

# **SOFTWARE VERIFICATION, VALIDATION AND TESTING**

## **TESTING DOCUMENTATION**

PROJECT NAME

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Date of submission

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# 1. Introduction

In order to assist browser automation, a variety of tools and frameworks are housed under the open-source Selenium project. Without having to understand a test scripting language, it provides a playback tool for creating functional tests that work across the majority of current web browsers (Selenium IDE). Additionally, it offers the ability to create tests in a variety of well-known programming languages, such as JavaScript (Node.js), C#, Groovy, Java, Perl, PHP, Python, Ruby, and Scala, using a test domain-specific language called Selene. Linux, macOS, and Windows all support Selenium. It is Apache License 2.0-licensed open-source software.

Our task was to combine the knowledge that we have received throughout lessons and lab sessions, that has to do with Selenium in Java, to incorporate it into our project. We were given the choice to pick a website to work on and our pick was gog.com, a digital distribution platform.

## 1.1. About the Project

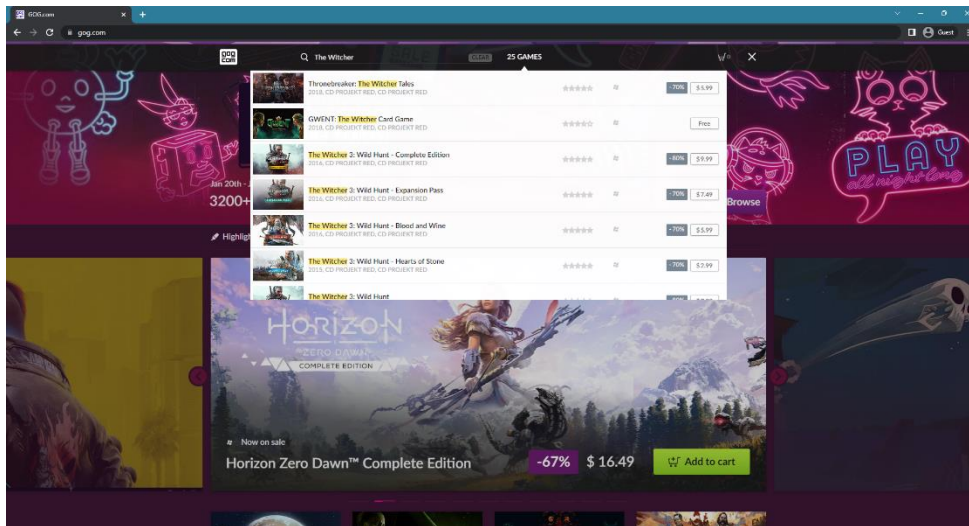
The project was to, as I have mentioned before, test the functionalities of gog.com. The platform itself is pretty well-known and a lot of people use it. So, our goal was to test out the features using automation and to see if there are any issues with it as well.

The tests themselves can be considered as something a regular customer would do on the site, like download gog galaxy, adding and removing games to the cart, remove them, go to some of the other stuff that they offer, such as a link to their twitch website, also sorting elements by genre and setting a range in the price as well.

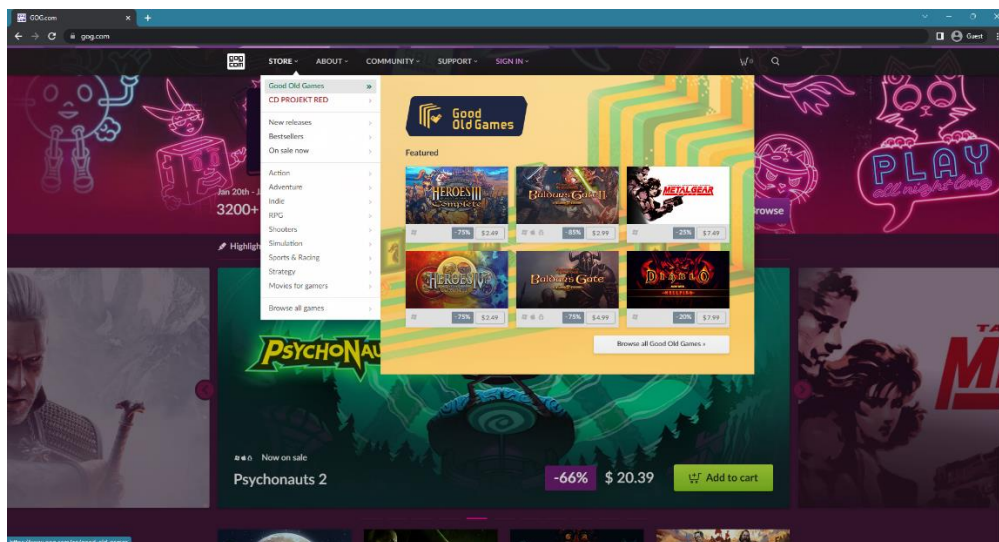
## 1.2. Project Functionalities and Screenshots.

Searching games, adding and removing games to and from the cart, downloading their software (gog galaxy), making an account, wishlisting games, searching for certain sales, looking up on the forums, looking at the most streamed games, news about certain games and their release dates, special deals.

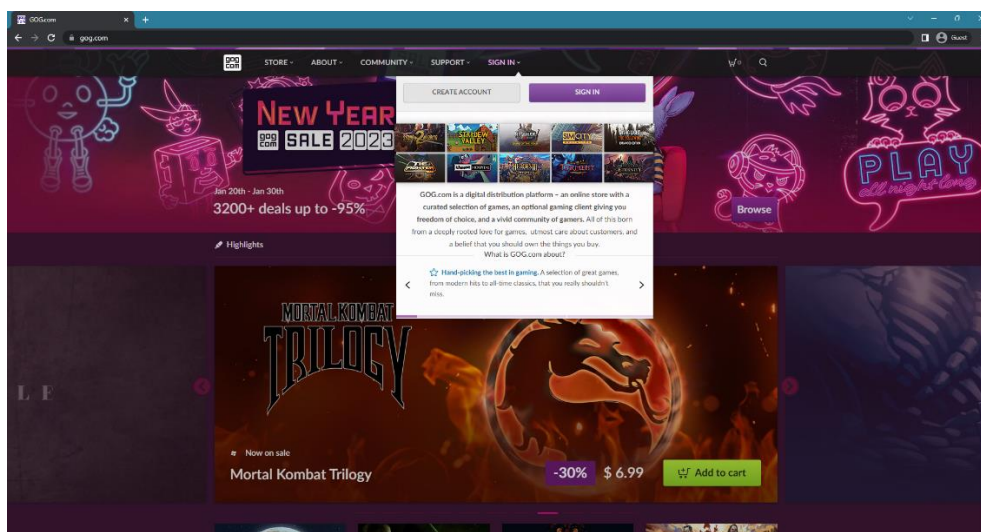
GOG, which is supported by CD Projekt Red, also lets you submit your own game to the site at the bottom of the page. They also let you change your language and also contact support.



