

SOFTWARE VERIFICATION, VALIDATION AND TESTING

TESTING DOCUMENTATION

W3SCHOOLS ONLINE WEB TUTORIALS TESTING

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1. Introduction

1.1. About the Project

W3Schools is an online web page that provides free tutorials for future web developers, covering all the aspects of web development. It also offers a various courses and certificates after completion. W3Schools is the largest web developer site on the internet with 3 billion pages displayed each year and 65 million visitors each month.

Link to the website: <https://www.w3schools.com/>

1.2. Project Functionalities and Screenshots

About W3Schools

In the About section of the page, you can familiarize yourself with the concept of W3Schools page, what is it, what it offers and what are Terms and Privacy.

The screenshot shows the 'About Us' page of W3Schools. The top navigation bar includes links for HTML, CSS, JavaScript, SQL, Python, Java, PHP, Bootstrap, How To, W3.CSS, C, C++, C#, React, and R. A sidebar on the left lists 'About Us', 'About W3Schools' (which is highlighted in green), 'About Terms', and 'About Privacy'. The main content area features several sections: 'Try It Yourself' (describing the online editor), 'W3Schools is Free' (stating it's a completely free resource), 'You Can Help' (encouraging users to report errors), and 'Add a Link to Us' (requesting users to add links to the site). A footer at the bottom of the page asks for links to be added.

The screenshot shows the 'Site Usage Terms' page of W3Schools. The top navigation bar and sidebar are identical to the 'About Us' page. The main content area contains the 'Terms of Service' text, which states that by agreeing to the terms, users represent they are at least the age of majority in their state or province of residence, or that they are the age of majority in their state or province of residence and have given consent to allow minor dependents to use the site. It also covers privacy policy, legal jurisdiction, and prohibited uses. A sidebar on the right features a 'Get started' button and a 'Making PROGRESS?' section with a progress bar and a 'Keep track of it on MyLearning!' button.

[Home](#) [HTML](#) [CSS](#) [JAVASCRIPT](#) [SQL](#) [PYTHON](#) [JAVA](#) [PHP](#) [BOOTSTRAP](#) [HOW TO](#) [W3.CSS](#) [C](#) [C++](#) [C#](#) [REACT](#) [R](#)

About Us
About W3Schools
About Terms
About Privacy

This Privacy Policy describes how your personal information is collected, used, and shared when you visit or make a purchase from w3schools.com (the "Site").

Personal information we collect

When you visit the Site, we automatically collect certain information about your device, including information about your web browser, IP address, time zone, and some of the cookies that are installed on your device. Additionally, as you browse the Site, we collect information about the individual web pages or products that you view, what websites or search terms referred you to the Site, and information about how you interact with the Site. We refer to this automatically-collected information as "Device Information".

We collect Device Information using the following technologies:

- "Cookies" are data files that are placed on your device or computer and often include an anonymous unique identifier. For more information about cookies, and how to disable cookies, visit <http://www.allaboutcookies.org>.
- "Log files", and User Accounts, track actions occurring on the Site, and collect data including your IP address, browser type, Internet service provider, referring/exit pages, and date/time stamps.
- "Web beacons", "tags", and "pixels" are electronic files used to record information about how you browse the Site.

Additionally when you make a purchase or attempt to make a purchase through the Site, we collect certain information from you, including your name, billing address, shipping address, payment information (including credit card numbers, email address, and phone number). We refer to this information as "Order Information".

Personal User Information

When we talk about "Personal Information" in this Privacy Policy, we are talking both about Device Information and Order Information.

Sign up and Log in

You can sign up for free and log in to your account to easily view your progress with lectures and exercises, and also to see your cart when buying certificates.

[Tutorials ▾](#) [References ▾](#) [Exercises ▾](#) [Videos](#)

[Sign Up](#) [Upgrade](#) [Get Certified](#) [Create Website](#) [Log in](#)

Improve Your Learning Experience

[Sign Up For Free](#)

 **My Learning**

Store & track all your student activities in one place

 **Public Profile**

Show your coding skills to the world

 **Community**

Connect with thousands of W3Schoolers

 **Spaces - 30 day Trial**

Build and host exciting projects and gain experience

[W3schools](#)

Sign up

Email [Already have an account? Log in](#)

Password [Show](#)

One lowercase character One uppercase character One number One special character 8 characters minimum

Email me with news and updates

[Sign up for free](#)

By clicking the "Sign up for free" button, you are creating an account, and agree to W3Schools' [Terms of Service](#) and [Privacy Policy](#)

© 1999 - 2023 W3schools. All rights reserved. [Cookie policy](#), [Privacy](#) and [Terms](#).

[Profile](#) [Help](#)

Log in

Email Need an account? [Sign up](#)

Password [Show](#)

Log in

[Forgot password?](#)


Help

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Forum section

In the Forum section of the page, you can discuss with other members of the page about various topics related to the tutorials or general discussions. You can also search for the upcoming events and even create ones by yourself.

The screenshot shows the W3Schools forum section. At the top, there is a navigation bar with the W3schools logo, a search bar, and links for "Existing user? Sign in" and "Sign Up". Below the navigation bar, there is a secondary navigation menu with links for "Forums", "Events", "Guidelines", "Staff", "Online Users", and "Leaderboard".

