pom.xml

```xml
<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/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>com.demo</groupId>
  <artifactId>LoginBDD</artifactId>
  <version>1.0-SNAPSHOT</version>

  <properties>
    <maven.compiler.source>1.8</maven.compiler.source>
    <maven.compiler.target>1.8</maven.compiler.target>
  </properties>

  <dependencies>
    <dependency>
      <groupId>io.cucumber</groupId>
      <artifactId>cucumber-java</artifactId>
      <version>7.11.0</version>
      <scope>test</scope>
    </dependency>
    <dependency>
      <groupId>io.cucumber</groupId>
      <artifactId>cucumber-junit</artifactId>
      <version>7.11.0</version>
      <scope>test</scope>
    </dependency>
    <dependency>
      <groupId>org.seleniumhq.selenium</groupId>
      <artifactId>selenium-java</artifactId>
```

```xml
      <version>4.8.3</version>
    </dependency>
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>4.13.2</version>
      <scope>test</scope>
    </dependency>
  </dependencies>

  <build>
    <plugins>
      <plugin>
        <groupId>org.apache.maven.plugins</groupId>
        <artifactId>maven-surefire-plugin</artifactId>
        <version>3.0.0-M7</version>
        <configuration>
          <includes>
            <include>**/TestRunner.java</include>
          </includes>
        </configuration>
      </plugin>
    </plugins>
  </build>
</project>
```

Login.feature

Feature: User Login

  Scenario: Successful login with valid credentials
    Given I launch the login page
    When I enter valid credentials
    And I click login

Then I should see a secure area message

Scenario: Unsuccessful login with invalid credentials

Given I launch the login page

When I enter invalid credentials

And I click login

Then I should see an error message

<u>Hooks.java</u>

```java
package stepdefs;

import io.cucumber.java.*;
import org.openqa.selenium.*;
import org.openqa.selenium.chrome.ChromeDriver;

public class Hooks {
  public static WebDriver driver;

  @Before(order = 0)
  public void logStart() {
    System.out.println("script start execution when execution start");
  }

  @Before(order = 1)
  public void setup() {
    System.setProperty(
      "webdriver.chrome.driver",
      "C:/tools/chromedriver/chromedriver.exe"
    );
    driver = new ChromeDriver();
    driver.manage().window().maximize();
  }

  @After(order = 1)
```

```java
    public void teardown() {
        if (driver != null) {
            driver.quit();
        }
    }


    @After(order = 0)
    public void logEnd() {
        System.out.println("script End execution when execution End");
    }
}
```

LoginSteps.java

```java
package stepdefs;

import io.cucumber.java.en.*;
import org.junit.Assert;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;

public class LoginSteps {
    // reuse the driver from Hooks
    private final WebDriver driver = Hooks.driver;

    @Given("I launch the login page")
    public void launchLoginPage() {
        driver.get("https://the-internet.herokuapp.com/login");
    }

    @When("I enter valid credentials")
    public void validCredentials() {
        driver.findElement(By.id("username")).sendKeys("tomsmith");
        driver.findElement(By.id("password")).sendKeys("SuperSecretPassword!");
```

```java
    }

    @When("I enter invalid credentials")
    public void invalidCredentials() {
        driver.findElement(By.id("username")).sendKeys("baduser");
        driver.findElement(By.id("password")).sendKeys("badpass");
    }

    @And("I click login")
    public void clickLogin() {
        driver.findElement(By.cssSelector("button[type='submit']")).click();
    }

    @Then("I should see a secure area message")
    public void secureAreaMessage() {
        String text = driver.findElement(By.id("flash")).getText();
        Assert.assertTrue(text.contains("You logged into a secure area!"));
    }

    @Then("I should see an error message")
    public void errorMessage() {
        String text = driver.findElement(By.id("flash")).getText();
        Assert.assertTrue(text.contains("Your username is invalid!"));
    }
}
```

