

Final project report



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3. PURPOSE OF THE DOCUMENT AND WORK

This document contains the detailed report on the manual and little automation testing of [spofify](#) website using different tools and techniques learnt in the course of the training. This is the final project done to test the student's knowledge on what they have learnt in the last 4 months of software testing training. In this report, google sheet and testrail tool were used to develop and execute the test cases, though the test execution report was made using google sheet. For the automation part, selenium IDE and selenium webdriver were used. Issues/bugs found were reported using Jira test management tool. For every bugs, there is a need to suggest improvements which were done in this report. Finally, testing techniques used were also listed and summary of the whole process were presented.

4. TESTING SECTION

The diagram below shows the overview of the website structure highlighting the sections to be tested and the sections not tested. The login functionality, signup functionality as well as footer links have been chosen for testing. In addition to the chosen sections, browser compatibility and User Interface of some parts will also be tested. Additionally, a non-functional testing was also carried out with regards to browser compatibility.

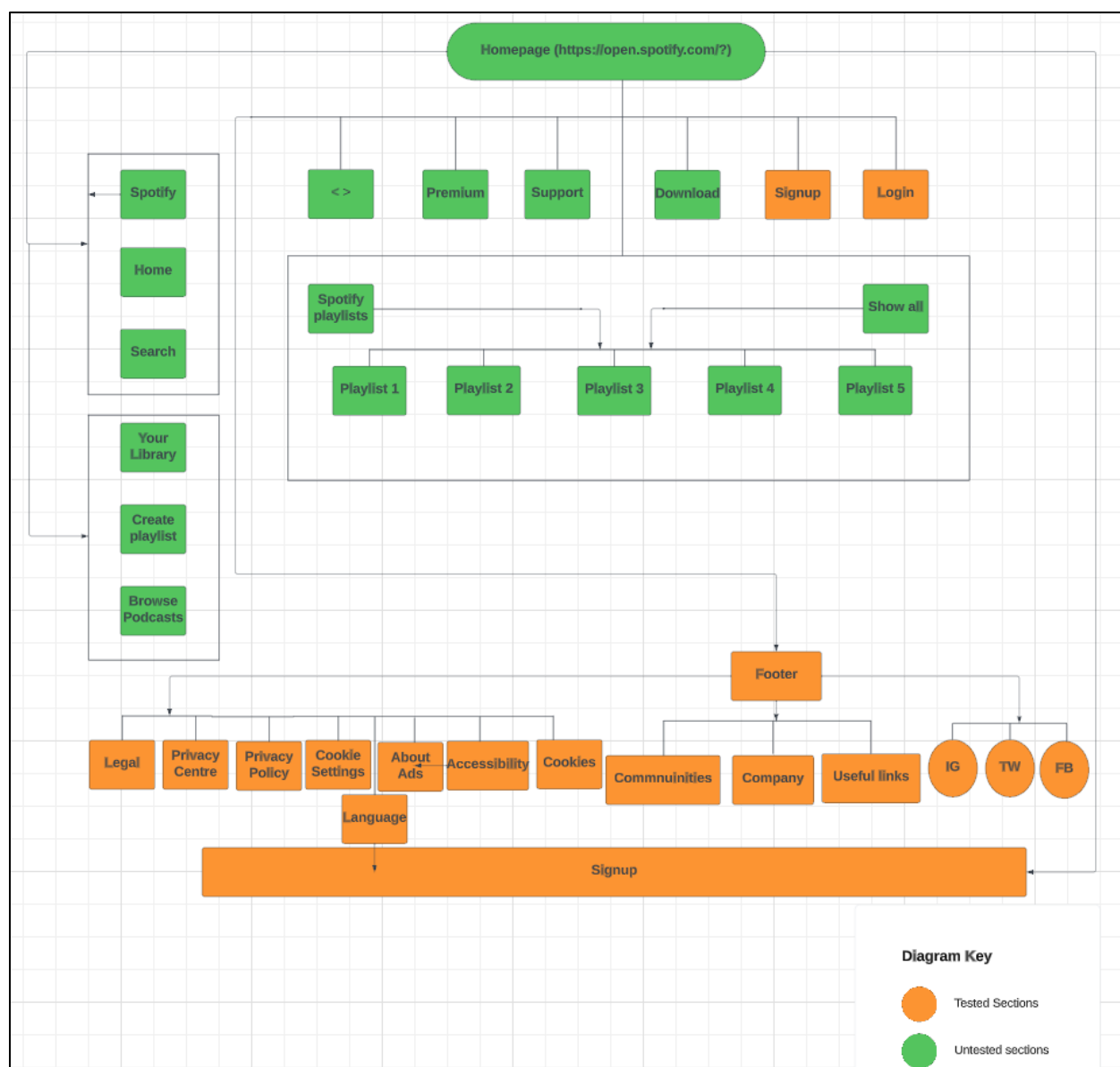


Fig 1. Website structure showing sections to be tested and not tested

5. TESTING CHECKLIST(S)

The chosen website has lots of functions to test, the figure 2 below highlights the checklist from which test cases are derived. As also seen using testrail tool.

Test type	ID	Checkpoint
User interface	U01	Check if opened page is in chosen language
	U02	Check if place holders are present for the fields in the login page
	U03	Check if place holders are present for the fields in the signup page
Login Functionality	LF01	Test login functionality
Signup Functionality	SF01	Test signup functionality
Browser compatibility	BC01	Compare url home page on different browsers

Fig. 2: Checklist



Fig. 3: Checklist as seen on testrail tool

6. DETAILED TEST CASES

From the checklist above, the test cases were derived, extracted from the main file and were presented in the figure below. The full test cases can be found in this [link](#).

Type	Test Case ID	Test Case Title	Precondition	Test Steps	Test Data	Expected Result (ER)	Actual Result	Priority	Result	Comments	Executed By
Signup	SF_01	Verify signing up an account through other links provided (google, facebook)	Browser is launched	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Click on google link - ER1 4. Click on browser back button 5. Click on facebook link - ER2	-	ER1 - user should be directed to the google page ER2 - user should be directed to the facebook page	ER1 - User was taken to the 'Google' page ER2 - User was taken to the 'Facebook' page	P0	Pass	-	Uzoh
	SF_02	Verify navigating to home page using the Spotify icon	Browser is launched	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Click on the spotify icon - ER1	-	ER1 - User should be taken to home page	ER1 - The spotify icon is not clickable	P1	Fail	This happened on some pages while it worked on some	Uzoh
	SF_03	Verify registering an Account by providing all fields with valid data	Browser is launched	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Fill in valid email address - ER1 4. Fill in valid password - ER2 5. Fill in valid Name, DOB, select gender 6. Click 'Next' - ER3 7. Tick the checkboxes 8. click 'sign up' button - ER4	-	ER1 - user should be directed to the password page ER2 - user should be directed to 'Tell us about yourself' page ER3 - user should be directed to the terms and conditions page ER4 - user should be taken to user's account page	ER1 - User was taken to the 'password' page ER2 - user was taken to 'Tell us about yourself' page ER3 - user was taken to the terms and conditions page ER4 - user successfully registered and taken to user's account page	P0	Pass		Uzoh