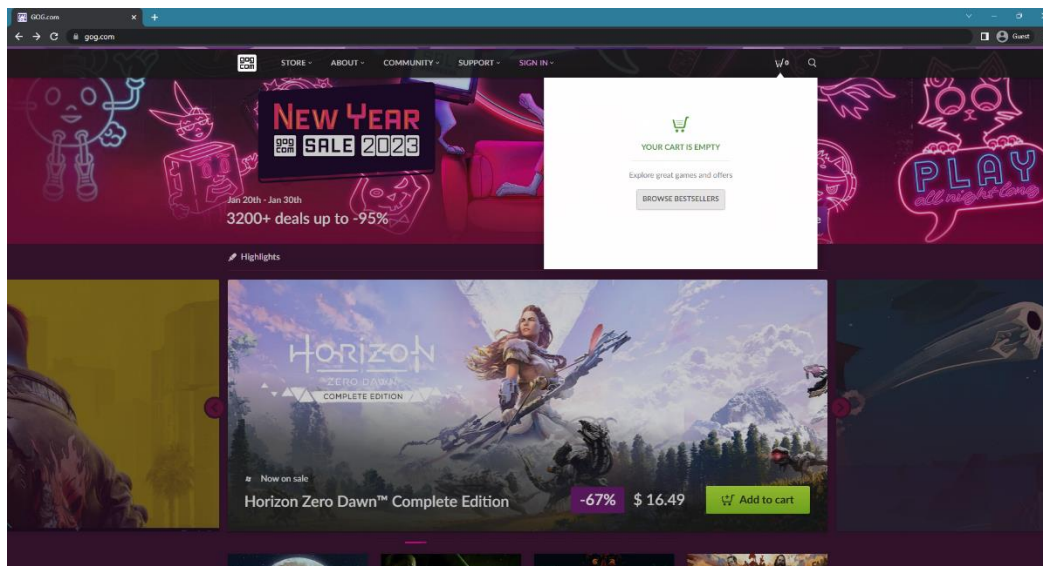
Picture 1. Search option for games



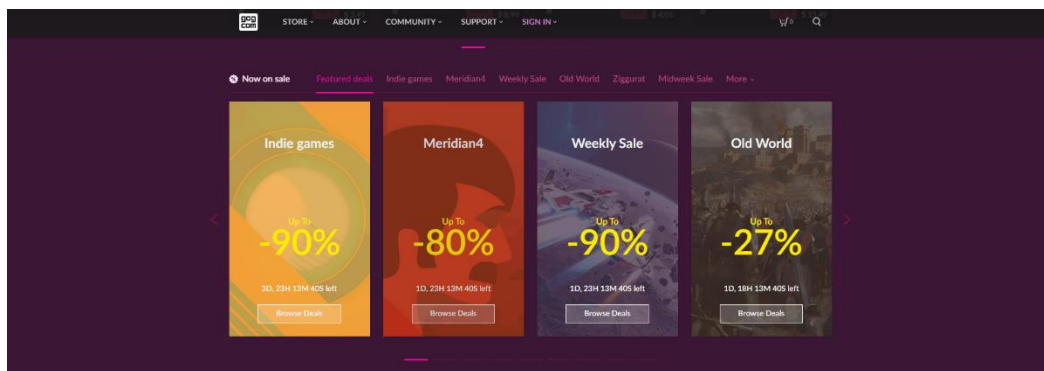
Picture 2. Going through the various sections of the store



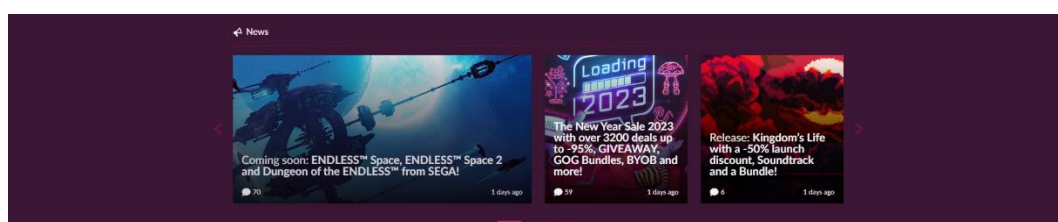
Picture 3. The Sign in screen



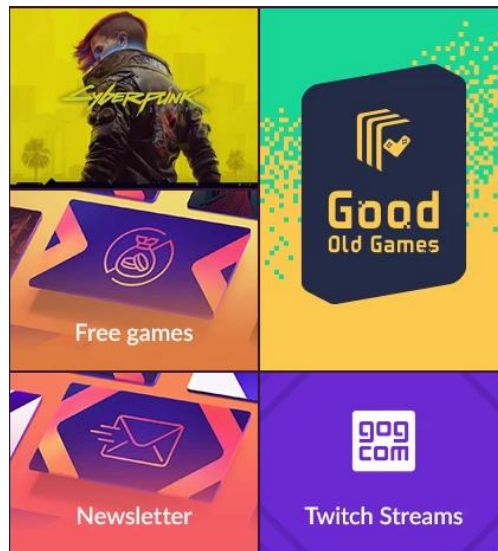
Picture 4. Showcase of the cart on the site



Picture 5. Various game deals that the site offers for a limited time



Picture 6. The news section of the site



Picture 7. Various links to other activities that the website offers

## 2. Test Plan

### 2.1. Scope

The goal was to test all of the functional parts of the website, which means that we tested everything a regular user would. Unfortunately, some tests could not be made because of the security restrictions the site has, the main one being the sign up system.

### 2.2. Testing Environment and Tools

Java programming language, JUnit, Selenium for Java and the Google Chrome Driver were used for conducting the tests on this website.

## 3. Test Execution

The parts of the website that were tested were the most common, vital ones, that every user would at some point use. We are going to present the following test scenarios in the following subsection, which will describe the scenarios in great detail.

### 3.1. Scenario: Open the Game Window, Click On the Left Arrow Twice And Click On A Game

This test has to deal with the highlights right at the top of the page, where we can see a lot of the game titles. We decided to test that, since it does seem really well designed and should serve its purpose

