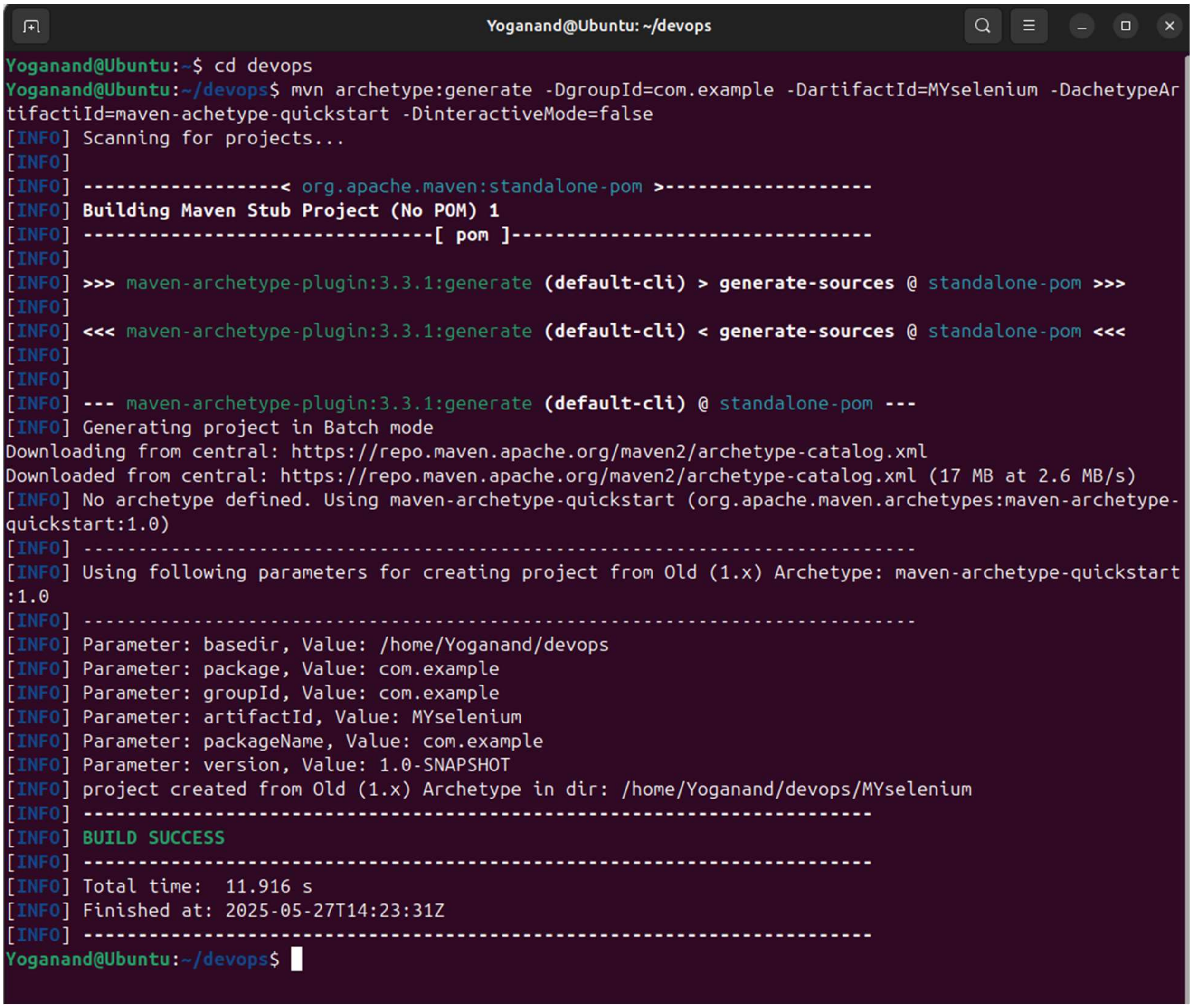
Experiment 5: Setting Up a Maven Project with Selenium WebDriver

Selenium is an open-source web automation tool that allows users to programmatically interact with web elements. This project demonstrates how to use Maven and Selenium to automate login to https://www.saucedemo.com using valid credentials.

Step 1: Create a Maven Project

Open the terminal and run:

```
mvn archetype: generate -DgroupId=com.example -DartifactId=MYselenium -DarchetypeArtifactId=maven-archetype-quickstart -DinteractiveMode=false
```



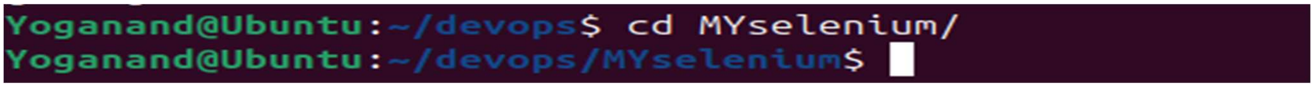
Yoganand@Ubuntu: ~/devops

```
Yoganand@Ubuntu:~$ cd devops
Yoganand@Ubuntu:~/devops$ mvn archetype:generate -DgroupId=com.example -DartifactId=MYselenium -DachetypeAr
tifactiId=maven-achetype-quickstart -DinteractiveMode=false
[INFO] Scanning for projects...
[INFO]
[INFO] ------------------< org.apache.maven:standalone-pom >-------------------
[INFO] Building Maven Stub Project (No POM) 1
[INFO] --------------------------------[ pom ]---------------------------------
[INFO]
[INFO] >>> maven-archetype-plugin:3.3.1:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO]
[INFO] <<< maven-archetype-plugin:3.3.1:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO]
[INFO]
[INFO] --- maven-archetype-plugin:3.3.1:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Batch mode
Downloading from central: https://repo.maven.apache.org/maven2/archetype-catalog.xml
Downloaded from central: https://repo.maven.apache.org/maven2/archetype-catalog.xml (17 MB at 2.6 MB/s)
[INFO] No archetype defined. Using maven-archetype-quickstart (org.apache.maven.archetypes:maven-archetype-
quickstart:1.0)
[INFO] ----------------------------------------------------------------------------
[INFO] Using following parameters for creating project from Old (1.x) Archetype: maven-archetype-quickstart
:1.0
[INFO] ----------------------------------------------------------------------------
[INFO] Parameter: basedir, Value: /home/Yoganand/devops
[INFO] Parameter: package, Value: com.example
[INFO] Parameter: groupId, Value: com.example
[INFO] Parameter: artifactId, Value: MYselenium
[INFO] Parameter: packageName, Value: com.example
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] project created from Old (1.x) Archetype in dir: /home/Yoganand/devops/MYselenium
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  11.916 s
[INFO] Finished at: 2025-05-27T14:23:31Z
[INFO] ------------------------------------------------------------------------
Yoganand@Ubuntu:~/devops$ 
```

This creates a project folder structure with src/main/java and src/test/java.