The main content area is titled "Forums" and displays three forum categories:

- W3Schools**
 - General**: Discuss W3Schools.com. 32.2k posts. Last post by Mekaboo, January 15.
 - Suggestions**: How can we improve W3Schools.com. 5.2k posts. Last post by Nogaroid, January 14.
 - Critiques**: Offer constructive criticism on web sites posted by members here. 4.4k posts. Last post by Andrewsam, March 26, 2022.
- HTML Forums**

The screenshot shows the W3Schools Events section. At the top, there's a navigation bar with links for W3Schools.com, Browse, Activity, Leaderboard, Forums, Events, Guidelines, Staff, Online Users, and Leaderboard. A search bar is also present. Below the navigation, a breadcrumb path shows 'Home > Events'. On the right, there are icons for 'All Activity' and a magnifying glass. The main area is titled 'Events' and contains a 'Search Events' form with fields for 'FROM' (dd.mm.gggg), 'TO' (dd.mm.gggg), 'TYPE' (All), and a 'Search' button. Below this is a 'Browse By Month' section with a horizontal menu for JAN 2023, FEB 2023, MAR 2023, APR 2023, MAY 2023, JUN 2023, JUL 2023, AUG 2023, SEP 2023, OCT 2023, NOV 2023, and DEC 2023. A message 'No events scheduled this month' is displayed. At the bottom, there's another breadcrumb path 'Home > Events' and a link for 'All Activity'.

Newsletter section

In the newsletter section of the page, you can subscribe to be monthly updated and informed about great deals, exclusive content and new updates on the page.

The screenshot shows a newsletter sign-up form. It features a large 'W3schools' logo at the top left. The main heading is 'Upgrade Your Learning'. Below it is a sub-headline 'Subscribe Now to W3Schools Monthly Newsletter to Access Exclusive Content'. There is a text input field labeled 'e-mail' and a checkbox that says 'I agree to receive your newsletters and accept the [data privacy statement](#)*'. A yellow 'SUBSCRIBE' button is located below the checkbox. To the right, there's a graphic with the text 'BE THE FIRST TO DISCOVER OUR UPDATES' and the 'W3schools' logo. A red call-to-action button says 'Get \$25'. Below the main form, there are two sections: 'Programming Tips & Tricks' and 'Tips and Tricks'.

Color Picker

The Color Picker section of the page is all about the HTML Colors, it offers all shades of color, multiple colors, name for each one of them, as well as hex names.

The screenshot shows the W3Schools Color Picker section. The main title is 'Color Picker' with the subtitle 'W3Schools' famous color picker:'. Below this is a large, colorful hexagonal color picker. The background of the section is light pink.

Colors Tutorial

- Colors HOME
- Color Names
- Color Values
- Color Groups
- Color Shades
- Color Picker**
- Color Mixer
- Color Converter
- Color RGB
- Color HEX
- Color HSL
- Color HWB
- Color CMYK
- Color NCol
- Color Gradient
- Color Theory
- Color Wheels
- Color currentcolor
- Color Hues
- Color Schemes
- Color Palettes
- Color Brands
- Color W3.CSS

Pick a Color:

Selected Color:

Black Text
Shadow
White Text
Shadow

#990033
rgb(153, 0, 51)
hsl(340, 100%, 30%)

Lighter / Darker:

100%	#ffffff
95%	#ffe6ee
90%	#ffccdd
85%	#ffb3cc
80%	#ff99bb
75%	#ff80aa
70%	#ff6699
65%	#ff4d88
60%	#ff3377
55%	#ff1a66
50%	#ff0055
45%	#e6004c
40%	#cc0044
35%	#b3003b
30%	#990033
25%	#80002a
20%	#660022
15%	#4d0019
10%	#330011
5%	#1a0008
0%	#000000



Upgrade your learning journey for only \$4.99
[Find out more](#)

COLOR PICKER



[f](#) [i](#) [in](#) [m](#)

Get certified by completing a course today!



Colors Tutorial

- Colors HOME
- Color Names
- Color Values
- Color Groups
- Color Shades
- Color Picker
- Color Mixer**
- Color Converter
- Color RGB
- Color HEX
- Color HSL
- Color HWB
- Color CMYK
- Color NCol
- Color Gradient
- Color Theory
- Color Wheels
- Color currentcolor
- Color Hues
- Color Schemes
- Color Palettes
- Color Brands
- Color W3.CSS

Select colors:

Top color: #FF6699

Bottom color: #660033

#ff6699
#f76194
#f05c8f
#e8578a
#e05285
#d94c80
#d1477a
#c94275
#c2d770
#ba386b
#b23366
#ab2e61
#a3295c
#9c2457
#941f52
#8c1a4c
#851447
#7d0f42
#750a3d
#6e0538
#660033



Upgrade your learning journey for only \$4.99
[Find out more](#)

COLOR PICKER



[f](#) [i](#) [in](#) [m](#)

Get certified by completing a course today!



Browse Templates section

You can find here various different web site templates here. You can see demo versions, as well as the code for them.

Web Templates

Browse our selection of free responsive HTML Templates



[Browse Templates](#)

HTML CSS JAVASCRIPT SQL PYTHON JAVA PHP BOOTSTRAP HOW TO W3.CSS C C++ C# REACT R

You are free to modify, save, share, and use them in all your projects.

COLOR PICKER

W3.CSS Color Schemes
W3.CSS Color Themes
W3.CSS Color Generator

Web Building

Web Intro
Web HTML
Web CSS
Web JavaScript
Web Layout
Web Band
Web Catering
Web Restaurant
Web Architect

Examples

W3.CSS Examples
W3.CSS Demos
[W3.CSS Templates](#)

References

W3.CSS Reference
W3.CSS Downloads

Band Template

Demo Try it Yourself

Get certified by completing a course today!

Get started

HOME BAND TOUR CONTACT MORE ▾

TOUR DATES

Remember to book your tickets!