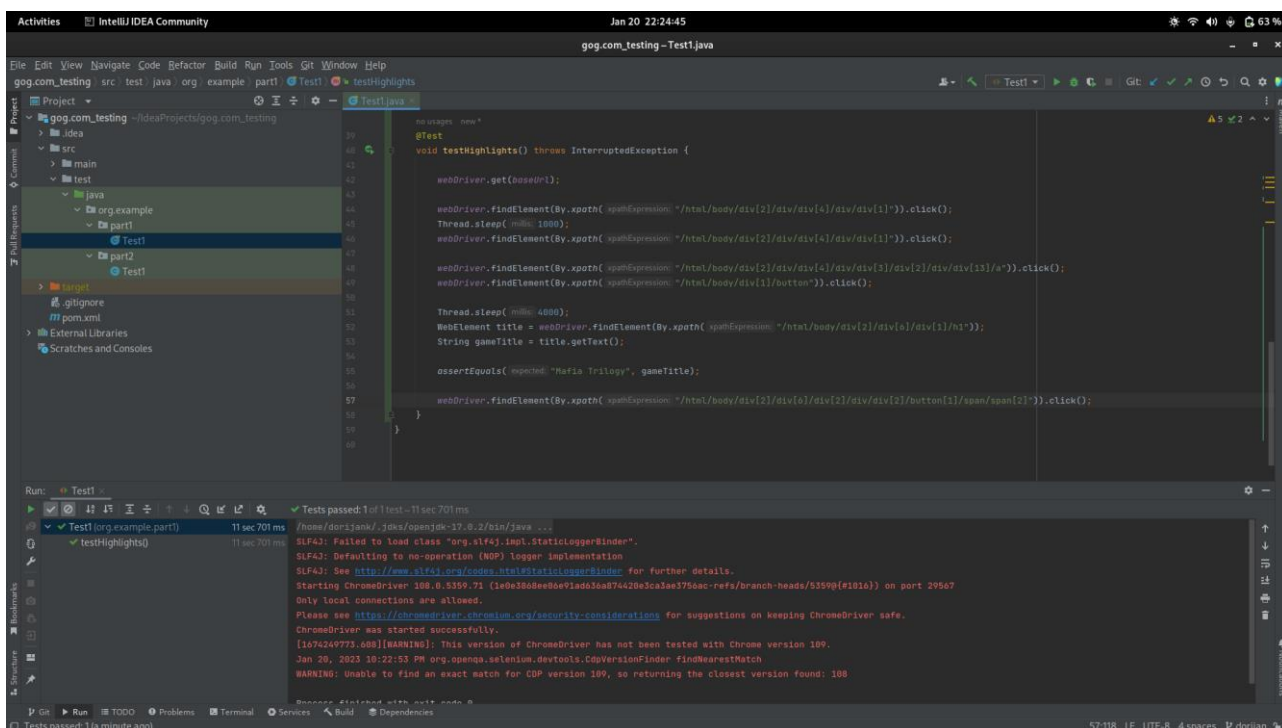


**Test Name: Test highlights**

**Description:** Test the highlights section, click on the arrows, choose a game, see if we get the game that we wanted.

**Pre-condition(s):**

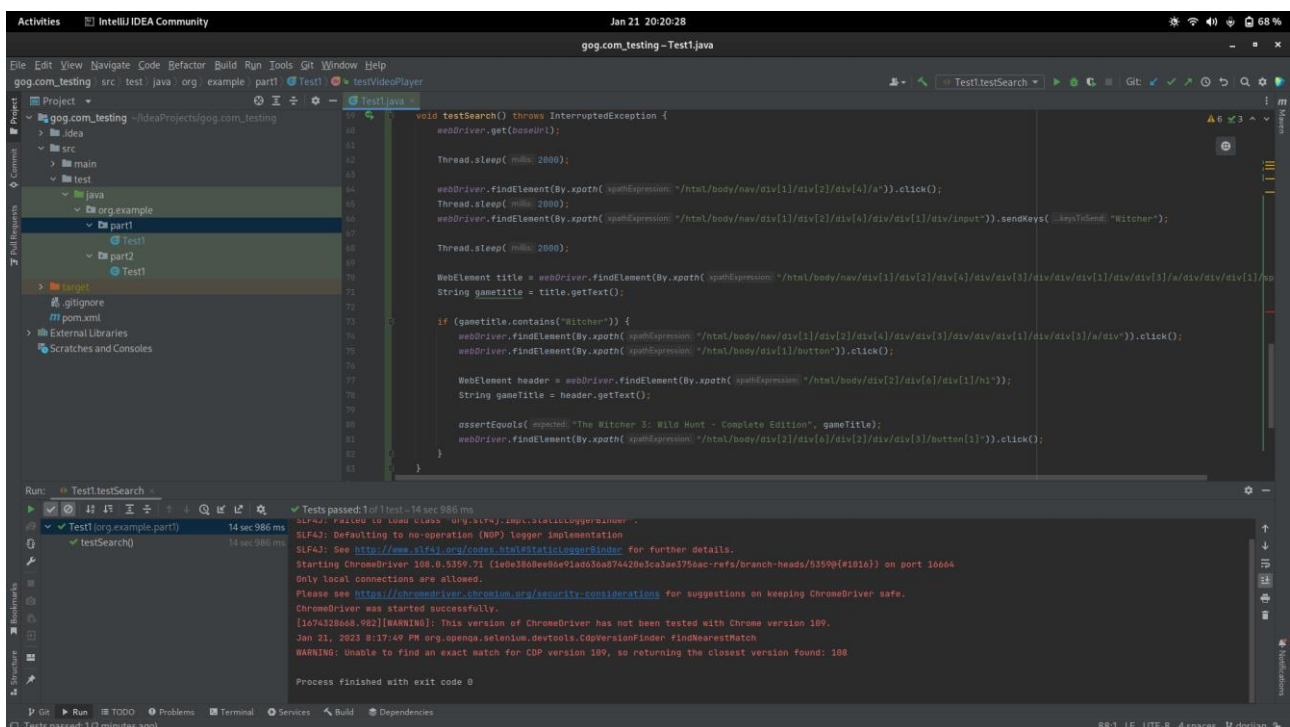
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Get the base URL 2. Click on the left arrow 3. Click on the left arrow 4. Choose Mafia Trilogy title 5. Check if the name matches 6. Add to cart	- no test data	Adding the game to the cart at the end	The game was added to the cart in the end	PASS



### 3.2. Scenario: Visit the Home Page

The search function should be tested, in order to ensure that the users can search for their favorite games that the site offers

<b>Test Name:</b> The search function				
<b>Description:</b> Check if the search function works				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b>	<b>Test Data:</b>	<b>Expected Result:</b>	<b>Actual Result:</b>	<b>Status:</b>
1. Go to the main page 2. Click on the search icon 3. Type in Witcher 3: Enhanced Edition 4. If the game is Witcher 3, click on it. 5. Go to the game's page 6. Check if the titles match		Search for the game and see if the titles match	Search for the game and see if the titles match	PASS
<b>Notes:</b>				

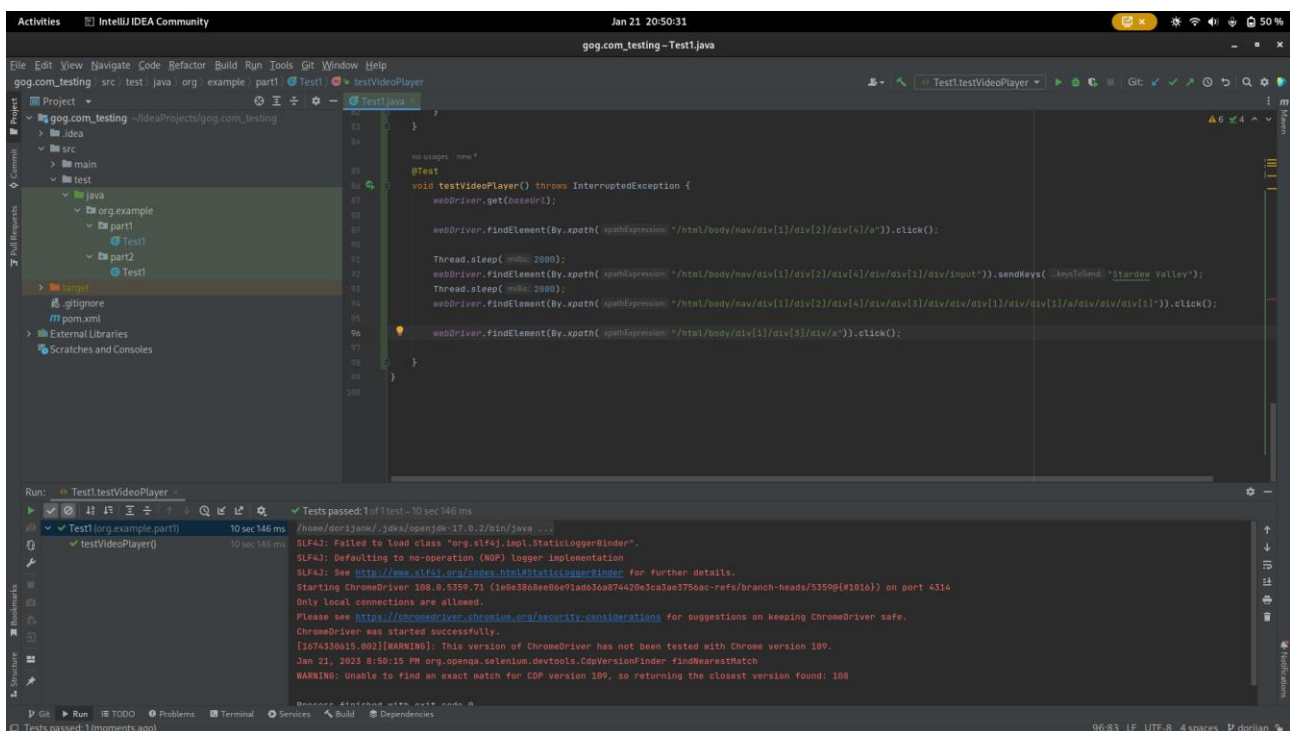




### 3.3. Scenario: Add a Game in the Cart and Check If It Is In the Cart

Users might want to see some of the in-game footage before they buy the game, so this test deals with that problem, to see if users can actually play the video without any issues

<b>Test Name:</b> Video Player				
<b>Description:</b> Go to the search bar, enter Stardew Valley and see if the video plays				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b>  1. Go to the Search bar 2. Type in “Stardew Valley” 3. Click on the video player and see if it loads	<b>Test Data:</b>	<b>Expected Result:</b>  The video should play	<b>Actual Result:</b>  The video on the game plays	<b>Status:</b>  PASS
<b>Notes:</b>				



### 3.4. Scenario: Count the Games in the Cart

We want to check if the cart operates as intended and if the games that we added stay saved in the cart itself