Step2. Navigate to Project Directory:

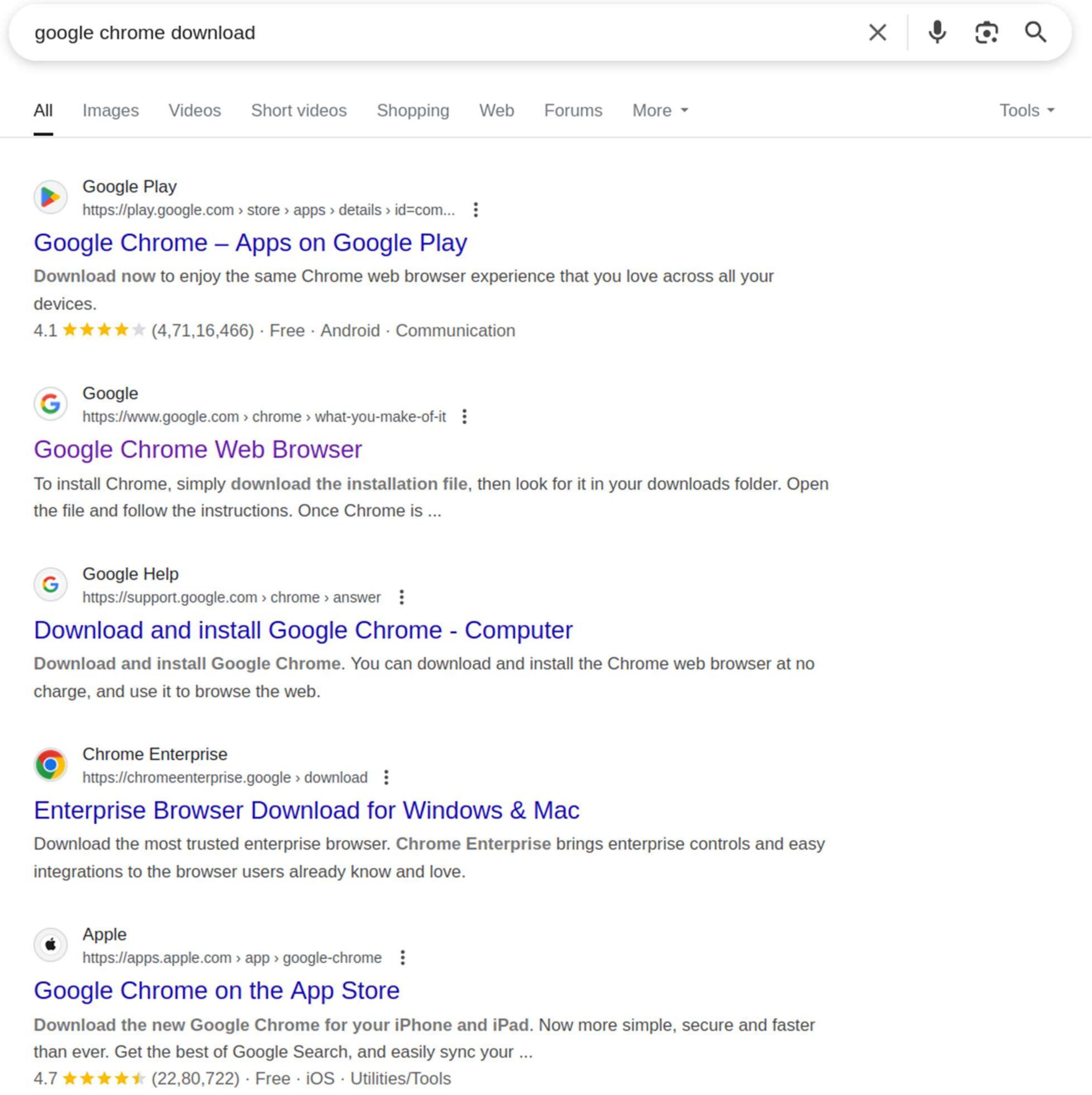
Give command: **cd maventogradle**



```
Yoganand@Ubuntu:~/devops$ cd MYselenium/
Yoganand@Ubuntu:~/devops/MYselenium$
```

Step 3: Install Google Chrome and ChromeDriver

Type google chrome download in the search bar.



Google Play
https://play.google.com › store › apps › details › id=com...

Google Chrome – Apps on Google Play

Download now to enjoy the same Chrome web browser experience that you love across all your devices.

4.1 ★★★★☆ (4,71,16,466) · Free · Android · Communication

Google
https://www.google.com › chrome › what-you-make-of-it

Google Chrome Web Browser

To install Chrome, simply **download the installation file**, then look for it in your downloads folder. Open the file and follow the instructions. Once Chrome is ...

Google Help
https://support.google.com › chrome › answer

Download and install Google Chrome - Computer

Download and install Google Chrome. You can download and install the Chrome web browser at no charge, and use it to browse the web.

Chrome Enterprise
https://chromeenterprise.google › download

Enterprise Browser Download for Windows & Mac

Download the most trusted enterprise browser. **Chrome Enterprise** brings enterprise controls and easy integrations to the browser users already know and love.

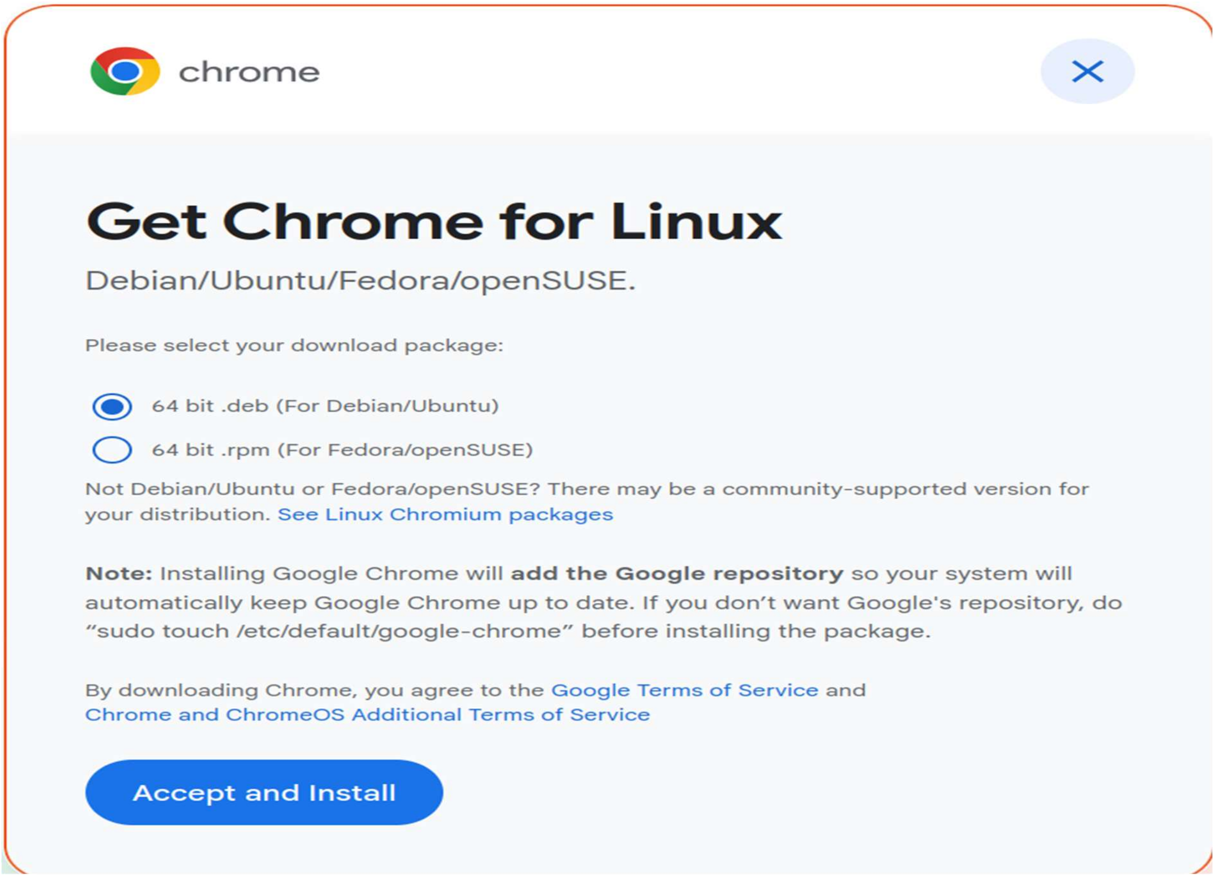
Apple
https://apps.apple.com › app › google-chrome