	SF_04	Verify the user receives email message of registration in inbox	Browser is launched User successfully registered an account	1. check info of the email used for registration for successful registration email	-	ER1 - A mail should be received in the inbox telling the user that they have successfully registered an account	ER1 - No mail came to the inbox	P0	Fail	This is bad bcos someone might have used their email to register and it might have been compromised.	Uzoh
	SF_05	Verify that there are mandatory fields indicated with red color * symbol	Browser is launched	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Check that mandatory fields are marked with red colour *symbol - ER1	-	ER1 - Mandatory fields should be marked with red colour * symbol	ER1 - Mandatory filed are not marked with *	P2	Fail	There should be distinction for better usability and understanding	Uzoh
	SF_06	Verify proper error notification messages are displayed for the mandatory fields when no/wrong data is provided in any fields	Browser is launched	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Click on the email field 4. Click elsewhere - ER1	-	ER1 - Proper error messages should be displayed	ER1 - Proper error messages were displayed	P1	Pass	-	Uzoh
	SF_07	Verify registering an account without providing any details	Browser is launched	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Click 'next' - ER1	-	ER1 - Error messages should be displayed for user to provide details	ER1 - Error messages were displayed for user to provide details	P1	Pass	-	Uzoh
	SF_08	Verify registering an account using invalid email address	Browser is launched	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Fill in invalid email address 4. Click next - ER1	yaha@john@yahoo shgfdjgvsdj	ER1 - Error messages should be displayed for user to provide valid email address	ER1 - Error messages were displayed for user to provide valid email address	P1	Pass	-	Uzoh
	LF_01	Verify logging into the application through other links provided (google, facebook, apple)	Browser is launched User has successfully registered an account	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'Login' at the header 3. Click on google link - ER1 4. Click on browser back button - ER2 5. Click on facebook link - ER3 6. Click on browser back button - ER2 7. Click on apple link - ER4	-	ER1 - user should be directed to the google page ER2 - User should be taken to the login page ER3 - user should be directed to the facebook page ER4 - user should be directed to the apple page	ER1 - user should be directed to the google page ER2 - User was taken back to the signup page instead ER3 - user should be directed to the facebook page ER4 - user should be directed to the apple page	P0	Fail	All the links worked but the back button failed to take user back to login page	Uzoh
	LF_02	Verify logging into an account using valid data	Browser is launched User has successfully registered	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'Login' at the header 3. Fill in valid email/username address and password (see test data) 4. Click 'Login' button - ER1	Email - wibiler209@ksyhtc.com PW - Ilovespotify2	ER1 - User should be successfully logged in and taken to logged-in page	ER1 - User successfully logged in and taken to logged-in page	P0	Pass	-	Uzoh