September	Sold out
October	Sold out
November	

3

New York
Fri 27 Nov 2016
Praesent tincidunt sed tellus ut rutrum sed vitae justo.
[Buy Tickets](#)

Paris
Sat 28 Nov 2016
Praesent tincidunt sed tellus ut rutrum sed vitae justo.
[Buy Tickets](#)

San Francisco
Sun 29 Nov 2016
Praesent tincidunt sed tellus ut rutrum sed vitae justo.
[Buy Tickets](#)

```

<!-- The Tour Section -->


## TOUR DATES



Remember to book your tickets!



- Sold out
- Sold out
- 3



![New York](w3images/newyork.jpg)

New York



Fri 27 Nov 2016



Praesent tincidunt sed tellus ut rutrum sed vitae justo.



Buy Tickets



![Paris](w3images/paris.jpg)

Paris



Sat 28 Nov 2016

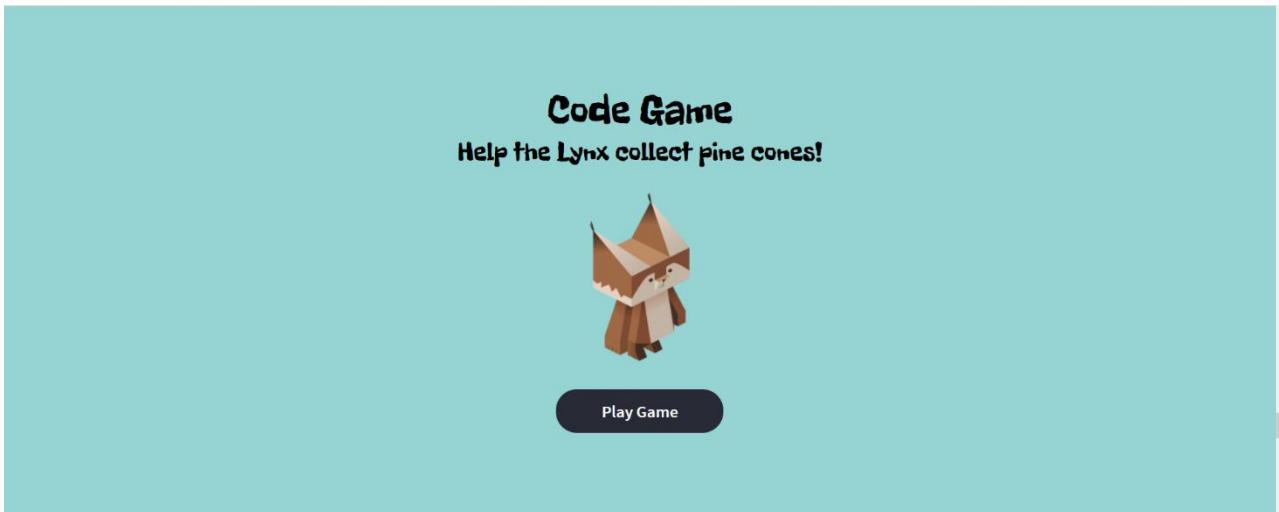


Praesent tincidunt sed tellus ut rutrum sed vitae justo.


```

Play Game

You can relax a little bit by playing this amazing and very easy game. It will be unique experience for sure, and you can even play a game music in the background.



Code Game: Help the Lynx collect pine cones!

LEVEL 1

Click the **blue arrow** to insert it in the code panel.
Click the **Play** button to execute the commands.

CODE PANEL

→
→▶ Play code

Select level

- + ⌂ ⌂

Tutorials

There are various tutorials for web development on the page. We will focus on HTML Tutorial in this testing and it sure is The experience.

The screenshot shows the W3Schools website's 'Tutorials' section. At the top, there are navigation links for 'References', 'Exercises', 'Videos', and user account options ('Sign Up', 'Upgrade', 'Get Certified', 'Create Website', 'Log in'). Below the header, a large 'Tutorials' heading is centered. The main content area is organized into four columns:

- HTML and CSS**: Includes links to Learn HTML, Learn CSS, Learn RWD, Learn Bootstrap, Learn W3.CSS, Learn Colors, Learn Icons, Learn Graphics, Learn SVG, Learn Canvas, Learn How To, and Learn Sass.
- JavaScript**: Includes links to Learn JavaScript, Learn jQuery, Learn React, Learn AngularJS, Learn JSON, Learn AJAX, Learn AppML, Learn W3.JS, Learn Python, Learn Java, Learn C, Learn C++, Learn C#, Learn R, and Learn Kotlin.
- Server Side**: Includes links to Learn SQL, Learn MySQL, Learn PHP, Learn ASP, Learn Node.js, Learn Raspberry Pi, Learn Git, Learn MongoDB, Learn AWS Cloud, Create a Website (NEW), Where to Start, Web Templates, Web Statistics, Web Certificates, and Web Development.
- Data Analytics**: Includes links to Learn AI, Learn Machine Learning, Learn Data Science, Learn NumPy, Learn Pandas, Learn SciPy, Learn Matplotlib, Learn Statistics, Learn Excel, and Learn Google Sheets.

The screenshot shows the 'HTML Tutorial' page. The left sidebar contains a navigation menu with many sub-items under 'HTML HOME'. The main content area features a heading 'Easy Learning with HTML "Try it Yourself"' and a sub-section titled 'Example' with the following HTML code:

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Below the code is a green 'Try it Yourself' button. A note says 'Click on the "Try it Yourself" button to see how it works.'

The screenshot shows the 'HTML Tutorial' page. The left sidebar contains a navigation menu with many sub-items under 'HTML HOME'. The main content area features a note about the `a` tag and its href attribute, followed by an 'Example' section with the following HTML code:

```
<a href="https://www.w3schools.com">Visit W3Schools</a>
```

Below the code is a green 'Try it Yourself' button. A note says 'You will learn more about links in our [HTML Links chapter](#)'.

A section titled 'The src Attribute' follows, with a note about the `img` tag and its src attribute, followed by an 'Example' section with the following HTML code:

```

```

Below the code is a green 'Try it Yourself' button. A note says 'There are two ways to specify the URL in the `src` attribute:'

Exercises

There are various exercises for web development on the page. We will focus on HTML Exercise in this project and you will see that it is easy to access them and easily understandable.

The screenshot shows the W3Schools website's navigation bar at the top, followed by a large grid titled "Exercises and Quizzes". The grid is organized into four columns: Exercises, Quizzes, Courses, and Certificates. Each column lists various topics such as HTML, CSS, JavaScript, Python, etc., with corresponding quizzes or courses.