Google Chrome on the App Store

Download the new Google Chrome for your iPhone and iPad. Now more simple, secure and faster than ever. Get the best of Google Search, and easily sync your ...

4.7 ★★★★★ (22,80,722) · Free · iOS · Utilities/Tools

Follow the link, select **Chrome for Linux**, choose your preferred package, then click **Accept and Install**.



Get Chrome for Linux

Debian/Ubuntu/Fedora/openSUSE.

Please select your download package:

● 64 bit .deb (For Debian/Ubuntu)

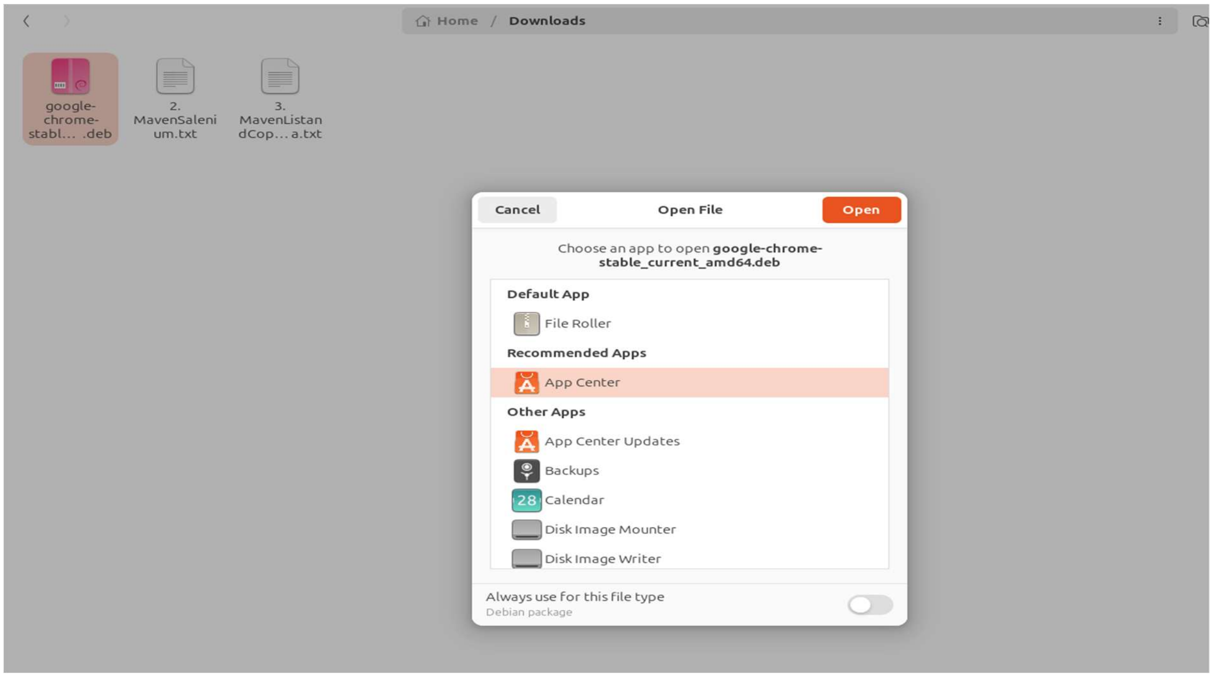
○ 64 bit .rpm (For Fedora/openSUSE)

Not Debian/Ubuntu or Fedora/openSUSE? There may be a community-supported version for your distribution. See Linux Chromium packages

Note: Installing Google Chrome will **add the Google repository** so your system will automatically keep Google Chrome up to date. If you don't want Google's repository, do "sudo touch /etc/default/google-chrome" before installing the package.

By downloading Chrome, you agree to the Google Terms of Service and Chrome and ChromeOS Additional Terms of Service

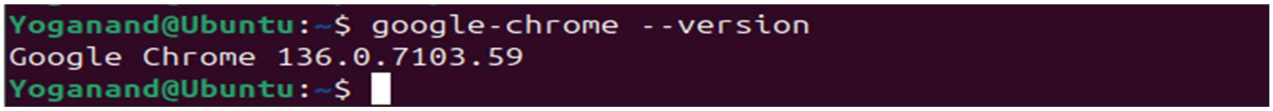
Once chrome is installed extract and download and now open google chrome.



Choose an app to open **google-chrome-stable_current_amd64.deb**

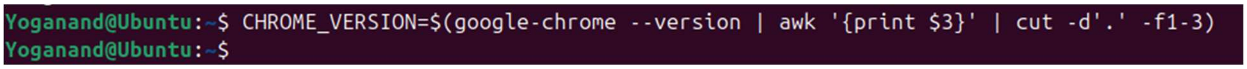
Always use for this file type
Debian package

a. Check Chrome version: **google-chrome --version**



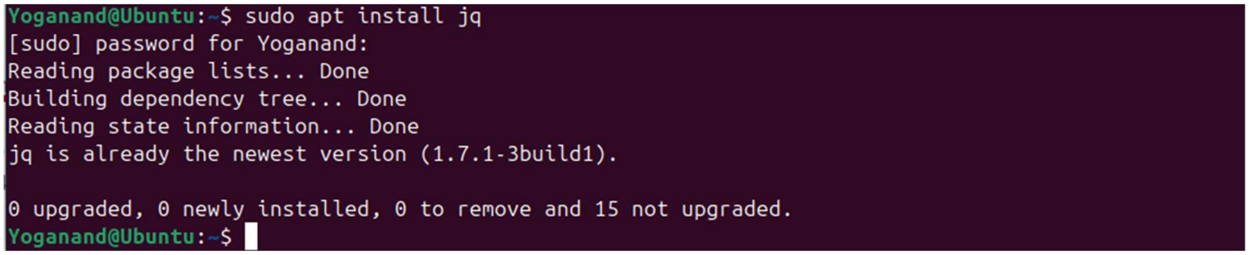
```
Yoganand@Ubuntu:~$ google-chrome --version
Google Chrome 136.0.7103.59
Yoganand@Ubuntu:~$ 
```