Fig 4. Detailed checklist as seen on [google sheet](#)

Project report

Return to Dashboard

SDA

Working On

Theo Uzoh

Help & Feedback

Overview

Todo

Milestones

Test Runs & Results

Test Cases

Reports

Upgrade

Administration

C1

Verify proper error notification messages are displayed fo...

←

→

🖨

✎

In section Test Cases.

Details

Tests & Results

Defects

History

People & Dates

Created

Theo Uzoh

10/15/2023 7:03 AM

Updated

Theo Uzoh

10/15/2023 7:03 AM

Test Cases

Successfully added the new test case. [Add another](#)

Type	Priority	Estimate	References
UI	Medium	None	None

Automation Type

None

Preconditions

Browser is launched

Steps

"1. open the URL (<https://open.spotify.com/>) in any browser.

1. Click on 'signup' at the header

2. Click on the email field

3. Click elsewhere - ER1"

Expected Result

ER1 - Proper error messages should be displayed

Fig 5. One of the test cases as shown on Testrail tool

Return to Dashboard

SDA

Working On

Theo Uzoh

Help & Feedback

Overview

Todo

Milestones

Test Runs & Results

Test Cases

Reports

Upgrade

Administration

C2

Verify logging into the application without providing any d...

←

→

🖨

✎

In section Test Cases.

Details

Tests & Results

Defects

History

People & Dates

Created

Theo Uzoh

10/15/2023 7:32 AM

Updated

Theo Uzoh

10/15/2023 7:32 AM

Test Cases

Successfully added the new test case. [Add another](#)

Type	Priority	Estimate	References
Functional	Medium	None	None

Automation Type

None

Preconditions

"Browser is launched
User has successfully registered an account"

Steps

"1. open the URL (<https://open.spotify.com/>) in any browser.