Test Name: Cart Game Count				
Description: Go to the games tab, add 3 games to the cart and see if the number of items is equal to 3				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the games tab 2. Hover over the item 3. Click on the item 4. Add to Cart 5. Go back 6. Hover over the item 7. Click on the item 8. Add to Cart 9. Go back 10. Hover over the item 11. Click on the item 12. Add to Cart 13. Go back 14. Click on the cart 15. Check if the cart has 3 items		The cart should contain 3 items	The cart contains 3 items	PASS
Notes:				

```
void TestGamesCountInCart() throws InterruptedException {
    Actions action = new Actions(webDriver);
    webDriver.get(baseUrl);
    action.moveToElement(webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]"))).perform();
    Thread.sleep(1000);

    webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]")).click();

    WebElement we1 = webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]"));
    action.moveToElement(we1).click().perform();
    webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]")).click();
    webDriver.navigate().to("https://www.gog.com/en/games");

    WebElement we2 = webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]"));
    action.moveToElement(we2).click().perform();
    webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]")).click();
    Thread.sleep(1000);
    webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]")).click();
    webDriver.navigate().to("https://www.gog.com/en/games");

    WebElement we3 = webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]"));
    action.moveToElement(we3).click().perform();
    webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]")).click();
    webDriver.navigate().to("https://www.gog.com/en/games");

    webDriver.navigate().to("https://www.gog.com/en/games");
    WebElement we4 = webDriver.findElement(By.xpath("//div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]"));
    String cart = we4.getText();
    assertEquals("expected: '3', cart");
    Thread.sleep(1000);
}
```

Run: Test1GamesCountInCart

Tests passed: 1 of 1 test - 31 sec 241 ms

Test1GamesCountInCart 31 sec 241 ms

SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".  
SLF4J: Defaulting to no-operation (NOP) logger implementation  
SLF4J: See <http://www.slf4j.org/codes.html#StaticLoggerBinder> for further details.  
Starting ChromeDriver 108.0.5359.71 (1e0e380ee0601ad036874420e3ca3e3750ac-refs/branch-heads/53590#1016) on port 9378  
Only local connections are allowed.

### 3.5. Scenario: Checking the Game Genre

Every game is sorted by many variables, one of them being the genre. We wanted to test if the games are sorted as they should be, by checking the “Shooter” box and clicking on a random game.

Test Name: Game Genre Check				
Description: Go to the game tab, filter by shooter genre, choose a game, check if the text equals to “Shooter”				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the Game section 2. Filter by “Shooter” 3. Click on the first game 4. Check if the game genre equals to “Shooter”		The game should be a shooter	The game is a shooter	PASS
Notes:				

The screenshot displays the IntelliJ IDEA IDE with a Selenium test named `Test1TestGenreTag` in the `Test1.java` file. The test script uses Selenium WebDriver to navigate to a game catalog, filter by the 'Shooter' genre, and verify the genre of the first game. The test is successful, as indicated by the 'Tests passed: 1 of 1 test - 12 sec 34 ms' message in the Run tool window. The test steps are as follows:

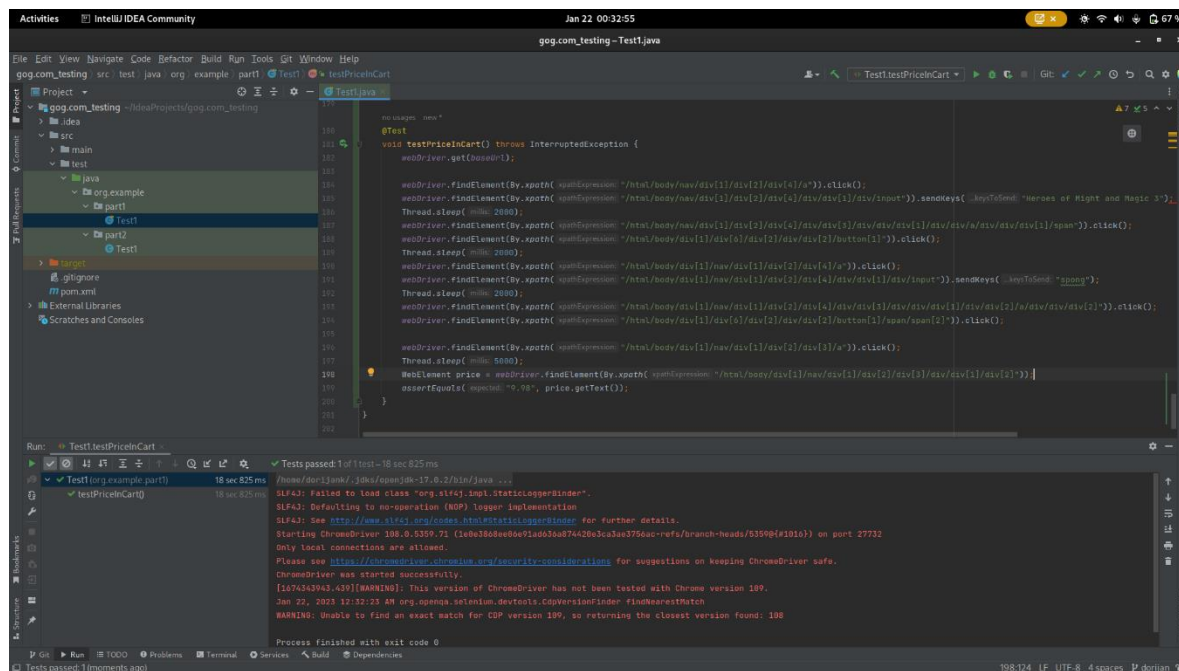
- Go to the Game section
- Filter by “Shooter”
- Click on the first game
- Check if the game genre equals to “Shooter”

The test data, expected result, and actual result are all consistent, resulting in a 'PASS' status.

### 3.6. Scenario: Checking the Price in the Cart

When checking out, we need to check if the price is actually correct and that it does not show a different value.

Test Name: Cart Price Check				
Description: Add 3 games, go to the cart and check the final price				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the Game section 2. Add 3 games to the cart 3. Click on the cart 4. Check if the total equals to \$ 9.98		The price should be \$9.98	The price is \$9.98	PASS
Notes:				