Extract the main version:



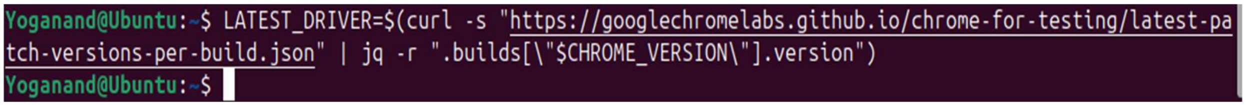
```
Yoganand@Ubuntu:~$ CHROME_VERSION=$(google-chrome --version | awk '{print $3}' | cut -d'.' -f1-3)
Yoganand@Ubuntu:~$
```

b. Install required tool using this command: **sudo apt install jq**



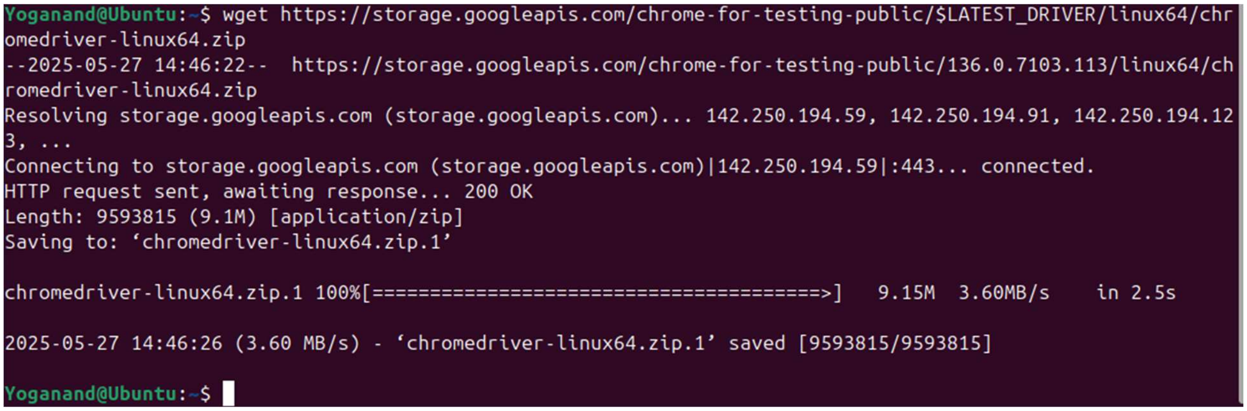
```
Yoganand@Ubuntu:~$ sudo apt install jq
[sudo] password for Yoganand:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
jq is already the newest version (1.7.1-3build1).

0 upgraded, 0 newly installed, 0 to remove and 15 not upgraded.
Yoganand@Ubuntu:~$ 
```

c. Get latest compatible ChromeDriver:



```
Yoganand@Ubuntu:~$ LATEST_DRIVER=$(curl -s "https://googlechromelabs.github.io/chrome-for-testing/latest-pa
tch-versions-per-build.json" | jq -r ".builds[\"$CHROME_VERSION\"].version")
Yoganand@Ubuntu:~$ 
```

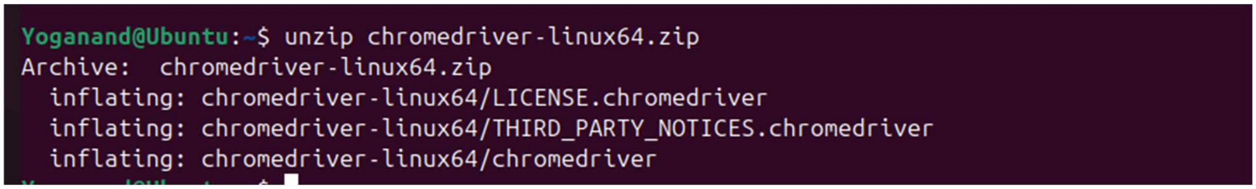
d. Download and extract ChromeDriver:



```
Yoganand@Ubuntu:~$ wget https://storage.googleapis.com/chrome-for-testing-public/$LATEST_DRIVER/linux64/chr
omedriver-linux64.zip
--2025-05-27 14:46:22--  https://storage.googleapis.com/chrome-for-testing-public/136.0.7103.113/linux64/ch
romedriver-linux64.zip
Resolving storage.googleapis.com (storage.googleapis.com)... 142.250.194.59, 142.250.194.91, 142.250.194.12
3, ...
Connecting to storage.googleapis.com (storage.googleapis.com)|142.250.194.59|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 9593815 (9.1M) [application/zip]
Saving to: ‘chromedriver-linux64.zip.1’

chromedriver-linux64.zip.1 100%[=======================================>]   9.15M  3.60MB/s    in 2.5s

2025-05-27 14:46:26 (3.60 MB/s) - ‘chromedriver-linux64.zip.1’ saved [9593815/9593815]

Yoganand@Ubuntu:~$ 
```

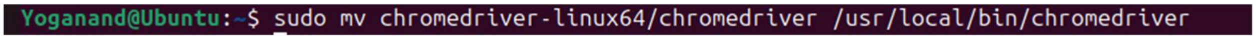
Unzip the File:

Using this command: **unzip chromedriver-linux64.zip**

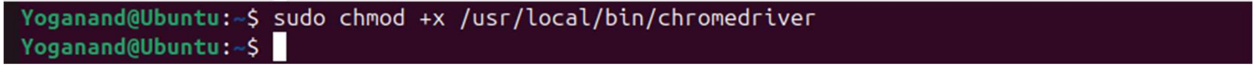


```
Yoganand@Ubuntu:~$ unzip chromedriver-linux64.zip
Archive:  chromedriver-linux64.zip
  inflating: chromedriver-linux64/LICENSE.chromedriver
  inflating: chromedriver-linux64/THIRD_PARTY_NOTICES.chromedriver
  inflating: chromedriver-linux64/chromedriver
```

e. Move ChromeDriver to bin: **sudo mv chromedriver-linux64/chromedriver /usr/local/bin/**

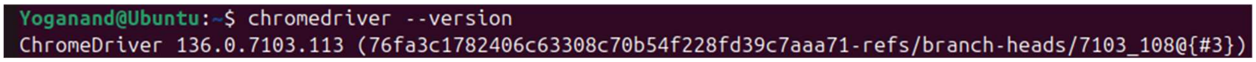


```
Yoganand@Ubuntu:~$ sudo mv chromedriver-linux64/chromedriver /usr/local/bin/chromedriver
```



```
Yoganand@Ubuntu:~$ sudo chmod +x /usr/local/bin/chromedriver
Yoganand@Ubuntu:~$ 
```