Exercises	Quizzes	Courses	Certificates
HTML Exercises	HTML Quiz	HTML Course	HTML Certificate
CSS Exercises	CSS Quiz	CSS Course	CSS Certificate
JavaScript Exercises	JavaScript Quiz	JavaScript Course	JavaScript Certificate
Python Exercises	Python Quiz	Front End Course	Front End Certificate
SQL Exercises	SQL Quiz	Python Course	Python Certificate
PHP Exercises	PHP Quiz	SQL Course	SQL Certificate
Java Exercises	Java Quiz	PHP Course	PHP Certificate
C Exercises	C Quiz	Java Course	Java Certificate
C++ Exercises	C++ Quiz	C++ Course	C++ Certificate
C# Exercises	C# Quiz	C# Course	C# Certificate
jQuery Exercises	jQuery Quiz	jQuery Course	jQuery Certificate
React.js Exercises	React.js Quiz	React.js Course	React.js Certificate
MySQL Exercises	MySQL Quiz	Bootstrap 4 Course	MySQL Certificate
Bootstrap 5 Exercises	Bootstrap 5 Quiz	Bootstrap 3 Course	Bootstrap 5 Certificate
Bootstrap 4 Exercises	Bootstrap 4 Quiz	NumPy Course	Bootstrap 4 Certificate
Bootstrap 3 Exercises	Bootstrap 3 Quiz	Pandas Course	Bootstrap 3 Certificate
NumPy Exercises	NumPy Quiz	TypeScript Course	TypeScript Certificate

The screenshot shows the main "Exercises and Quizzes" page. At the top, there is a title "Exercises and Quizzes" and a subtitle "Test your skills!". Below the subtitle, there are two large buttons: a green one labeled "Exercises" and a yellow one labeled "Quizzes".

The screenshot shows a detailed view of an HTML exercise. On the left, there is a sidebar with a list of HTML topics: HTML Attributes, HTML Headings, HTML Paragraphs, HTML Styles, HTML Formatting, HTML Quotations, HTML Comments, and HTML CSS. The "HTML Attributes" section is currently selected. The main area displays the exercise content:

Exercise:
Add a "tooltip" to the paragraph below with the text "About W3Schools".

```
<p>About W3Schools</p>
```

Below the code editor, there are two buttons: "Submit Answer" and "Show Answer".

Completed 0 of 88 Exercises:

- HTML Attributes
- HTML Headings
- HTML Paragraphs
- HTML Styles
- HTML Formatting
- HTML Quotations
- HTML Comments
- HTML CSS
- HTML Links
- HTML Images
- HTML Tables
- Exercise 1

```
<table>
<tr>
<th>Name</th>
<th>Age</th>
</tr>
<tr>
<td>Jill</td>
<td>Smith</td>
<td>50</td>
</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
</table>
```

Certificates

W3Schools even offers you to buy their certificate after finishing the course. There are many discounts you can acquire on the page and apply them in the shopping cart.

All categories ▾ What are you looking for? Get started Cart

Certification Courses Certification Exams Coding Workspace My courses

Certification Course Catalog

Filters Sort by Featured View as grid list

Price	From	To
\$	From	To

Product type
W3Schools Full Access

Full Access

\$586.00

W3Schools Full Access

Web App Development

\$295.00

Learn Web Application Development

Frontend Development

\$190.00

Learn Front end Development

Data Analytics

\$190.00

Learn Data Analytics

Get \$25

2. Test Plan

2.1. Scope

We plan on covering almost the entire page, all the main features of it and a little bit of fun features as well. We are planning to make this testing fun and enjoyable and learn a lot about Selenium testing through working on this project.

2.2. Testing Environment and Tools

We are using Selenium and ChromeDriver to test the website. Selenium is an open source umbrella project that supports browser automation. Additionally, it offers a test domain-specific language that

can be used to build tests in a variety of well-known programming languages, including Java, which we used. We used Selenium in Windows and for IDE we used Eclipse.

3. Test Execution

3.1. Visit the W3Schools “About” section

Open the link of the page and go to the about section to familiarize yourself with the w3schools page.