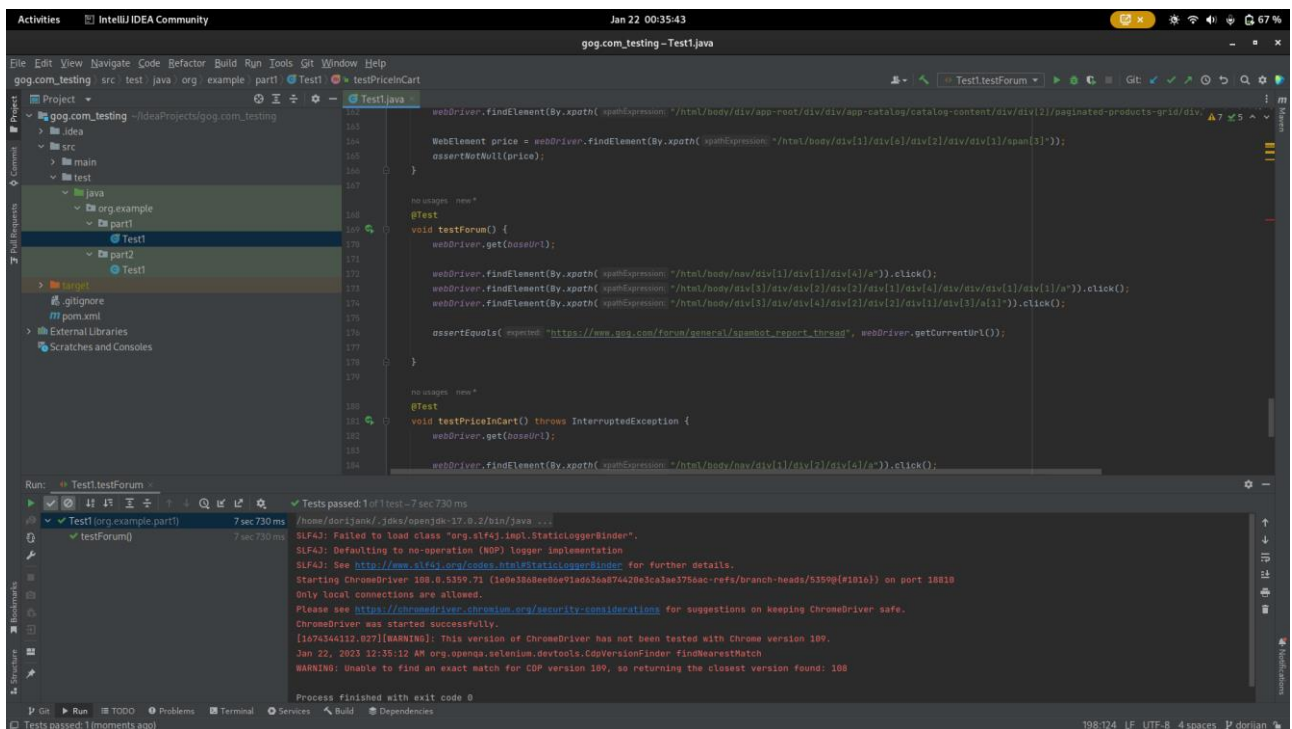


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### 3.7. Scenario: Forum Testing

Sometimes we want to check out the forum, to dive into a discussion with like-minded people. This test is used to check if the forum works as intended.

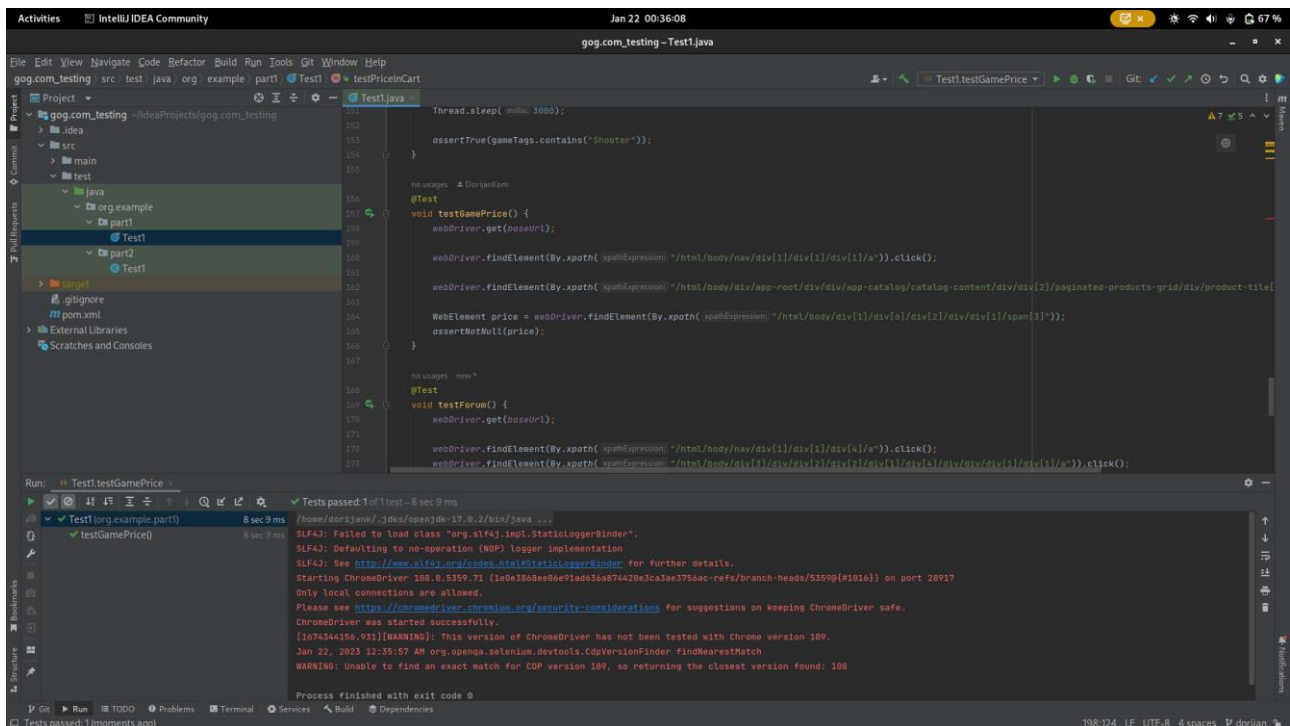
<b>Test Name:</b> Forum Test				
<b>Description:</b> Go to the Forum and then go to a discussion				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b>	<b>Test Data:</b>	<b>Expected Result:</b>	<b>Actual Result:</b>	<b>Status:</b>
1. Go to the Forum tab 2. Go to a certain subforum 3. Enter the discussion		We should be at the discussion	We are in a discussion	PASS
<b>Notes:</b>				



### 3.8. Scenario: Checking if the Game Price Exists

Checking if the price of a game exists, since it should be shown to the customer before purchasing.

<b>Test Name:</b> Game Price Existence Test				
<b>Description:</b> Search a game, check if the price exists				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b>  1. Go to the Game section 2. Click on the game 3. Check if the price exists	<b>Test Data:</b>	<b>Expected Result:</b>  The price should exist	<b>Actual Result:</b>  The price exists	<b>Status:</b>  PASS
<b>Notes:</b>				





### 3.9. Scenario: Change the Language

Not every user can speak English and this test is to check if the language change is possible at the bottom of the website

Test Name: Language Change Test				
Description: Go to the bottom of the site, change the language and check if the words have been translated				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the bottom of the website 2. Change to Polish 3. Check if the language has been changed by checking a word		The language should be Polish	The language is Polish	PASS
Notes:				

```
20 @BeforeAll
21 static void setUpBeforeClass() throws Exception {
22     System.setProperty("webdriver.chrome.driver", "C:\\Users\\kenan\\Desktop\\chromedriver_win32\\chromedriver.exe");
23
24     ChromeOptions options = new ChromeOptions();
25     options.addArguments("--start-maximized");
26
27     WebDriver driver = new ChromeDriver(options);
28     baseUrl = "https://www.gcg.com/";
29
30 }
31
32
33 @AfterAll
34 static void tearDownAfterClass() throws Exception {
35     driver.quit();
36 }
37
38
39 @Test
40 void test() throws InterruptedException {
41     driver.get(baseUrl);
42     driver.findElement(By.xpath("/html/body/nav/div[1]/div[2]/div[4]/a")).click();
43     Thread.sleep(3000);
44
45     driver.findElement(By.xpath("/html/body/nav/div[1]/div[2]/div[4]/div/div[1]/div/input")).sendKeys("The Witcher: Enhanced Edition");
46     Thread.sleep(5000);
47
48     driver.findElement(By.xpath("/html/body/nav/div[1]/div[2]/div[4]/div/div[3]/div/div/div[1]/div/div[2]/a/div")).click();
49     Thread.sleep(3000);
50
51     driver.findElement(By.xpath("//div[@id='pageTop']/body/div[1]/button")).click();
52     Thread.sleep(5000);
53
54     WebElement price = driver.findElement(By.xpath("//div[@id='pageTop']/body/div[2]/div[6]/div[2]/div/div[1]/span[3]"));
55     assertEquals("1.49", price.getText());
56 }
57
58 }
```

Failure Trace

Problems | Javadoc | Declaration | Console

<terminated> Test3 (1) [JUnit] C:\Program Files\Java\jdk-17\bin\java.exe (20 Jan 2023, 22:13:14 - 22:13:37) [pid: 21540]

S\F43: Defaulting to no-operation (NOP) logger implementation

S\F43: See <http://www.slf4j.org/codes.html#StaticLoggerBinder> for further details.

Starting ChromeDriver 108.0.5359.71 (1e0e3888ee6e91ad36a874428e3ca3ae3756ac-refs/branch-heads/5359@#1816) on port 32697

Only local connections are allowed.

Please see <https://chromedriver.chromium.org/security-considerations> for suggestions on keeping Chromedriver safe.

Chromedriver was started successfully.