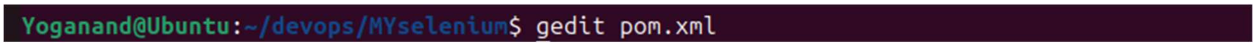
f. Verify installation type following command: **chromedriver --version**



```
Yoganand@Ubuntu:~$ chromedriver --version
ChromeDriver 136.0.7103.113 (76fa3c1782406c63308c70b54f228fd39c7aaa71-refs/branch-heads/7103_108@{#3})
```

Step 4: Update pom.xml with Selenium Dependencies

Run This command: **gedit pom.xml**



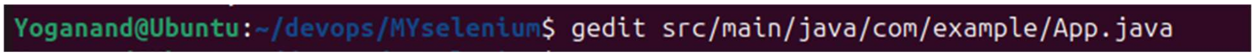
```
Yoganand@Ubuntu:~/devops/MYselenium$ gedit pom.xml
```

Edit the pom.xml file and replace content with the following:

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
        http://maven.apache.org/maven-v4_0_0.xsd">

    <modelVersion>4.0.0</modelVersion>

    <groupId>com.example</groupId>
    <artifactId>MYselenium </artifactId>
    <packaging>jar</packaging>
    <version>1.0-SNAPSHOT</version>
    <name> MYselenium </name>
    <url>http://maven.apache.org</url>

    <dependencies>
        <dependency>
            <groupId>junit</groupId>
            <artifactId>junit</artifactId>
            <version>3.8.1</version>
            <scope>test</scope>
        </dependency>

        <!-- https://mvnrepository.com/artifact/org.seleniumhq.selenium/selenium-java -->
        <dependency>
            <groupId>org.seleniumhq.selenium</groupId>
            <artifactId>selenium-java</artifactId>
            <version>4.29.0</version>
        </dependency>
    </dependencies>
    <!-- Build: Configuring plugins and build settings -->
    <build>
    <!-- Example: Maven Compiler Plugin to compile Java code -->
    <plugins>
      <plugin>
        <groupId>org.apache.maven.plugins</groupId>
        <artifactId>maven-compiler-plugin</artifactId>
        <version>3.8.1</version>
        <configuration>
          <source>1.8</source>
          <target>1.8</target>
        </configuration>
      </plugin>
      <!-- Example: Maven Surefire Plugin to run tests -->
      <!-- (Can be added below if needed) -->
    </plugins>
  </build>
</project>
```

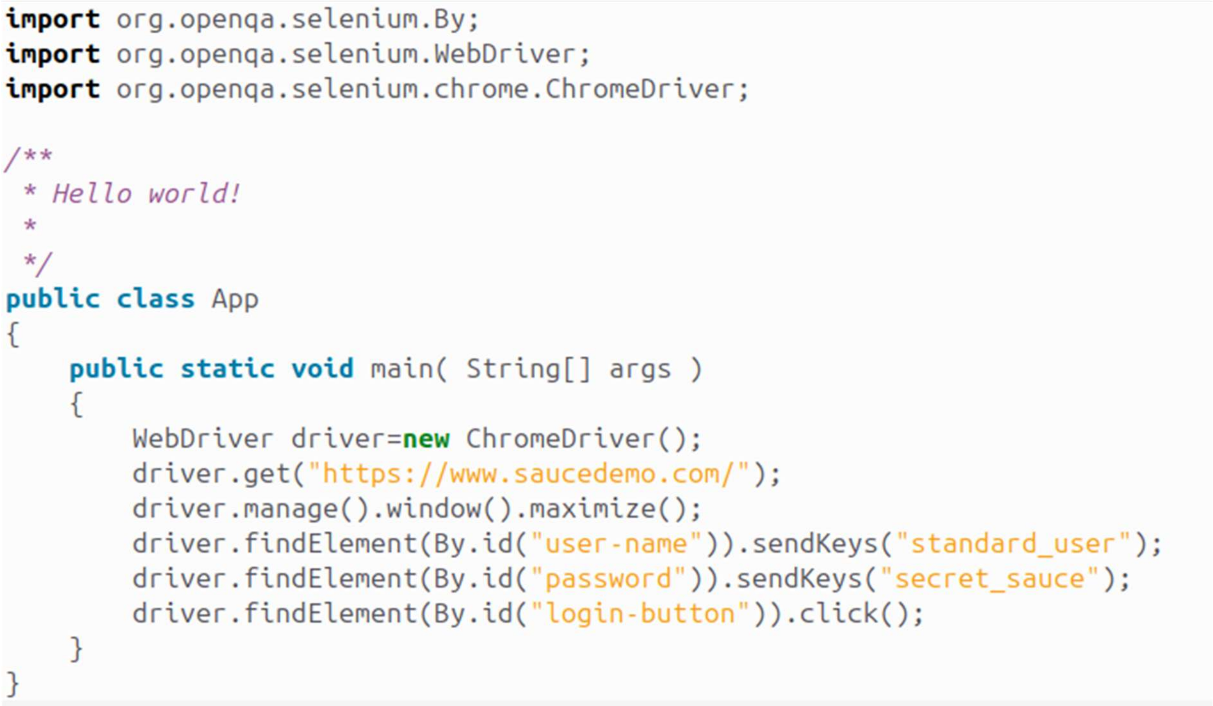
Step 5: Write Selenium Code in App.java

To open the java file run this command**: gedit src/main/java/com/example/App.java**



```
Yoganand@Ubuntu:~/devops/MYselenium$ gedit src/main/java/com/example/App.java
```

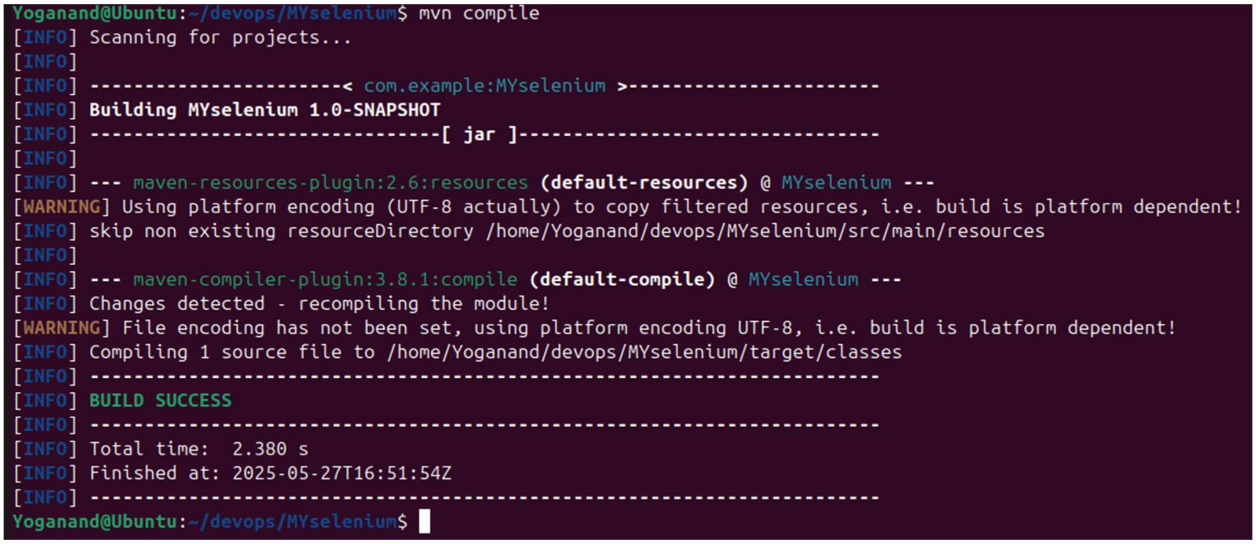
In the file write this code:



```
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;

/**
 * Hello world!
 *
 */
public class App
{
    public static void main( String[] args )
    {
        WebDriver driver=new ChromeDriver();
        driver.get("https://www.saucedemo.com/");
        driver.manage().window().maximize();
        driver.findElement(By.id("user-name")).sendKeys("standard_user");
        driver.findElement(By.id("password")).sendKeys("secret_sauce");
        driver.findElement(By.id("login-button")).click();
    }
}
```

Step 7: Compile the Selenium application

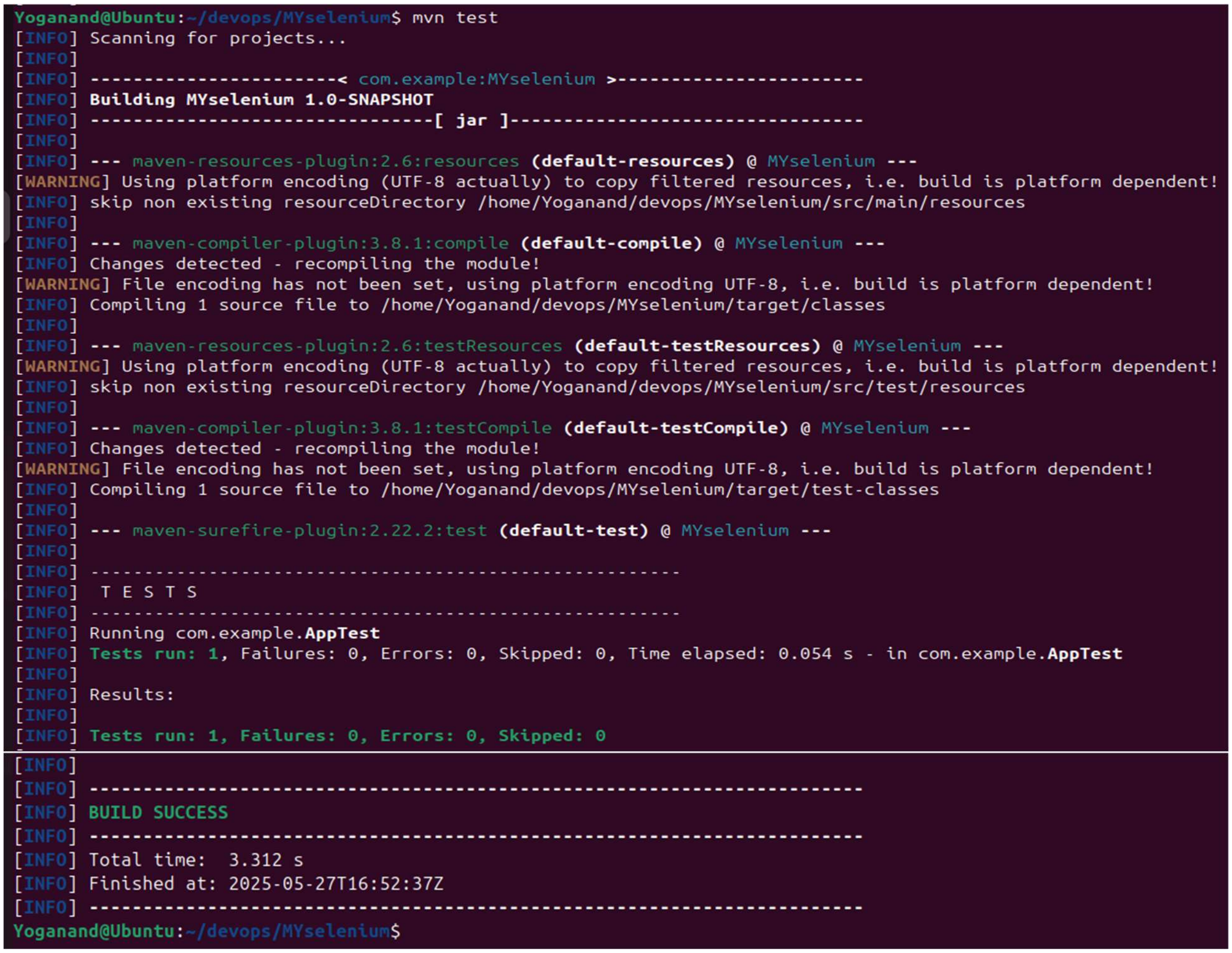
Using the command: **mvn compile**