TestRunner.java

```java
package testrunner;

import io.cucumber.junit.*;
import org.junit.runner.RunWith;

@RunWith(Cucumber.class)
```
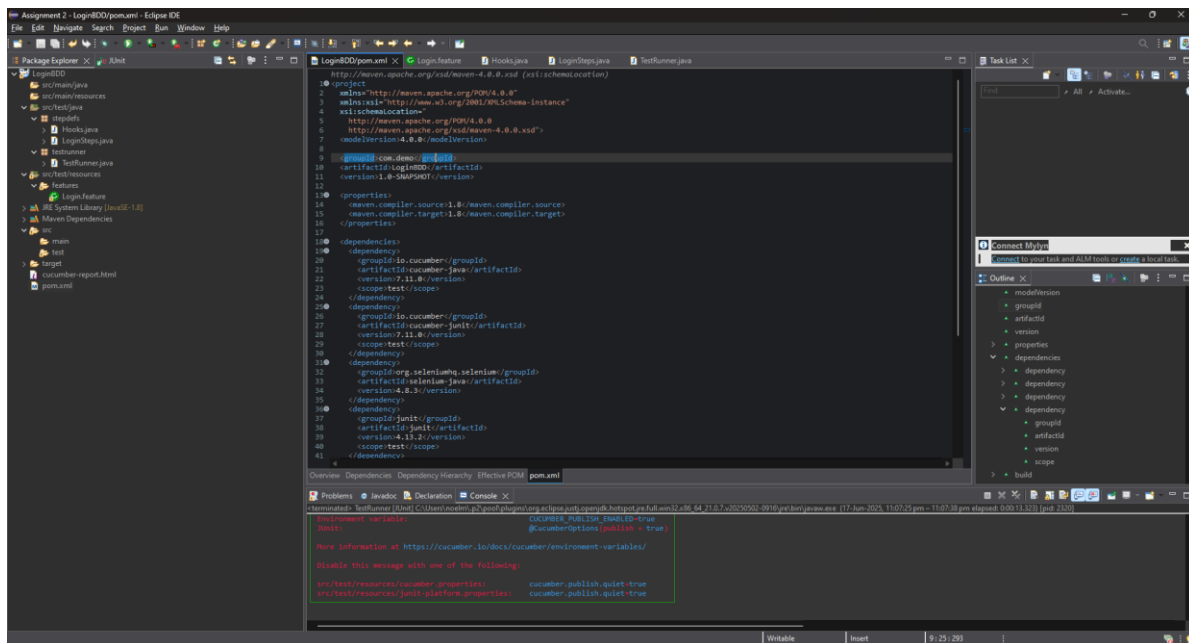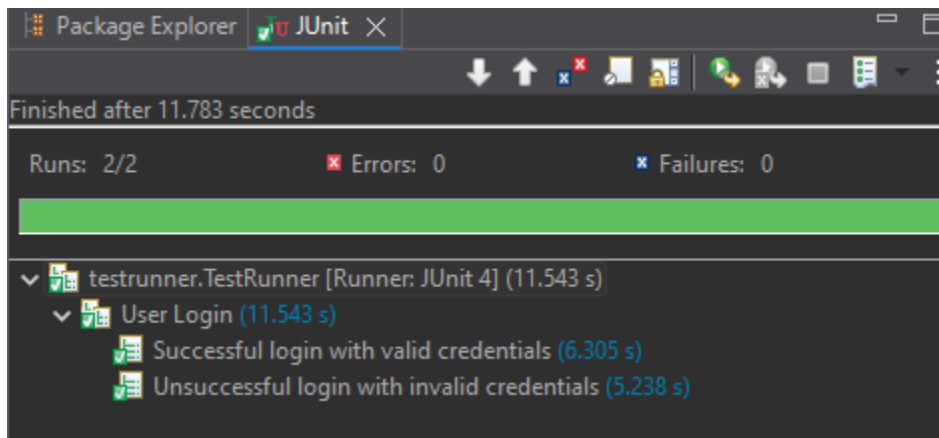