[1674245196.334][WARNING]: This version of Chromedriver has not been tested with Chrome version 109.

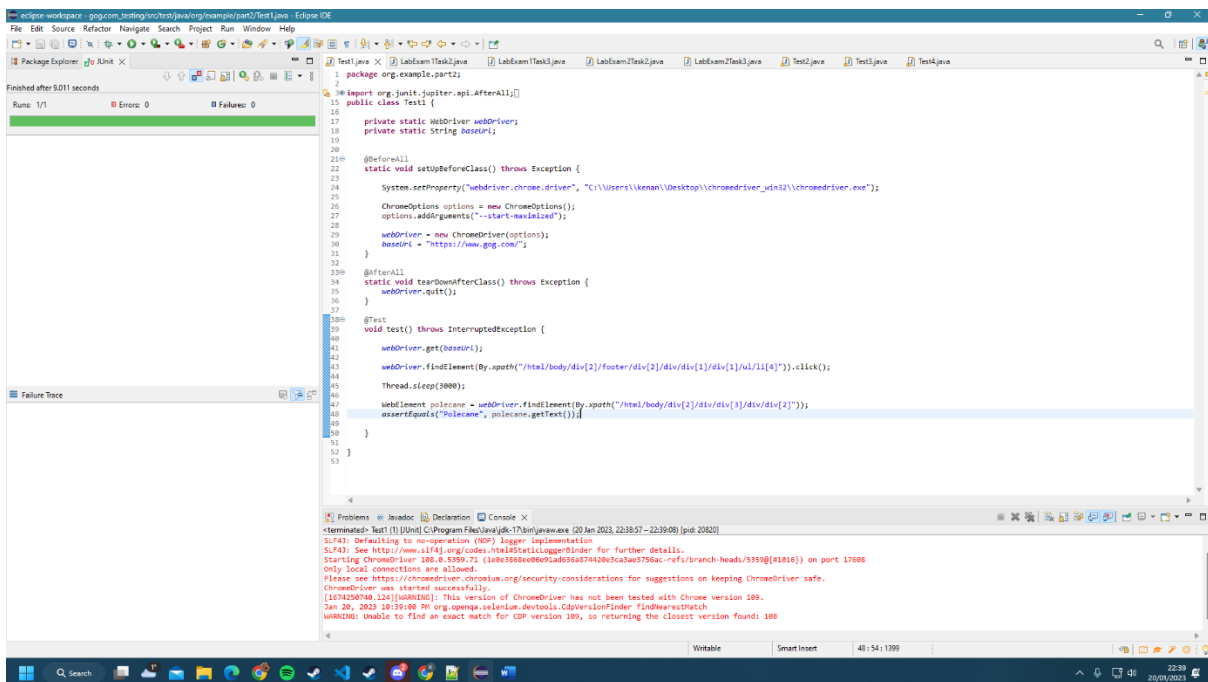
Jan 20, 2023 18:13:16 PM org.openqa.selenium.devtools.CdpVersionFinder.findNearestMatch

WARNING: Unable to find an exact match for CDP version 109, so returning the closest version found: 108

### 3.10. Scenario: Download GOG Galaxy

Downloading Gog Galaxy, because some users might want to have it on their computers, since it is easier to use the launcher, than go to the website and download games

Test Name: Game Price Existence Test				
Description: Download Gog Galaxy				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the Gog Galaxy link 2. Click on the link 3. Download the installer		The installer should start downloading	The installer is downloaded	PASS
Notes:				



```
1 package org.example.part1;
2
3 import org.junit.jupiter.api.AfterAll;
4
5 public class Test1 {
6     private static WebDriver webDriver;
7     private static String baseUrl;
8
9
10    @BeforeAll
11    static void setUpBeforeClass() throws Exception {
12        System.setProperty("webdriver.chrome.driver", "C:\\Users\\kenan\\Desktop\\chromedriver_win32\\chromedriver.exe");
13        ChromeOptions options = new ChromeOptions();
14        options.addArguments("--start-maximized");
15        webDriver = new ChromeDriver(options);
16        baseUrl = "https://www.gog.com/";
17    }
18
19    @AfterAll
20    static void tearDownAfterClass() throws Exception {
21        webDriver.quit();
22    }
23
24    @Test
25    void test() throws InterruptedException {
26        webDriver.get(baseUrl);
27        WebElement footer = webDriver.findElement(By.xpath("//html/body/div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]"));
28        Thread.sleep(3000);
29        WebElement polecane = webDriver.findElement(By.xpath("//html/body/div[2]/div[1]/div[1]/div[1]/div[1]/div[1]/div[1]"));
30        assertEquals("Polecane", polecane.getText());
31    }
32 }
```

Finished after 5.011 seconds  
Runs: 1/1  
Errors: 0  
Failures: 0

Failure Trace

Problems | Javadoc | Declaration | Console X

terminated: Test [1] [Unit] C:\Program Files\Java\jdk-17\bin\java.exe (20 Jan 2023, 22:38:57 - 22:39:00) [pid: 20820]

SLF4J: Defaulting to no-operation (NOP) logger implementation  
SLF4J: See <http://www.slf4j.org/codes.html#staticLoggerBinder> for further details.  
Starting ChromeDriver 109.0.5399.71 (1090380e0009ad836a7426bca3a37956ac-refs/branch-heads/5399@10104) on port 17088  
Only local connections are allowed.  
Please see <https://chromedriver.chromium.org/security-considerations> for suggestions on keeping Chromedriver safe.  
Chromedriver was started successfully.  
[1674250740.124][WEBVIEW:109]: This version of ChromeDriver has not been tested with Chrome version 109.  
Jan 20, 2023 10:39:00 PM org.openqa.selenium.devtools.CdpVersionFinder findNearestMatch  
WARNING: Unable to find an exact match for CDP version 109, so returning the closest version found: 108

### 3.11. Scenario: Checking if the Price of Witcher: Enhanced Edition is 1.49

Checking if the price of the game is 1.49

Test Name: Game Price Existence Test				
Description: Search for a specific game, check if the price is 1.49				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the Search bar 2. Enter “Witcher Enhanced Edition” 3. Click on the title 4. Check if the game price is 1.49		The price should be 1.49	The price is 1.49	PASS
Notes:				

```
4 import org.junit.jupiter.api.BeforeAll;
5 import org.junit.jupiter.api.Test;
6 import org.openqa.selenium.By;
7 import org.openqa.selenium.WebDriver;
8 import org.openqa.selenium.WebElement;
9 import org.openqa.selenium.chrome.ChromeDriver;
10 import org.openqa.selenium.chrome.ChromeOptions;
11 import org.openqa.selenium.support.ui.Select;
12
13
14 import static org.junit.jupiter.api.Assertions.*;
15 public class Test2 {
16
17     private static WebDriver webDriver;
18     private static String baseUrl;
19
20
21     @BeforeClass
22     static void setUpBeforeClass() throws Exception {
23
24         System.setProperty("webdriver.chrome.driver", "C:\\Users\\kenan\\Desktop\\chromedriver_win32\\chromedriver.exe");
25
26         ChromeOptions options = new ChromeOptions();
27         options.addArguments("--start-maximized");
28
29         webDriver = new ChromeDriver(options);
30         baseUrl = "https://www.gog.com/";
31     }
32
33     @AfterClass
34     static void tearDownAfterClass() throws Exception {
35         webDriver.quit();
36     }
37
38     @Test
39     void test() throws InterruptedException {
40
41         webDriver.get(baseUrl);
42         webDriver.findElement(By.xpath("/html/body/div[2]/footer/div[2]/div/div[1]/a[2]/span")).click();
43         Thread.sleep(2000);
44     }
45
46 }
47
48 }
```

Failure Trace

Problems | Javadoc | Declaration | Console X

<terminated> Test2 (1) [JUnit] C:\Program Files\Java\jdk-17\bin\java.exe (20 Jan 2023, 22:39:59 - 22:40:09) [pid: 23448]

SLF4J: Defaulting to no-operation (NOP) logger implementation

SLF4J: See <http://www.slf4j.org/codes.html#staticLoggerBinder> for further details.