1. Click on 'Login' at the header

2. Do not provide any data

3. Click 'Log in' button - ER1"

Expected Result

ER1 - Error messages should be displayed telling the user to provide details

Fig 6. Another test case as seen on Testrail tool

7. FOUNDED ISSUES/BUGS

While executing the test cases, there were bugs found and these were reported using google sheet and Jira test management tool as seen in the figures below:

Type	ID	Title	Description	Steps to reproduce	Expected Result	Actual Result	Environment	Status	Priority
Functionality	BC_01	The Spotify icon is not clickable on signup page	When user clicks on the spotify icon on all the pages having this icon, the user should be directed to the homepage	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Click on the spotify icon - ER1	ER1 - User should be taken to home page	ER1 - The spotify icon is not clickable	Windows 10, Google chrome - Version 117.0.5938.150	Open	P1
	BC_02	User didnt receive success message for account registration	When a user registers an account, a mail should be sent to the user either to verify email or that an account has been successfully created	1. check info of the email used for registration for successful registration email	ER1 - A mail should be received in the inbox telling the user that they have successfully registered an account	ER1 - No mail came to the inbox	Windows 10, Google chrome - Version 117.0.5938.150	Open	P0
	BC_03	Browser back button doesn't navigate user back to login page	When on the login page, user clicks the google or facebook or apple links, and then clicks the browser back button, user should be taken back to the login page	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'Login 3. Click on spotify logo - ER1 4. Click on browser back button to navigate back to login page - ER2	ER1 - User should be taken to the spotify homepage ER2 - User should be taken back to the login page	ER1 - User was taken to the spotify homepage ER2 - User was not taken to the login page, instead was taken to the homepage	Windows 10, Google chrome - Version 117.0.5938.150	Open	P1
UI	BC_04	Mandatory fields are not marked with red colour * symbol	It is important to show users that some fields are mandatory or optional but in this case, no mandatory symbol was shown	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'signup' at the header 3. Check that mandatory fields are marked with red colour *symbol - ER1	ER1 - Mandatory fields should be marked with red colour * symbol	ER1 - Mandatory filed are not marked with *	Windows 10, Google chrome - Version 117.0.5938.150	Open	P2
Localization	BC_05	Some links are missing when language is changed to other languages	When the original page language is changed to other languages, the page should have same thing as the original page except the language should change	1. open the url (https://open.spotify.com/) in any browser. 2. Click on 'English' icon at the footer to change the language - ER1 3. Select any other language - ER2	ER1 - A language option should be displayed showing different languages ER2 - The UI interface should change to the selected language ER3 - All areas should remain the same, only language should change	ER1 - A language option was displayed showing different languages ER2 - The UI interface changed to the selected language ER3 - The footer links vernished for most of other languages	Windows 10, Google chrome - Version 117.0.5938.150	Open	P0
Compatibility	BC_06	Spotify Home page is slightly different on Firefox browser	The home page should open same way in all browsers	1. open the url (https://open.spotify.com/) on Firefox browser.	ER1 - Home page should open same way in all browser displaying all headers, content and footers	ER1 - Homepage did not display lots of footer links such as facebook, instagram, company, communities, useful links etc.	Windows 10, Firefox - Version 118.0.1	Open	P0
	BC_07	Spotify Home page is slightly different on Microsoft Edge browser	The home page should open same way in all browsers	1. open the url (https://open.spotify.com/) on Microsoft Edge browser.	ER1 - Home page should open same way in all browser displaying all headers, content and footers	ER1 - Homepage did not display lots of footer links such as facebook, instagram, company, communities, useful links etc.	Windows 10, Microsoft Edge - Version 117.0.2045.60	Open	P0

Fig 7. Detailed list of bugs found as seen on the [google sheet](#)

▼ Backlog (7 issues)		0 0 0	Create sprint
SPOT-1	The Spotify icon is not clickable on signup page	TO DO ▼	
SPOT-2	User didnt receive success message for account registration	TO DO ▼	
SPOT-3	Browser back button doesn't navigate user back to login page	TO DO ▼	
SPOT-4	Mandatory fields are not marked with red colour * symbol	TO DO ▼	
SPOT-5	Some links are missing when language is changed to other languages	TO DO ▼	
SPOT-6	Spotify Home page is slightly different on Firefox browser	TO DO ▼	
SPOT-7	Spotify Home page is slightly different on Microsoft Edge browser	TO DO ▼	