Test Name: About W3Schools Test				
Description: Check if the search bar is working and can it lead us to “About” section				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open the Home page. 2. Open the search bar and type “About” 3. Click on the search button 4. Assert that the first link is “About w3Schools” and click on it 5. Click on the “About Terms” and scroll to see “Using W3Schools in Teaching” 6. Navigate back to “About” 7. Scroll to see “Easy Learning” 8. Scroll to table at the end and assert that the source is “Google Analytics” 9. Return to Home page 10. Close “About” pop up window	- word “about”	To be successfully guided through the pages and to be able to see the elements we were looking for.	The user has been successfully guided through the pages and was able to see the elements he was looking for.	PASS
Notes: Selenium control needs to be switched between Home page and About section.				

```

@Test
void testAbout() throws InterruptedException {
    webDriver.get(baseUrl);
    Thread.sleep(1000);

    // this is the control to home page:
    String tabHomee = webDriver.getWindowHandle();
    System.out.println(tabHomee);

    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    // open the search tab
    webDriver.findElement(By.xpath("//html/body/div[3]/div[3]/a[1]/i")).click();
    Thread.sleep(1000);

    // type About and click on the search button
    webDriver.findElement(By.id("gsc-i-id1")).sendKeys("About");
    Thread.sleep(2000);
    webDriver.findElement(By.xpath("//html/body/div[1]/div/div/form/table/tbody/tr/td[2]")).click();
    Thread.sleep(2000);

    // assert that the first link is About w3Schools and click on it
    String aboutW3 = webDriver.findElement(By.xpath("//html/body/div[1]/div/div/div[1]/div[6]/div[2]/div/div[1]/div[1]/div[1]/div/a")).getText();
    assertEquals("About W3Schools", aboutW3);
    webDriver.findElement(By.xpath("//html/body/div[1]/div/div/div[1]/div[6]/div[2]/div/div[1]/div[1]/div[1]/div/a")).click();
    Thread.sleep(3000);

    // we open the About page, and give it selenium control
    // About page
    for (String tabAbout : webDriver.getWindowHandles()) {
        if (!tabAbout.equals(tabHomee)) {
            webDriver.switchTo().window(tabAbout);
            break;
        }
    }

    // find about terms and scroll to "Using w2schools in Teaching" and navigate back
    webDriver.findElement(By.linkText("About Terms")).click();
    Thread.sleep(2000);

    WebElement teaching = webDriver.findElement(By.xpath("//html/body/div[7]/div[1]/div[1]/h2[5]"));
    js.executeScript("arguments[0].scrollIntoView(true);", teaching);
    Thread.sleep(3000);

    webDriver.navigate().back();

    // scroll to "easy learning" to "read"
    WebElement learning = webDriver.findElement(By.xpath("//html/body/div[7]/div[1]/div[1]/h2[2]"));
    js.executeScript("arguments[0].scrollIntoView(true);", learning);
    Thread.sleep(3000);

    // scroll to table at the end and assert that the source is Google Analytics
    WebElement w3SchoolsDemographics = webDriver.findElement(By.xpath("//html/body/div[7]/div[1]/div[1]/h2[7]"));
    js.executeScript("arguments[0].scrollIntoView(true);", w3SchoolsDemographics);
    Thread.sleep(1000);

    String source = webDriver.findElement(By.xpath("//html/body/div[7]/div[1]/div[1]/p[18]")).getText();
    assertEquals("Source: Google Analytics", source);
    Thread.sleep(1000);

    // return to home page
    webDriver.navigate().back();
    webDriver.switchTo().window(tabHomee);
    Thread.sleep(2000);

    // on the home page, we need to close the About pop up window
    webDriver.findElement(By.xpath("//html/body/div[1]/div/div/div/div[1]/div[1]")).click();
    Thread.sleep(2000);

```

3.2. Sing up and Log in to the W3Schools page

The user wants to be able to sign up and log in to the W3Schools page to be able to check their process of learning.

Test Name: Test Sign up and Log in				
Description: Check if the log in button is clickable and can the user sign up from there. Check if the input fields and checkbox are working.				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:

<p>1. Open the Home page</p> <p>2. Click on the Log in button.</p> <p>3. Click on the Sign up link text.</p> <p>4. Enter the email and create the password</p> <p>5. Unselect the checkbox for sending updates</p> <p>6. Click on the Sign up button.</p> <p>7. Click on the button Log in</p> <p>8. Enter email and password</p> <p>9. Click on the log in button</p>	<ul style="list-style-type: none"> - email - password 	<p>To be able to open Log in by clicking on the button and to be able to open Sign up part from the Log in. To successfully Sign up to the page and then log in. To be able to unselect the checkbox in the sign up process</p>	<p>The user can successfully sign up to the page and then log in.</p>	PASS
--	---	---	---	------

Notes: There will also be a little alert note to include a JavaScript

```

@Test
void testLogin() throws InterruptedException {

    webDriver.get(baseUrl);
    Thread.sleep(2000);

    // click on the log in button
    webDriver.findElement(By.id("w3loginbtn")).click();
    Thread.sleep(2000);

    // sign up button
    webDriver.findElement(By.xpath("//*[@id=\"root\"]//div/div/div[4]/div[1]/div/div[2]/form/div[1]/div[1]/span/span")).click();
    Thread.sleep(1000);

    //assert that it says Sign up on the page
    String signUp = webDriver.findElement(By.xpath("//*[@id=\"root\"]//div/div/div[4]/div[1]/div/div[1]/h1")).getText();
    assertEquals("Sign up", signUp);

    // we sign up
    webDriver.findElement(By.name("email")).sendKeys("merjema99mujic@gmail.com");
    Thread.sleep(3000);
    webDriver.findElement(By.name("new-password")).sendKeys("Somepassword123.");
    Thread.sleep(2000);

    // this is for the check box, unselect it
    webDriver.findElement(By.xpath("//*[@id=\"emailConsentCheckBox-wrapper\"]//div/label/span")).click();
    Thread.sleep(2000);

    // sign in button
    webDriver.findElement(By.tagName("button")).click();
    Thread.sleep(2000);
}

```

```

// sign in button
webDriver.findElement(By.tagName("button")).click();
Thread.sleep(2000);

// we are back at the home page
String urlHome = webDriver.getCurrentUrl();
assertEquals("https://www.w3schools.com/", urlHome);
Thread.sleep(2000);

// now we log in
webDriver.findElement(By.id("w3loginbtn")).click();
Thread.sleep(3000);

// assert that it says "Log in" on the window
String logIn = webDriver.findElement(By.xpath("//*[@id=\"root\"]//div/div/div[4]/div[1]/div/div[1]/h1")).getText();
assertEquals("Log in", logIn);

webDriver.findElement(By.name("email")).sendKeys("merjema99mujic@gmail.com");
Thread.sleep(2000);

webDriver.findElement(By.name("current-password")).sendKeys("Somepassword123.");
Thread.sleep(2000);

// log in button
webDriver.findElement(By.tagName("button")).click();
//Thread.sleep(3000);

// and we are on the home page again, ready to do more stuff
JavascriptExecutor js = (JavascriptExecutor) webDriver;
js.executeScript("alert('w3Schools, Let us see what secrets do you have')");
Thread.sleep(3000);

}

```

3.3. Visit the “Forum” section

The user wants to be able to visit the “Forum section” on the W3Schools page and to see the events that are planned in the following year.