Starting ChromeDriver 109.0.5359.71 (10be388be06e91ad36a074428e3ca3e3756ac-refs/branch-heads/5359@#1816) on port 7529

Only local connections are allowed.

Please see <https://chromedriver.chromium.org/security-considerations> for suggestions on keeping ChromeDriver safe.

ChromeDriver was started successfully.

[1674258802.591][WARNING]: This version of ChromeDriver has not been tested with Chrome version 109.

Jan 20, 2023 10:40:02 PM org.openqa.selenium.devtools.cdpversionfinder.findNearestMatch

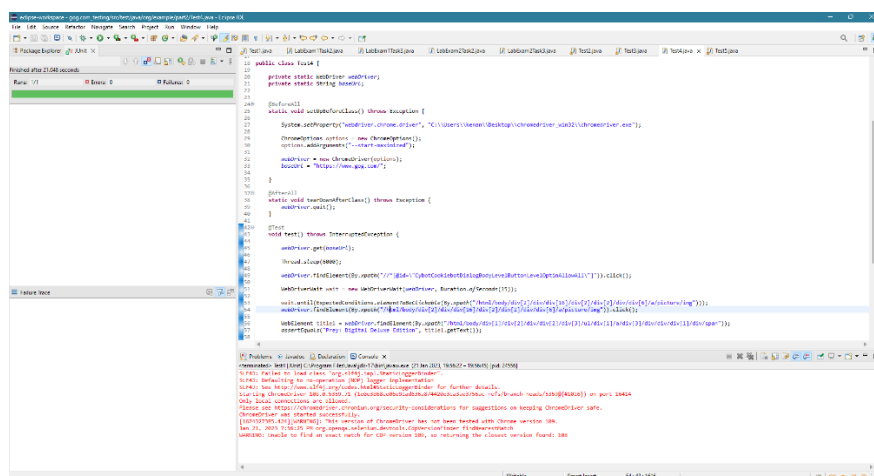
WARNING: Unable to find an exact match for CDP version 109, so returning the closest version found: 108

Writeable | Smart Insert | 27:51:842

### 3.12. Scenario: Check the Twitch Tab

This test is intended to check the twitch tab link, check the first 3 games and go to the twitch stream

<b>Test Name:</b> Twitch Test				
<b>Description:</b> Go to the twitch link and watch a stream				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b>  1. Go to the Twitch stream tab 2. Check the top 3 games and see if they equal to the text that we inserted 3. Go to the stream 4. Check if we are on the correct link	<b>Test Data:</b>	<b>Expected Result:</b>  In the end we should be on the twitch stream	<b>Actual Result:</b>  We are on the twitch stream	<b>Status:</b>  PASS
<b>Notes:</b>				



```

@Test
void test TwitchStream() throws InterruptedException {

    WebDriver.get(baseUrl);

    Thread.sleep(6000);

    WebDriver.findElement(By.xpath("//*[id=\"CybotCookiebotDialogBodyLevelButtonLevelOptinAllowAll\"]")).click();

    WebDriverWait wait = new WebDriverWait(WebDriver, Duration.ofSeconds(15));

    wait.until(ExpectedConditions.elementToBeClickable(By.xpath("/html/body/div[2]/div/div[16]/div[2]/div[2]/div/div[6]/a/picture/img")));
    WebDriver.findElement(By.xpath("/html/body/div[2]/div/div[16]/div[2]/div[2]/div/div[6]/a/picture/img")).click();

    WebElement title1 = WebDriver.findElement(By.xpath("/html/body/div[1]/div[2]/div/div[2]/div[3]/ul/div[1]/a/div[3]/div/div/div[1]/div/span"));
    assertEquals("Prey: Digital Deluxe Edition", title1.getText());

    WebElement title2 = WebDriver.findElement(By.xpath("/html/body/div[1]/div[2]/div/div[2]/div[3]/ul/div[2]/a/div[3]/div/div/div[1]/div/span"));
    assertEquals("Vampyr", title2.getText());

    WebElement title3 = WebDriver.findElement(By.xpath("/html/body/div[1]/div[2]/div/div[2]/div[3]/ul/div[3]/a/div[3]/div/div/div[1]/div/span"));
    assertEquals("Curse of the Dead Gods", title3.getText());

    WebDriver.findElement(By.xpath("/html/body/div[1]/div[2]/div/div[2]/div[2]/div[3]/div[2]/a")).click();
    Thread.sleep(4000);

    String url = WebDriver.getCurrentUrl();

    assertEquals("https://www.gog.com/en/partner/streamteam", url);

    Thread.sleep(2000);
}

```

### 3.13. Scenario: Sorting Games to Shooters and Setting the Price

Sorting the Game based on the shooter genre and setting the price from 3 to 15 dollars and adding the S.T.A.L.K.E.R. game to the cart

Test Name: Game Price Existence Test				
Description: Sorting the game based on genre and price and clicking on the game and checking if the title is correct				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the Game section 2. Choose Shooter genre 3. Clear the first box with the price and enter 3 4. Clear the second box and enter 15 5. Go to S.T.A.L.K.E.R.: Call of Pripyat game 6. Check if the title is correct		The game should be S.T.A.L.K.E.R.: Call of Pripyat	The game is S.T.A.L.K.E.R.: Call of Pripyat	PASS
Notes:				

```
System.setProperty("webdriver.chrome.driver", "C:\\Users\\kenan\\Desktop\\chromedriver_win32\\chromedriver.exe");
ChromeOptions options = new ChromeOptions();
options.addArguments("--start-maximized");
WebDriver driver = new ChromeDriver(options);
baseUrl = "https://www.gog.com/";

@Test
static void tearDownAfterClass() throws Exception {
    driver.quit();
}

@Test
void test() throws InterruptedException {
    driver.get(baseUrl);
    driver.findElement(By.xpath("//div[@id='SEE_ALL_DEALS']/a")).click();
    Thread.sleep(3000);
    driver.findElement(By.xpath("//div[@id='genres-shooter']/a")).click();
    Thread.sleep(3000);
    driver.findElement(By.xpath("/html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[1]/filters-wrapper/div/div[1]/div[2]/div/div/div/filters/div/price-filter/collapse")).click();
    driver.findElement(By.xpath("/html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[1]/filters-wrapper/div/div[1]/div[2]/div/div/div/filters/div/price-filter/collapse")).click();
    driver.findElement(By.xpath("/html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[1]/filters-wrapper/div/div[1]/div[2]/div/div/div/filters/div/price-filter/collapse")).click();
    Thread.sleep(3000);
    driver.findElement(By.xpath("/html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[1]/filters-wrapper/div/div[1]/div[2]/div/div/div/filters/div/price-filter/collapse")).click();
    Thread.sleep(2000);
    WebElement title = driver.findElement(By.xpath("/html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/paginated-products-grid/div/product-title[3]/a/div[2]/div[1]"));
    assertEquals("S.T.A.L.K.E.R.: Call of Pripyat", title.getText());
}
```

### 3.14. Scenario: Check if Postal 2 Supports Linux and MacOS

Checking if the game supports Linux and MacOS

Test Name: OS Test				
Description: Check if it supports other OS than Windows				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Go to the search bar 2. Type in “Postal 2” and click on the game 3. Check on the page if it supports Linux		The game should support Linux	The game does not support Linux	FAIL
Notes:				

```
24 ChromeOptions options = new ChromeOptions();
25 options.addArguments("--start-maximized");
26
27 WebDriver driver = new ChromeDriver(options);
28 baseUrl = "https://www.gog.com/";
29
30
31
32 @AfterClass
33 static void tearDownAfterClass() throws Exception {
34     driver.quit();
35 }
36
37 @Test
38 void test() throws InterruptedException {
39     driver.get(baseUrl);
40
41     driver.findElement(By.xpath("//html/body/nav/div[1]/div[2]/div[4]/a")).click();
42
43     Thread.sleep(3000);
44
45     driver.findElement(By.xpath("//html/body/nav/div[1]/div[2]/div[4]/div/div[1]/div/input")).sendKeys("Postal 2");
46
47     Thread.sleep(5000);
48
49     driver.findElement(By.xpath("//html/body/nav/div[1]/div[2]/div[4]/div/div[3]/div/div/div[1]/div/div[2]/a/div")).click();
50
51     Thread.sleep(3000);
52
53     driver.findElement(By.xpath("//div[@id='pageTop']/body/div[1]/button")).click();
54
55     Thread.sleep(5000);
56
57     WebElement worksOn = driver.findElement(By.xpath("//div[@id='pageTop']/body/div[2]/div[7]/div[4]/div[3]/div[2]/div[3]/div[2]"));
58     assertEquals("Windows (7, 8, 10, 11), Linux, Mac", worksOn.getText());
59 }
60
61
62
63
64
```