Fig 8. List of bugs reported on Jira as shown in backlog

Projects / SpotifyTesting / Add epic / SPOT-5

Some links are missing when language is changed to other languages

Attach
 Add a child issue
 Link issue

Description

When the original page language is changed to other languages, the page should have same thing as the original page except the language should change

STR:

1. open the url (Spotify - Web Player: Music for everyone) in any browser.
2. Click on 'English' icon at the footer to change the language - ER1
3. Select any other language - ER2

Expected result: ER1 - A language option should be displayed showing different languages

ER2 - The UI interface should change to the selected language

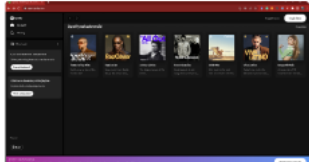
ER3 - All areas should remain the same, only language should change

Actual result: ER1 - A language option was displayed showing different languages

ER2 - The UI interface changed to the selected language

ER3 - The footer links vernished for most of other languages

Environment: Windows 10, Google chrome - Version 117.0.5938.150



To Do ▼
Actions ▼

Details

Priority
 High

Assignee
 Theophilus Chibuzo Uzoh

Labels
Localization

Sprint
SPOT Sprint 1

Story point estimate
None

Reporter
 Theophilus Chibuzo Uzoh

TestRail: Cases
Open TestRail: Cases

TestRail: Runs
Open TestRail: Runs

Created 20 hours ago
Updated 5 minutes ago

Configure

Fig 9. One of the bugs as reported on Jira software

Projects / SpotifyTesting / Add epic / SPOT-6

Spotify Home page is slightly different on Firefox browser

Attach Add a child issue Link issue ...

Description
The home page should open same way in all browsers

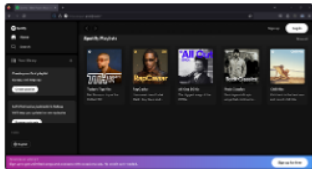
STR:

1. open the url ([Spotify - Web Player: Music for everyone](#)) on Firefox browser.

Expected result: ER1 - Home page should open same way in all browser displaying all headers, content and footers

Actual result: ER1 - Homepage did not display lots of footer links such as facebook, instagram, company, communities, useful links etc.

Environment: Windows 10, Firefox - Version 118.0.1



Attachments (1)

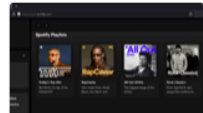


image-20231014-...054.png
14 Oct 2023, 02:50 PM

Details

Priority
High

Assignee
Theophilus Chibuzo Uzoh

Labels
Compatibility

Sprint
SPOT Sprint 1

Story point estimate
None

Reporter
Theophilus Chibuzo Uzoh

TestRail: Cases
Open **TestRail: Cases**

TestRail: Runs
Open **TestRail: Runs**

Created 20 hours ago
Updated 18 hours ago
Resolved 18 hours ago

Configure

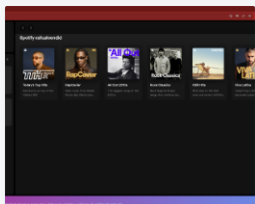
Fig 10. Another bug as reported on Jira software

Jira Software Your work Projects Filters Dashboards Teams Apps Create

SpotifyTesting Software project

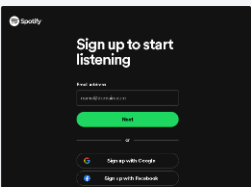
SPOT Sprint 1

TO DO 1



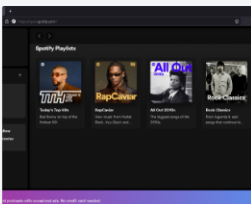
Some links are missing when language is changed to other languages
SPOT-5

IN PROGRESS 1



The Spotify icon is not clickable on signup page
SPOT-1

DONE 1 ✓



Spotify Home page is slightly different on Firefox browser
SPOT-6

PLANNING

- Timeline
- Backlog
- Board

DEVELOPMENT

- Code
- Project pages
- Add-ons
- Add shortcut
- Project settings

Fig 11. Tracking of the bugs during a sprint on Jira software

8. IMPROVEMENTS

There is a general saying that “there is always room for improvements on any software”. As such in the course of the testing project, I noticed some improvements that can be done which were listed in below:

- a. The error messages displayed during registration and login seem to be generic, they should be made specific so that users can better understand them.
- b. The spotify icon at any page should take users to the homepage when clicked on.
- c. Once a user registers an account, there should be a success message to tell the user that an account has been created successfully. This is important because, it will allow the user to be notified if their account has been compromised.
- d. The signup button can be left unclickable until detail are provided. It should be only clickable or changed to deep colour once required details are provided.
- e. The back browser buttons should be programmed to function as it should, back browser button should always return users to the previous page except for cases like logout where user can't be returned to the logged in account.
- f. Localization is often an issue with most applications, it is very important that users are able to see something on different language pages and not some features missing. This has to be improved.
- g. Not everyone uses Google Chrome browser hence, applications should be made to support different browsers and should open same way on all of them with all features present. The entire footer links were absent which prevents users using other browsers from enjoying such features.
- h. The usability generally needs to be improved, for instance, when registering or login into the application, mandatory fields are not marked with red colour * symbol.

There are more improvements to be done which I am sure if more testing is done will reveal those areas.

9. TEST DESIGN TECHNIQUES

This project has no FRS (Functional Requirement Specification) documentation hence it is only logical to use the experienced base techniques such as error-guessing, check-list and exploratory testing. In the course of this project, two of the three experienced based techniques were mostly used. As a user of these kind of applications, I can guess where errors are likely to occur. In addition, the absence of FRS documentation prompted the use of exploratory testing technique.

10. AUTOMATION USING SELENIUM IDE

In this section, an end-to-end test case was automated using selenium IDE. The end-to-end test case that was automated was logging in and logging out of the application. The figure below shows the screenshot from the selenium IDE tool and a link to the recorded video can be found [here](#).