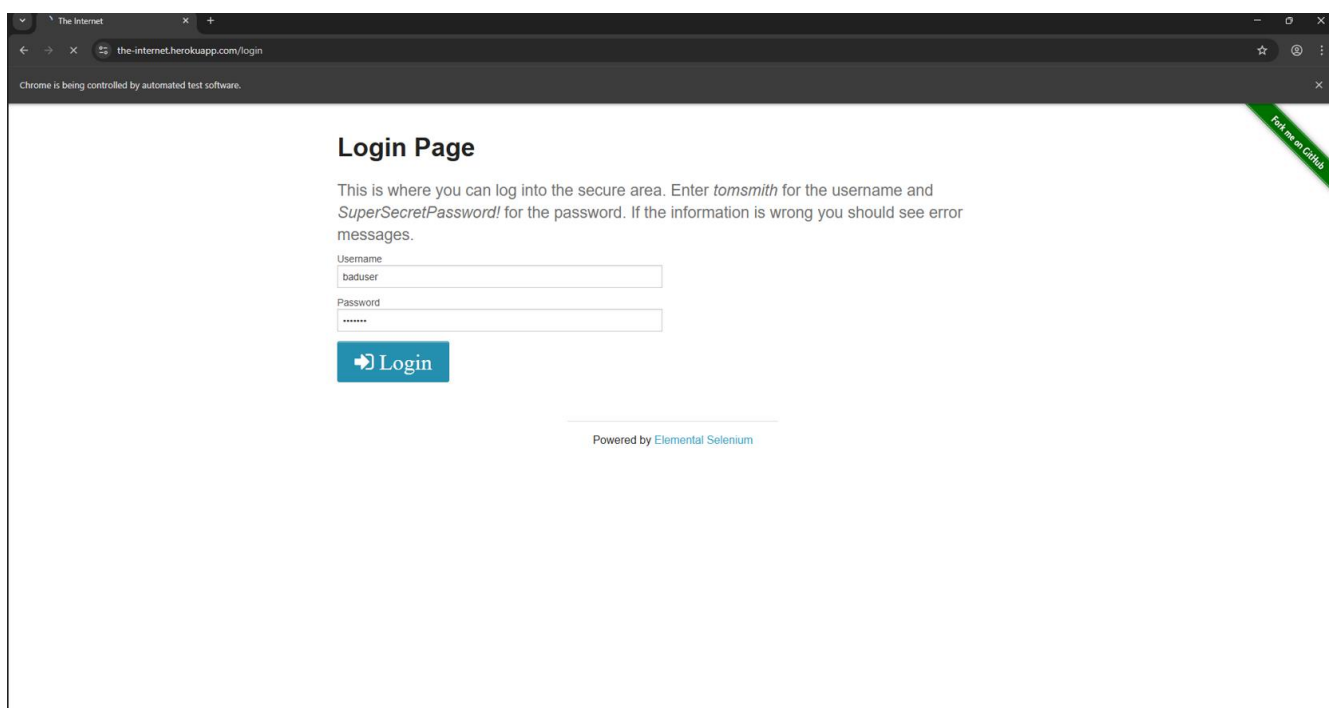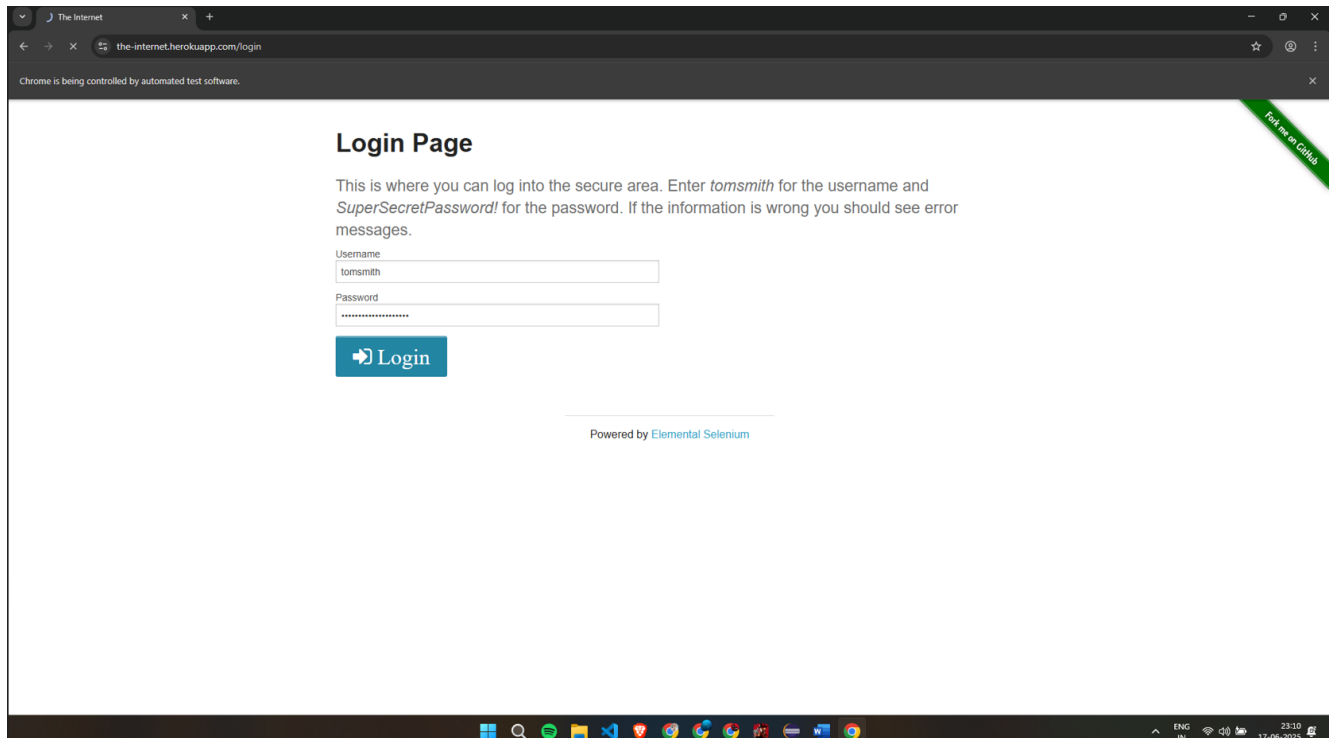
@CucumberOptions(