Test Name: Forum Test				
Description: Check if “Forum” button works and if it takes the user to the new tab. Then check if the “toggle” buttons, “overview” button and “month” buttons are working and if the user can choose online events with “Select” property in Selenium.				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open the Home page 2. Find the Forum button and click on it 3. Find the “toggle” buttons and click on them, switch them “off” 4. Click on the Events button 5. Choose the Online events in “Type” 6. Click on the Search button 7. Assert that there are no online events 8. Go back to overview by		The user will be taken to Forum page and he will see new layout without Forum discussions and the user will see the online events and events that are planned for April month.	The user is taken to Forum tab and he sees new layout without Forum discussions and he sees the online events and events that are planned for April month.	PASS

clicking on the button
 9. Click on the button
 “APR” to search for the
 events in April month
 10. Assert that there are
 no events in April
 11. Navigate back to
 “Forum” section
 12. Go back to Home
 page

Notes: Selenium control needs to be switched between Home page and Forum section. There will be no online events nor events in the April month on the page.

```

@Test
void testForum() throws InterruptedException {
  webDriver.get(baseUrl);
  Thread.sleep(1000);

  //      HOME PAGE

  // this is the control to home page:
  String tabHomePage = webDriver.getWindowHandle();
  System.out.println(tabHomePage);

  JavascriptExecutor js = (JavascriptExecutor) webDriver;

  WebElement forumLink = webDriver.findElement(By.linkText("FORUM"));
  js.executeScript("arguments[0].scrollIntoView(true);", forumLink);
  Thread.sleep(1000);

  // we open the Forum page, and give it selenium control
  forumLink.click();

  //      FORUM PAGE
  for (String tabForum : webDriver.getWindowHandles()) {
    if (!tabForum.equals(tabHomePage)) {
      webDriver.switchTo().window(tabForum);
      break;
    }
  }
}

```

```

// we will toggle all the categories (switch them "off") on the Forum page
webDriver.findElement(By.xpath("//html/body/main/div/div/div/section/ol/li[1]/h2/a[1]")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("//html/body/main/div/div/section/ol/li[2]/h2/a[1]")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("//html/body/main/div/div/section/ol/li[3]/h2/a[1]")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("//html/body/main/div/div/section/ol/li[4]/h2/a[1]")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("//html/body/main/div/div/section/ol/li[5]/h2/a[1]")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("//html/body/main/div/div/section/ol/li[6]/h2/a[1]")).click();
Thread.sleep(1000);

// we will go to the events now, to look for the event in specific time
webDriver.findElement(By.linkText("Events")).click();
Thread.sleep(2000);

// look for the online events in "Type"
Select onlineEvent = new Select(webDriver.findElement(By.name("show")));
onlineEvent.selectByValue("online");
Thread.sleep(2000);

// click on Search button
webDriver.findElement(By.xpath("//*[@id=\"ipsLayout_mainArea\"]/div/div[2]/div/div/form/ul/li[4]/button")).click();
Thread.sleep(1000);

//assert that there are no online events
String noEvent = webDriver.findElement(By.xpath("//html/body/main/div/div/div/div[4]/div[3]")).getText();
assertEquals("There were no events matching your search", noEvent);
Thread.sleep(4000);

//back to overview
webDriver.findElement(By.linkText("Back to overview")).click();
Thread.sleep(1000);

// now look for the event in april
webDriver.findElement(By.xpath("//html/body/main/div/div/div/div[3]/section/div/div[1]/a[4]/span[1]")).click();
Thread.sleep(2000);

//assert that there are no events in april
String noEventApril = webDriver.findElement(By.xpath("//html/body/main/div/div/div/div[3]/section/div/div[2]/ul/div")).getText();
assertEquals("No events scheduled this month", noEventApril);
Thread.sleep(3000);

// navigate back to forum
webDriver.navigate().back();

// close the tab and give the selenium control back to Home page
webDriver.close();

webDriver.switchTo().window(tabHomePage);
Thread.sleep(2000);

}

```

3.4. Visit the “Newsletter” section

The user wants to be able to visit the “Newsletter section” on the W3Schools page and subscribe to monthly newsletter to access exclusive content.

Test Name: Newsletter Test

Description: Check if “Newsletter” button works and if it takes the user to the new tab. Then check if the input field is working and if the user can click on the checkbox to agree to receive emails.

Pre-condition(s):

Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open the Home page 2. Scroll to the “Newsletter” button and click on it	- email	The user will see Newsletter button on the Home page and will be taken	The user is taken to the Newsletter page and he can subscribe to receive	PASS

<p>3. Assert that the text says “Subscribe Now to W3Schools Monthly Newsletter to Access Exclusive Content”</p> <p>4. Find email input and type the email</p> <p>5. Click on the checkbox to accept data privacy statement</p> <p>6. Click the subscription button</p> <p>7. Close the “Newsletter” section</p> <p>8. Switch to Home page</p>	<p>to the Newsletter page. The user will be able to subscribe to receive monthly updates</p>	<p>monthly updates</p>
---	--	------------------------

Notes: Selenium control needs to be switched between Home page and Newsletter section.

```

@Test
void testNewsletter() throws InterruptedException {
    webDriver.get(baseUrl);
    Thread.sleep(2000);

    // this is the control to home page:
    String tabHomee = webDriver.getWindowHandle();
    System.out.println(tabHomee);

    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    // now scroll to newsletter and click on it

    WebElement newsletter = webDriver.findElement(By.linkText("NEWSLETTER"));
    js.executeScript("arguments[0].scrollIntoView(true);", newsletter);
    Thread.sleep(3000);
    newsletter.click();
    Thread.sleep(2000);

    // give the selenium control to newsletter

    for (String tabNewsletter : webDriver.getWindowHandles()) {
        if (!tabNewsletter.equals(tabHomee)) {
            webDriver.switchTo().window(tabNewsletter);
            break;
        }
    }
}

```

```

// assert that the text in p tag is "Subscribe Now to W3Schools Monthly Newsletter to Access Exclusive Content"
String subscribe = webDriver.findElement(By.xpath("//html/body/main/div[1]/p")).getText();
assertEquals("Subscribe Now to W3Schools Monthly Newsletter to Access Exclusive Content", subscribe);

// find email input, type your mail
webDriver.findElement(By.id("EMAIL")).sendKeys("merjema99mujic@gmail.com");
Thread.sleep(2000);

// accept the data privacy statement
webDriver.findElement(By.id("OPT_IN")).click();
Thread.sleep(3000);

// and click the button subscribe
webDriver.findElement(By.xpath("//html/body/main/div[1]/div/div[1]/div/div/div[4]/form/div[3]/div/button"))
.click();
Thread.sleep(3000);

// close the tabNewsletter
webDriver.close();

// and switch to home page
webDriver.switchTo().window(tabHomee);
Thread.sleep(2000);
}

```

3.5. Play with colors

The user wants to be able to visit the “Color Picker” on the W3Schools page, learn something about the colors in HTML and then apply the knowledge to Color Mixer.