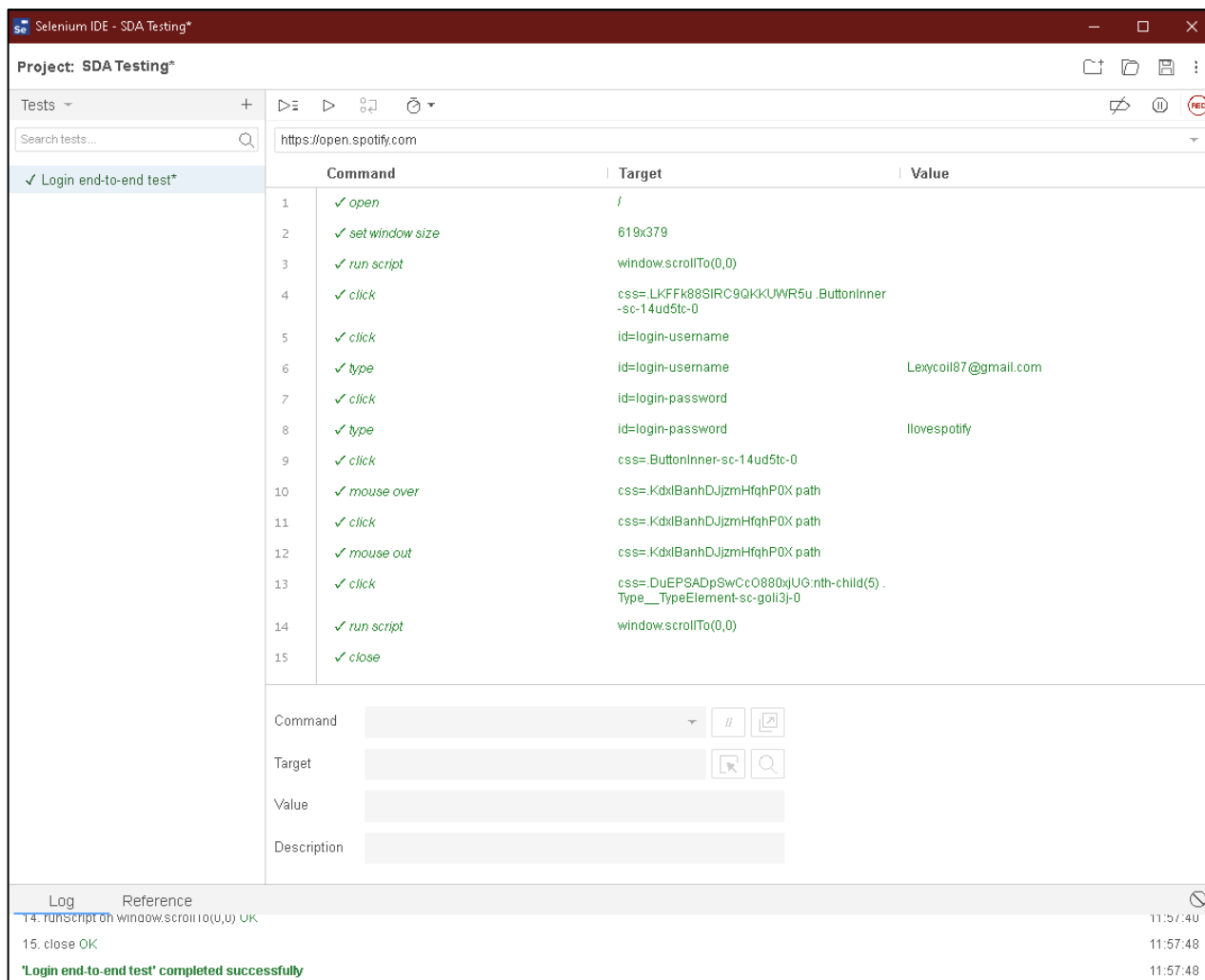
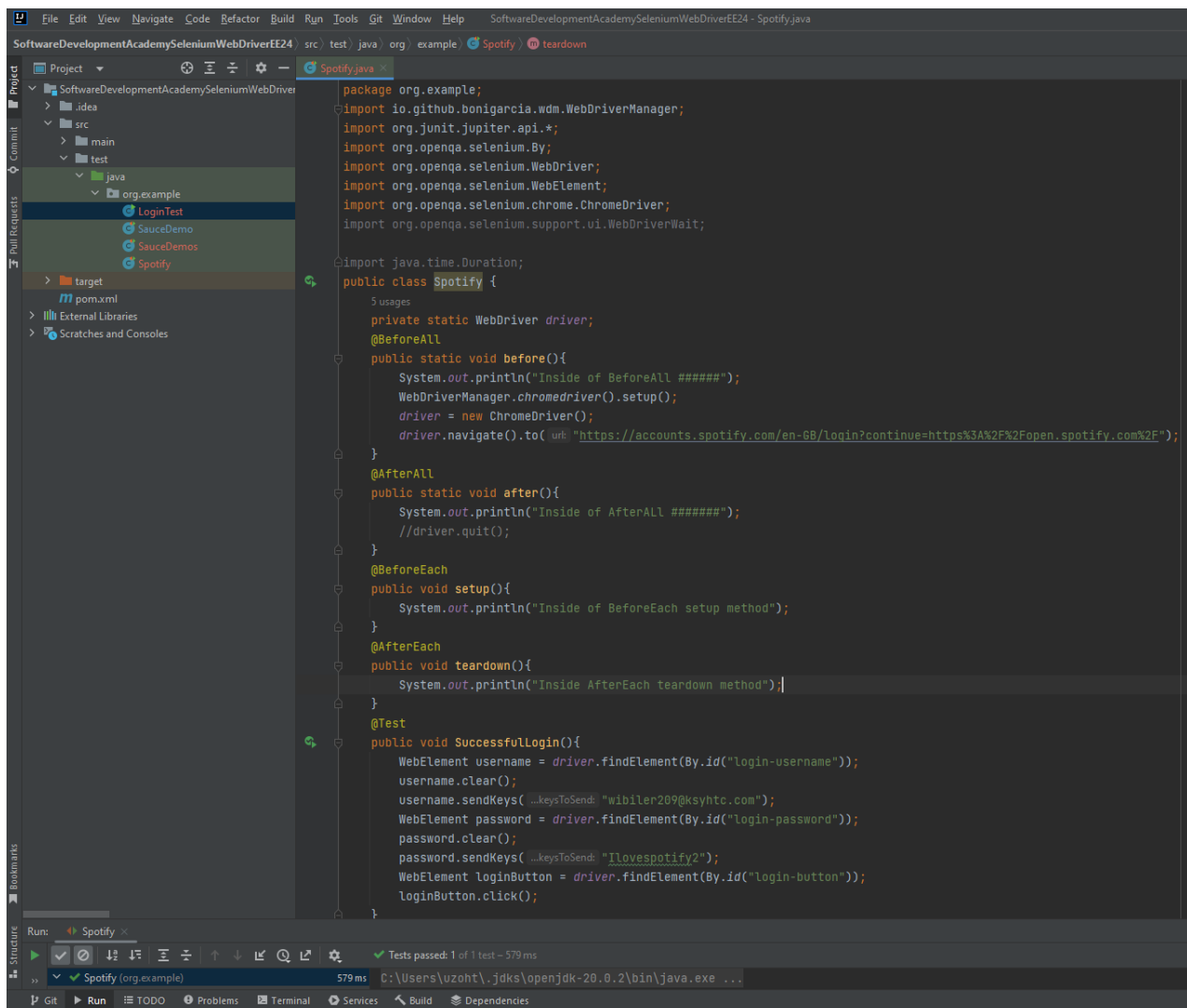