  features = "src/test/resources/features",

  glue   = "stepdefs",

  plugin   = {"pretty","html:target/cucumber-report.html"}

)

public class TestRunner { }

Output Screenshots

Login Page

This is where you can log into the secure area. Enter *tomsmith* for the username and *SuperSecretPassword!* for the password. If the information is wrong you should see error messages.

Username
tomsmith

Password
•••••••••••••••••••

➜] Login

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Login Page

This is where you can log into the secure area. Enter *tomsmith* for the username and *SuperSecretPassword!* for the password. If the information is wrong you should see error messages.

Username
baduser

Password
•••••••

➜] Login

Powered by Elemental Selenium

```
<terminated> TestRunner [JUnit] C:\Users\noelm\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_21.0.7.v20250502-0916\jre\bin\javaw.exe  (17-Jun-2025, 11:10:08 pm – 11:10:21 pm elapsed: 0:00:13.251) [pid: 3432]
Scenario: Unsuccessful login with invalid credentials # src/test/resources/features/Login.feature:9
script start execution when execution start
Starting ChromeDriver 137.0.7151.70 (dfa4dc56b2abb56eb2a14cad006ea5e68c60d5de-refs/branch-heads/7151@{#1875}) on port 39715
Only local connections are allowed.
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver safe.
ChromeDriver was started successfully on port 39715.
Jun 17, 2025 11:10:16 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch
WARNING: Unable to find CDP implementation matching 137
Jun 17, 2025 11:10:16 PM org.openqa.selenium.chromium.ChromiumDriver lambda$new$3
WARNING: Unable to find version of CDP to use for . You may need to include a dependency on a specific version of the CDP using something similar to `org.seleniumhq.selenium:selenium-devtools-v86:4.8.3`
  Given I launch the login page                          # stepdefs.LoginSteps.launchLoginPage()
  When I enter invalid credentials                       # stepdefs.LoginSteps.invalidCredentials()
  And I click login                                      # stepdefs.LoginSteps.clickLogin()
  Then I should see an error message                     # stepdefs.LoginSteps.errorMessage()
      31morg.openqa.selenium.NoSuchElementException: no such element: Unable to locate element: {"method":"css selector","selector":"#flash"}
  (Session info: chrome=137.0.7151.104)
For documentation on this error, please visit: https://selenium.dev/exceptions/#no_such_element
Build info: version: '4.8.3', revision: 'e5e76298c3'
System info: os.name: 'Windows 11', os.arch: 'amd64', os.version: '10.0', java.version: '21.0.7'
Driver info: org.openqa.selenium.chrome.ChromeDriver
Command: [2aa9f405925181448f08169e4677de47, findElement (using=id, value=flash)]
Capabilities {acceptInsecureCerts: false, browserName: chrome, browserVersion: 137.0.7151.104, chrome: {chromedriverVersion: 137.0.7151.70 (dfa4dc56b2ab..., userDataDir: C:\Users\noelm\AppData\Loca...},
Session ID: 2aa9f405925181448f08169e4677de47
    at java.base/jdk.internal.reflect.DirectConstructorHandleAccessor.newInstance(DirectConstructorHandleAccessor.java:62)
    at java.base/java.lang.reflect.Constructor.newInstanceWithCaller(Constructor.java:502)
    at java.base/java.lang.reflect.Constructor.newInstance(Constructor.java:486)
    at org.openqa.selenium.remote.codec.w3c.W3CHttpResponseCodec.createException(W3CHttpResponseCodec.java:200)
    at org.openqa.selenium.remote.codec.w3c.W3CHttpResponseCodec.decode(W3CHttpResponseCodec.java:133)
    at org.openqa.selenium.remote.codec.w3c.W3CHttpResponseCodec.decode(W3CHttpResponseCodec.java:53)
    at org.openqa.selenium.remote.HttpCommandExecutor.execute(HttpCommandExecutor.java:193)
    at org.openqa.selenium.remote.service.DriverCommandExecutor.invokeExecute(DriverCommandExecutor.java:183)
    at org.openqa.selenium.remote.service.DriverCommandExecutor.execute(DriverCommandExecutor.java:158)
    at org.openqa.selenium.remote.RemoteWebDriver.execute(RemoteWebDriver.java:543)
    at org.openqa.selenium.remote.ElementLocation$ElementFinder$2.findElement(ElementLocation.java:162)
    at org.openqa.selenium.remote.ElementLocation.findElement(ElementLocation.java:60)
    at org.openqa.selenium.remote.RemoteWebDriver.findElement(RemoteWebDriver.java:352)
    at org.openqa.selenium.remote.RemoteWebDriver.findElement(RemoteWebDriver.java:344)
    at stepdefs.LoginSteps.errorMessage(LoginSteps.java:42)
    at ✦.I should see an error message(file:///C:/Users/noelm/Downloads/IBM%20Consulting/TECHADEMY/Phase%202/_4.%20Cucumber%20BDD%20Made%20Easy%20:%20Automation%20Framework%20Design/Assignment%202/Lo

script End execution when execution End


Share your Cucumber Report with your team at https://reports.cucumber.io
Activate publishing with one of the following:

src/test/resources/cucumber.properties:          cucumber.publish.enabled=true
src/test/resources/junit-platform.properties:    cucumber.publish.enabled=true
Environment variable:                            CUCUMBER_PUBLISH_ENABLED=true
JUnit:                                           @CucumberOptions(publish = true)

More information at https://cucumber.io/docs/cucumber/environment-variables/
```