```
Yoganand@Ubuntu:~/devops/MYselenium$ mvn compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----------------------< com.example:MYselenium >-----------------------
[INFO] Building MYselenium 1.0-SNAPSHOT
[INFO] --------------------------------[ jar ]---------------------------------
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ MYselenium ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory /home/Yoganand/devops/MYselenium/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.1:compile (default-compile) @ MYselenium ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to /home/Yoganand/devops/MYselenium/target/classes
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  2.380 s
[INFO] Finished at: 2025-05-27T16:51:54Z
[INFO] ------------------------------------------------------------------------
Yoganand@Ubuntu:~/devops/MYselenium$
```

Step 8: Testing the Selenium Application

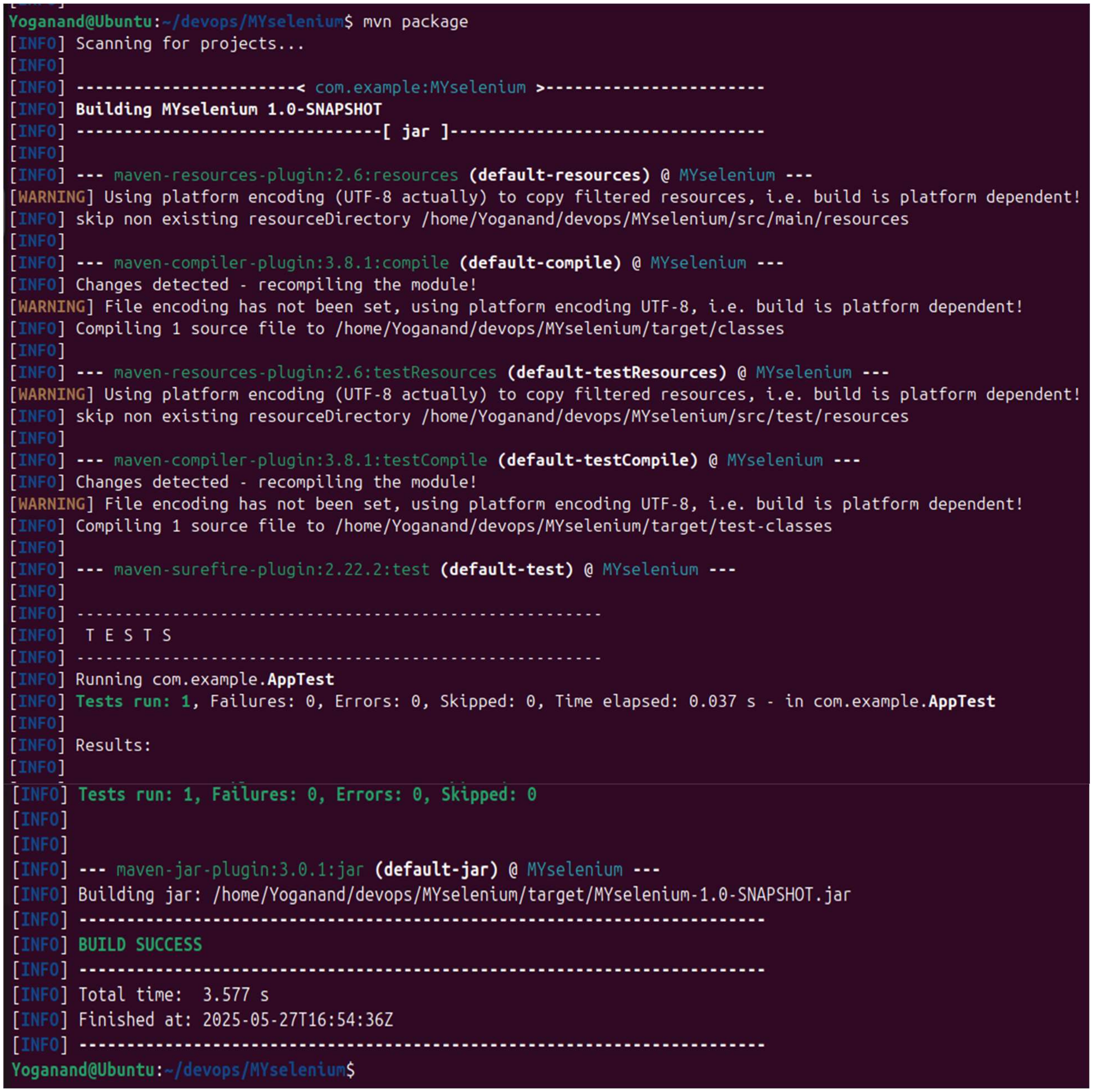
Using this command: **mvn test**



```
Yoganand@Ubuntu:~/devops/MYselenium$ mvn test
[INFO] Scanning for projects...
[INFO]
[INFO] -----------------------< com.example:MYselenium >-----------------------
[INFO] Building MYselenium 1.0-SNAPSHOT
[INFO] --------------------------------[ jar ]---------------------------------
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ MYselenium ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory /home/Yoganand/devops/MYselenium/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.1:compile (default-compile) @ MYselenium ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to /home/Yoganand/devops/MYselenium/target/classes
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ MYselenium ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory /home/Yoganand/devops/MYselenium/src/test/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.1:testCompile (default-testCompile) @ MYselenium ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to /home/Yoganand/devops/MYselenium/target/test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ MYselenium ---
[INFO]
[INFO] -------------------------------------------------------
[INFO]  T E S T S
[INFO] -------------------------------------------------------
[INFO] Running com.example.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.054 s - in com.example.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  3.312 s
[INFO] Finished at: 2025-05-27T16:52:37Z
[INFO] ------------------------------------------------------------------------
Yoganand@Ubuntu:~/devops/MYselenium$
```

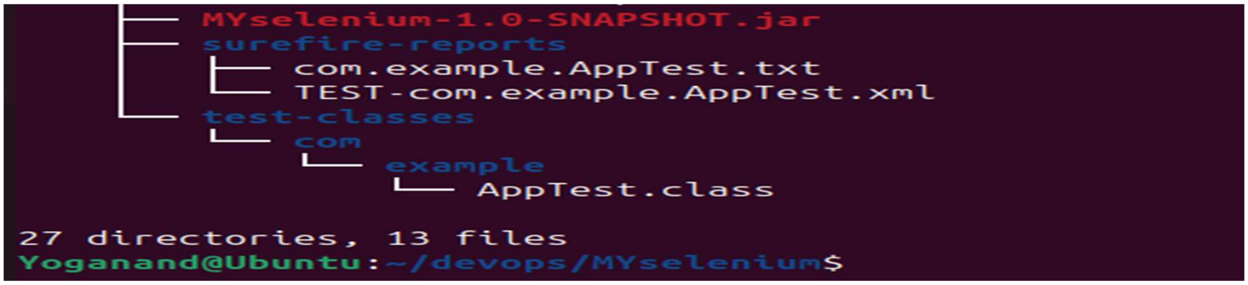
Step 9: Running the Selenium Application

Using command: **mvn package**



```
Yoganand@Ubuntu:~/devops/MYselenium$ mvn package
[INFO] Scanning for projects...
[INFO]
[INFO] ----------------------< com.example:MYselenium >----------------------
[INFO] Building MYselenium 1.0-SNAPSHOT
[INFO] --------------------------------[ jar ]--------------------------------
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ MYselenium ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory /home/Yoganand/devops/MYselenium/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.1:compile (default-compile) @ MYselenium ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to /home/Yoganand/devops/MYselenium/target/classes
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ MYselenium ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory /home/Yoganand/devops/MYselenium/src/test/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.1:testCompile (default-testCompile) @ MYselenium ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to /home/Yoganand/devops/MYselenium/target/test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ MYselenium ---
[INFO]
[INFO] -------------------------------------------------------
[INFO]  T E S T S
[INFO] -------------------------------------------------------
[INFO] Running com.example.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.037 s - in com.example.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] --- maven-jar-plugin:3.0.1:jar (default-jar) @ MYselenium ---
[INFO] Building jar: /home/Yoganand/devops/MYselenium/target/MYselenium-1.0-SNAPSHOT.jar
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  3.577 s
[INFO] Finished at: 2025-05-27T16:54:36Z
[INFO] ------------------------------------------------------------------------
Yoganand@Ubuntu:~/devops/MYselenium$
```

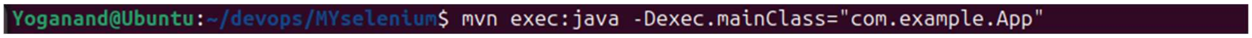
Step10: Check the location of JAR file created by **tree** command.