Fig 12. Automation test script executed using selenium IDE

11. AUTOMATION USING SELENIUM WEBDRIVER

In this section, successful login test case was automated using selenium webdriver. The screenshot of the code script written in java can be seen in the figure below while the video recording of the session can be found [here](#). The driver.quit was commented out to be able to show that the user successfully logged in while recording the test.



```
package org.example;
import io.github.bonigarcia.wdm.WebDriverManager;
import org.junit.jupiter.api.*;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.support.ui.WebDriverWait;

import java.time.Duration;

public class Spotify {
    5 usages
    private static WebDriver driver;

    @BeforeAll
    public static void before(){
        System.out.println("Inside of BeforeAll #####");
        WebDriverManager.chromedriver().setup();
        driver = new ChromeDriver();
        driver.navigate().to("https://accounts.spotify.com/en-GB/login?continue=https%3A%2F%2Fopen.spotify.com%2F");
    }

    @AfterAll
    public static void after(){
        System.out.println("Inside of AfterAll #####");
        //driver.quit();
    }

    @BeforeEach
    public void setup(){
        System.out.println("Inside of BeforeEach setup method");
    }

    @AfterEach
    public void teardown(){
        System.out.println("Inside AfterEach teardown method");
    }

    @Test
    public void SuccessfulLogin(){
        WebElement username = driver.findElement(By.id("login-username"));
        username.clear();
        username.sendKeys("wibiler209@ksyhtc.com");
        WebElement password = driver.findElement(By.id("login-password"));
        password.clear();
        password.sendKeys("Ilovespotify2");
        WebElement loginButton = driver.findElement(By.id("login-button"));
        loginButton.click();
    }
}
```

Fig 13. Screenshot of automated test code using selenium webdriver

12. REFLECTION

The project was carried out by me. In this project, I conducted both manual and automated test execution. The manual test case execution were much easier to do though I tried writing lot of test cases but in the end, I only executed some due to time factor. I managed to automate two test cases; one using selenium IDE and the other using selenium webdriver. For the IDE, it was quite easy but I encountered some challenges while automating the successful login test case using selenium webdriver.

I was able to apply the skills and theoretical knowledge gained in the course of this training and I am glad I can further develop my skills to land my first software testing job.

I want to thank the SDA team and all instructors for the effort they have put into training us during the last 4months. I have learnt a lot and I am glad I passed my ISTQB certification exam and now a certified tester even before the end of the training.