Test Name: Colors Test				
Description: Check if “Color Picker” is available on the page and proceed to the new page. Check if the lectures are available by clicking on the buttons and then go to “Color Mixer” to check if we can apply the knowledge through the input fields and submit buttons. Additionally, we will check if the radio buttons can be selected by changing the Theme of the page to the “Dark” Theme				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open the Home page 2. Find the Theme icon on top of the page and click on it 3. Assert that both options under the button are selected 4. Scroll to Color picker and assert that we have found the element 5. Click on the “Color Picker” button 6. Click on the “Color Values” 7. Find one color (black) and assert that we have found it 8. Sort colors by name	- bottom color - top color	The user will see the Color Picker on the Home page and will be taken to new page when clicking on it. The user will be able to click on the lectures about the colors and will be able to sort them by name. When clicking on the Color Mixer button the user will also be able to input the previously learned colors to Color Mixer and sees the mix of two colors.	The user sees the Color Picker on the Home page and is taken to new page when clicking on it. The user is able to click on the lectures about the colors and is able to sort them by name. When clicking on the Color Mixer button the user is also able to input the previously learned colors to Color Mixer and sees the mix of two colors.	PASS

<p>9. Get the current link of the page</p> <p>10. Scroll to the second color (misty rose)</p> <p>11. Click on the “Color Mixer”</p> <p>12. Type the two colors that we have learned and submit them by clicking on the button</p> <p>13. Select the other two colors on the page and submit them</p> <p>14. Navigate back to Home page and assert that we are on the Home page</p>	<p>Mixer and see the mix of two colors. Additionally, the user will be able to pick two different colors by clicking on them on the page and will be able to see the mix of these two new colors.</p>	<p>Additionally, the user is able to pick two different colors by clicking on them on the page and is able to see the mix of these two new colors.</p>	
--	---	--	--

Notes: There will also be a little alert note to include a JavaScript

```
@Test
void testColors() throws InterruptedException {
    // Let's learn something about the colors!
    webDriver.get(baseUrl);
    Thread.sleep(1000);

    // find the Theme picker, on the top of the page:
    webDriver.findElement(By.cssSelector("body > div.w3-bar.w3-card-2.notranslate > div.w3-right.w3-padding-16.ext_icon_container >
        + " a.w3-bar-item.w3-button.bar-icon-hover.w3-right.w3-hide-small > i")).click();
    Thread.sleep(1000);

    // now assert that both options under the button are selected
    assertTrue(webDriver.findElement(By.id("radio_darkpage")).isSelected());
    assertTrue(webDriver.findElement(By.id("radio_darkcode")).isSelected());
    Thread.sleep(1000);

    // on Home page, scroll to Color Picker and assert that we found the element:
    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    js.executeScript("window.scrollBy(0, 8300);");
    Thread.sleep(2000);

    String colorPicker = webDriver.findElement(By.xpath("//*[@id='main']/div[13]/div/h4")).getText();
    assertEquals("W3Schools' famous color picker:", colorPicker);

    // open the color picker
    webDriver.findElement(By.xpath("//*[@id='main']/div[13]/div/a/img")).click();
    Thread.sleep(1000);
}
```

```

// we will find black color to see "the lecture" and assert that we have found it
String colorHex = webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/div[3]/div[1]/div/span/a")).getText();
assertEquals("#000000", colorHex);
Thread.sleep(2000);

// we will "learn" one more color and for this one we will sort colors by Color name
// and we will find the second color by Color name
webDriver.findElement(By.linkText("Click here to see the colors sorted by name")).click();
Thread.sleep(2000);

// we are now on a different page, so we will assert that and scroll to see the color
String colorNames = webDriver.getCurrentUrl();
assertEquals("https://www.w3schools.com/colors/colors_names.asp", colorNames);

js.executeScript("window.scrollBy(0, 4500);");
Thread.sleep(2000);

// this is our second color: #FFE4E1
String colorName = webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/div[3]/div[99]/div/span/a")).getText();
assertEquals("MistyRose", colorName);
Thread.sleep(2000);

// from this page, we go to color mixer to see these two colores mixed:
webDriver.findElement(By.linkText("Color Mixer")).click();
Thread.sleep(2000);

// scroll a little bit, so that we can see what is happening
js.executeScript("window.scrollBy(0, 390);");
Thread.sleep(3000);

// we send black to be the bottom color
webDriver.findElement(By.id("colorbottom")).clear();
webDriver.findElement(By.id("colortop")).clear();
webDriver.findElement(By.id("colorbottom")).sendKeys("#000000");
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/form/div/div[2]/div[3]/input[2]")).click();
Thread.sleep(3000);

// and other one to be top color
webDriver.findElement(By.id("colortop")).clear();
webDriver.findElement(By.id("colortop")).click();
webDriver.findElement(By.id("colortop")).sendKeys("#FFE4E1");
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/form/div/div[2]/div[1]/input[2]")).click();
Thread.sleep(4000);

// and we will also try 2 new colors, to see them mixed
// pick this 2 colors:
// bottom color: #660033
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/form/div/div[1]/div[3]/map/area[112]")).click();
Thread.sleep(3000);

// top color: #FF6699
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/form/div/div[1]/div[1]/map/area[90]")).click();
Thread.sleep(4000);

// now, navigate back to home and assert that we are back at home page
webDriver.get(baseUrl);
String homeLink = webDriver.getCurrentUrl();
assertEquals("https://www.w3schools.com/", homeLink);

// at the end, congratulations, you have finished the task successfully!
js.executeScript("alert('Congratulations! You learned something new about the colors.')");
Thread.sleep(3000);
}
}

```

3.6. “Browse Templates” section

The user wants to be able to browse Templates on the page to see the example of different kinds of templates and to try the demo versions of the templates.