```
    ├── MYselenium-1.0-SNAPSHOT.jar
    ├── surefire-reports
    │   ├── com.example.AppTest.txt
    │   └── TEST-com.example.AppTest.xml
    └── test-classes
        └── com
            └── example
                └── AppTest.class

27 directories, 13 files
Yoganand@Ubuntu:~/devops/MYselenium$
```

Step 11: Run the following command to run the JAR file:

Using this command: **Mvn exec:java -Dexec.mainClass=”com.example.APP”**

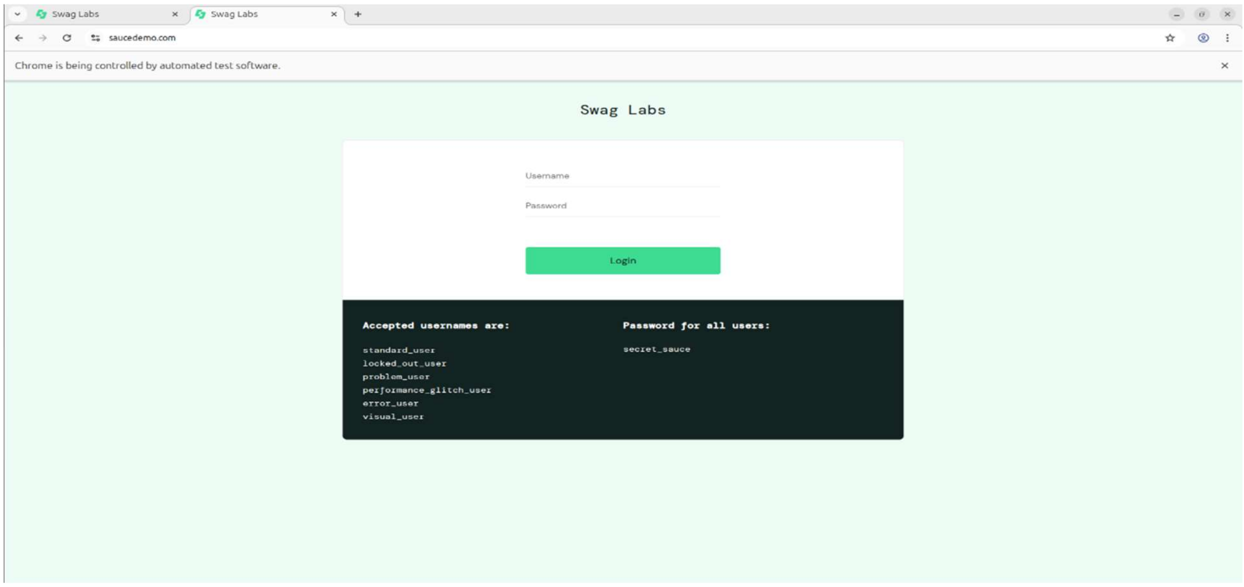


```
Yoganand@Ubuntu:~/devops/MYselenium$ mvn exec:java -Dexec.mainClass="com.example.App"
```

Step 9: Output and Observation

When run, the browser opens and:

- Loads the login page of SauceDemo
- Fills in username and password
- Clicks the login button
- Redirects to the products page (on success)

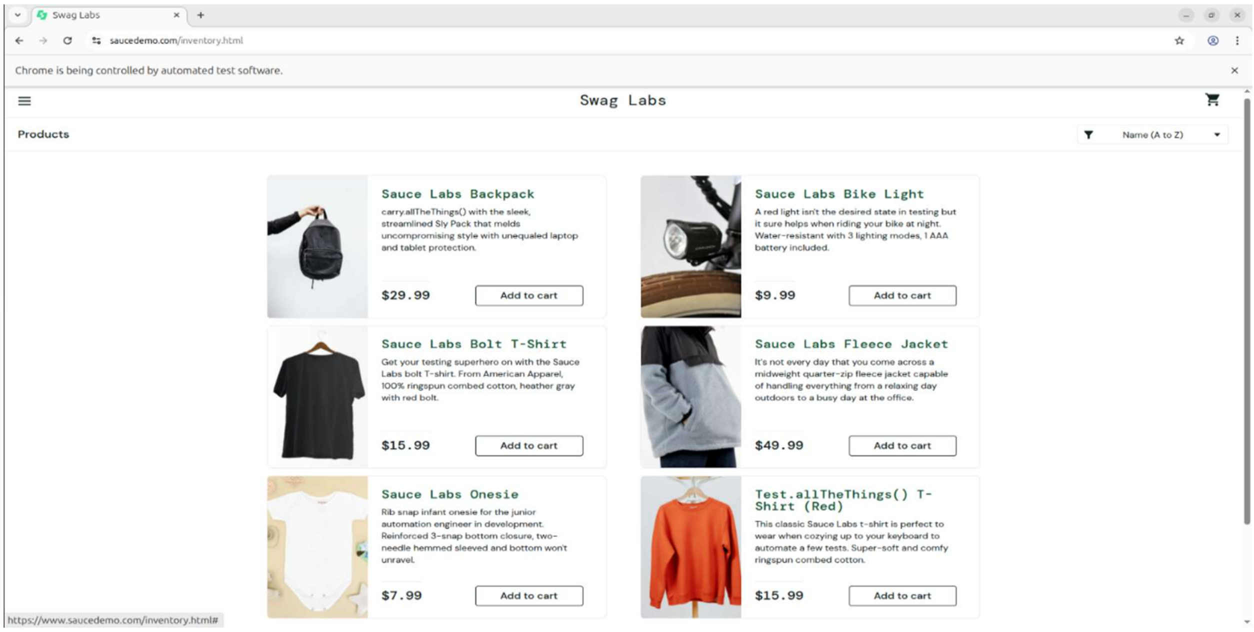


Chrome is being controlled by automated test software.

Swag Labs

```
Accepted usernames are:

standard_user
locked_out_user
problem_user
performance_glitch_user
error_user
visual_user
```

```
Password for all users:

secret_sauce
```


Swag Labs
saucedemo.com/inventory.html
Name (A to Z)
Add to cart
https://www.saucedemo.com/inventory.html#

Chrome is being controlled by automated test software.

Swag Labs

Products

Sauce Labs Backpack
carry.allTheThings() with the sleek, streamlined Sly Pack that melds uncompromising style with unequaled laptop and tablet protection.
$29.99

Sauce Labs Bike Light
A red light isn't the desired state in testing but it sure helps when riding your bike at night. Water-resistant with 3 lighting modes, 1 AAA battery included.
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Sauce Labs Bolt T-Shirt
Get your testing superhero on with the Sauce Labs bolt T-shirt. From American Apparel, 100% ringspun combed cotton, heather gray with red bolt.
$15.99

Sauce Labs Fleece Jacket
It's not every day that you come across a midweight quarter-zip fleece jacket capable of handling everything from a relaxing day outdoors to a busy day at the office.
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Sauce Labs Onesie
Rib snap infant onesie for the junior automation engineer in development. Reinforced 3-snap bottom closure, two-needle hemmed sleeved and bottom won't unravel.
$7.99

Test.allTheThings() T-Shirt (Red)
This classic Sauce Labs t-shirt is perfect to wear when cozying up to your keyboard to automate a few tests. Super-soft and comfy ringspun combed cotton.
$15.99