Failure Trace

```
<terminated> Test [JVM] C:\Program Files\Java\jdk-17\bin\java.exe (21 Jan 2023, 23:34:25 - 23:34:51) [pid 12776]
at io.netty.buffer.AbstractByteBuf.writeBytes(AbstractByteBuf.java:1132)
at io.netty.channel.socket.nio.NioSocketChannel.doReadBytes(NioSocketChannel.java:357)
at io.netty.channel.nio.AbstractNioByteChannel$NioByteUnsafe.read(AbstractNioByteChannel.java:151)
at io.netty.channel.nio.NioEventLoop.processSelectedKeyOptimized(NioEventLoop.java:788)
at io.netty.channel.nio.NioEventLoop.processSelectedKey(NioEventLoop.java:724)
at io.netty.channel.nio.NioEventLoop.run(NioEventLoop.java:598)
at io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.java:997)
at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:24)
at io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
at java.base/java.lang.Thread.run(Thread.java:833)
```

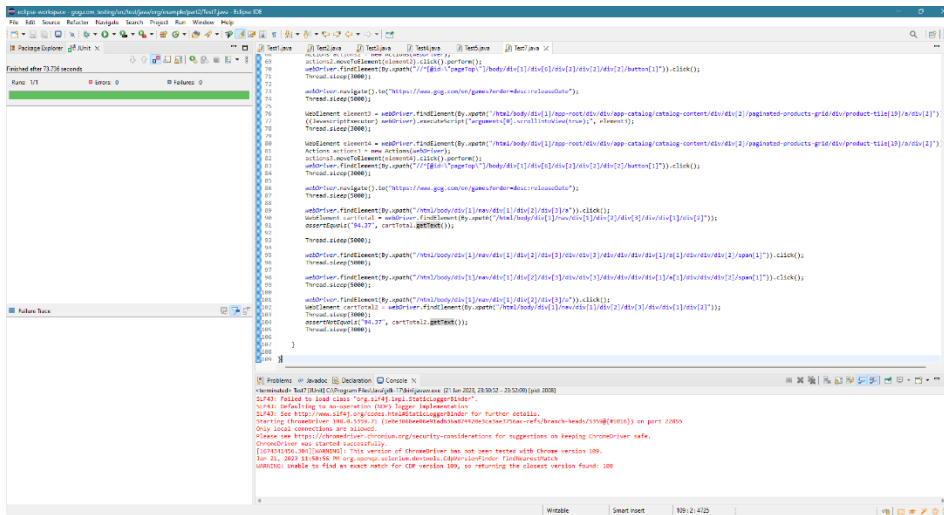


### 3.15. Scenario: Adding 3 Games To The Cart and Removing Them, While Checking The Price Twice

This test is necessary in order to check if the actual price changes when removing items and is very important not to give the customer a higher price on one item

<b>Test Name:</b> Cart Game Removing Test				
<b>Description:</b> Adding 3 games, checking the price, removing two and checking the price again				
<b>Pre-condition(s):</b>				
<b>Test Steps:</b>	<b>Test Data:</b>	<b>Expected Result:</b>	<b>Actual Result:</b>	<b>Status:</b>
1. Go to the Game section 2. Sort by newest titles 3. Click on a game 4. Add the game to the cart 5. Repeat step 2 and 3 two more times, just different games 6. Check the cart 7. See if the price is correct 8. Remove two items 9. Check the price again		The price should stay the same	The price changes	FAIL
<b>Notes:</b>				

```
test void testCart() throws InterruptedException {  
    WebDriver driver = getWebDriver();  
  
    WebElement navDiv1 = driver.findElement(By.xpath("//html/body/nav/div[1]/div[1]/div[1]/a"));  
    navDiv1.click();  
    Thread.sleep(3000);  
  
    WebElement appCatalogContentDiv2 = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/div/sort/div/div[2]"));  
    appCatalogContentDiv2.click();  
    Thread.sleep(2000);  
  
    WebElement dropdownMenuDiv2Label8 = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/div/sort/div/dropdown/div/mmenu/div[2]/div[label[8]]"));  
    dropdownMenuDiv2Label8.click();  
    Thread.sleep(2000);  
  
    List actions = new ArrayList<>();  
    WebElement productTitle6A = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[1]/a/div[2]"));  
    actions.add(productTitle6A);  
    actions.forEach(action -> {  
        action.click();  
    });  
    WebElement buttonDiv2Div2Div2Button1 = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[1]/a/div[2]"));  
    buttonDiv2Div2Div2Button1.click();  
    Thread.sleep(3000);  
  
    driver.navigate().to("https://www.gog.com/en/games/order-desc/releaseDate");  
    Thread.sleep(3000);  
  
    WebElement productTitle6A = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[6]/a/div[2]"));  
    actions.add(productTitle6A);  
    actions.forEach(action -> {  
        action.click();  
    });  
    WebElement buttonDiv2Div2Div2Button1 = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[6]/a/div[2]"));  
    buttonDiv2Div2Div2Button1.click();  
    Thread.sleep(3000);  
  
    driver.navigate().to("https://www.gog.com/en/games/order-desc/releaseDate");  
    Thread.sleep(5000);  
  
    WebElement productTitle19A = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[19]/a/div[2]"));  
    actions.add(productTitle19A);  
    actions.forEach(action -> {  
        action.click();  
    });  
    WebElement buttonDiv2Div2Div2Button1 = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[19]/a/div[2]"));  
    buttonDiv2Div2Div2Button1.click();  
    Thread.sleep(3000);  
  
    driver.navigate().to("https://www.gog.com/en/games/order-desc/releaseDate");  
    Thread.sleep(5000);  
  
    WebElement cartTotal = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[19]/a/div[2]"));  
    cartTotal.click();  
    WebElement cartTotalText = driver.findElement(By.xpath("//html/body/div[1]/app-root/div/div/app-catalog/catalog-content/div/div[2]/div/paginated-products-grid/div/product-title[19]/a/div[2]"));  
    cartTotalText.getText();  
    Thread.sleep(5000);  
  
    driver.navigate().to("https://www.gog.com/en/games/order-desc/releaseDate");  
    Thread.sleep(5000);  
}
```



## 9. Conclusion

The site works as intended. Everything worked as intended, the system passed the tests that it should pass and failed on the ones that it should. We tested all of the vital features of the sites in different ways and adding different tasks to each, trying to mimic a regular user and what they might choose to do on the site on a daily basis. Of course, the tests conducted could be improved upon, if the sign in system worked, but because the website itself has security features, this was not possible for this testing.

### 9.1. Testing Summary

Testing Tool	Total Tests	Passed Tests	Failed Tests
Java programming language, JUnit, Selenium for Java and the Google Chrome Driver were used for conducting the tests on this website.	15	13 passing tests	2 failing tests

### 9.2. Final Thoughts

The website itself is pretty well made, as expected from a multi-million dollar company, which focuses their resources on gaming and features that go with it. Another thing to add that kind of threw us off at the start was that the Sign in/Log in system did not work, even though we made the account manually and thought it was going to work fine. Many of the features that the site offers could not be tested because of this reason. The main one being related to security features that were built-in by the developers, since the website offers free games from time to time and it could lead to an overload of the website itself.