Test Name: Templates Test				
Description: Check if the “Browse Templates” section is available for visiting and if the user can try the demo versions of two different templates. Additionally, check if the user is able to type data in input fields in templates and are the elements in the templates interactive				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:

			PASS
<p>1. Open the Home page</p> <p>2. Scroll to see “Web Templates” and assert that we have found that element</p> <p>3. Click on the button Browse Templates</p> <p>4. Scroll to see the first template</p> <p>5. Open the example template by clicking on the button Demo</p> <p>6. In the first template click on the TOUR section in the navigation bar</p> <p>7. Click on the Paris tour</p> <p>8. Book the tickets for two people by typing email and number of people in the input fields.</p> <p>8. Click on the button to pay the tickets</p> <p>9. Close the booking tab by clicking on the button Close</p> <p>10. Go back to Template browser tab by closing the first template example</p> <p>11. Scroll to find the second template example</p> <p>12. Click on the Demo button to open it</p> <p>13. In the second template, scroll to the first post on the page</p> <p>14. Like the post by clicking on the button Like</p> <p>15. Assert that the reply to post says “Great blog post! Following”</p> <p>16. Hide the reply by clicking on the button Replies</p> <p>17. Close the second template example</p> <p>18. Go back to Home page</p>	<ul style="list-style-type: none"> - email - number of people 	<p>The user will be able to open the “Browse Templates” section from the Home page and will be able to see the demo of the two different examples. Additionally, the user will be able to type into input fields in Template examples and to click on the buttons in template examples.</p>	<p>The user is able to open the “Browse Templates” section from the Home page and is able to see the demo of the two different examples. Additionally, the user is able to type into input fields in Template examples and to click on the buttons in template examples.</p>

Notes: Selenium control needs to be switched between the Template Browser tab and the Template

1 and 2. Additionally, in this test we will switch the theme to dark like we did in previous test example.

```
@Test
void testTemplates() throws InterruptedException {
    webDriver.get(baseUrl);
    Thread.sleep(1000);

    //      HOME PAGE

    // find the Theme picker, on the top of the page:
    webDriver.findElement(By.cssSelector("body > div.w3-bar.w3-card-2.notranslate > div.w3-right.w3-padding-16.ext_icon_container >
        + " a.w3-bar-item.w3-button.bar-icon-hover.w3-right.w3-hide-small > i")).click();
    Thread.sleep(1000);

    // now assert that both options under the button are selected
    assertTrue(webDriver.findElement(By.id("radio_darkpage")).isSelected());
    assertTrue(webDriver.findElement(By.id("radio_darkcode")).isSelected());
    Thread.sleep(1000);

    // on Home page, scroll to Web Templates and assert that we found the element:
    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    js.executeScript("window.scrollBy(0, 9870);");
    Thread.sleep(2000);

    String templateBrowser = webDriver.findElement(By.xpath("/html/body/div[5]/div[16]/h1")).getText();
    assertEquals("Web Templates", templateBrowser);

    // click on the button browse templates
    webDriver.findElement(By.linkText("Browse Templates")).click();
    Thread.sleep(1000);

    // we are now on the new page
    // this is the control to this tab:
    String tabTemplateBrowser = webDriver.getWindowHandle();
    System.out.println(tabTemplateBrowser);

    // now on this second tab:
    js.executeScript("window.scrollBy(0, 500);");
    Thread.sleep(2000);

    // find some Template to see (the first example):
    webDriver.findElement(By.linkText("Demo")).click();
    Thread.sleep(1000);

    // now switch selenium to this new link:

    //      SECOND PAGE: (second tab: tabTemplate1 -> tabTemplateBrowser)

    for (String tabTemplate1 : webDriver.getWindowHandles()) {
        if (!tabTemplate1.equals(tabTemplateBrowser)) {
            webDriver.switchTo().window(tabTemplate1);
            break;
        }
    }

    // on this new page, go to TOUR section from the navbar:
    webDriver.findElement(By.linkText("TOUR")).click();
    Thread.sleep(1000);

    // assert that the text says "TOUR DATES"
    String tourDates = webDriver.findElement(By.xpath("/html/body/div[3]/div[5]/div/h2")).getText();
    assertEquals("TOUR DATES", tourDates);
```

```

// now scroll to see better
js.executeScript("window.scrollBy(0, 50);");
Thread.sleep(2000);

// book tickets for 2 persons:
webDriver.findElement(By.xpath("/html/body/div[3]/div[5]/div/div/div[2]/div/button")).click();
Thread.sleep(2000);
webDriver.findElement(By.xpath("/html/body/div[3]/div[6]/div/div/input[1]")).sendKeys("3");
webDriver.findElement(By.xpath("/html/body/div[3]/div[6]/div/div/input[2]")).sendKeys("merjema99mujic@gmail.com");
Thread.sleep(2000);
webDriver.findElement(By.xpath("/html/body/div[3]/div[6]/div/div/button[1]")).click();
Thread.sleep(2000);

// and close the booking tab
webDriver.findElement(By.xpath("/html/body/div[3]/div[6]/div/div/button[2]")).click();
Thread.sleep(1000);

// and we will close the tabTemplate1:
webDriver.close();
Thread.sleep(1000);

// FIRST PAGE again (first tab again: tabTemplateBrowser -> tabTemplate2)

// and we switch Selenium control to the templateBrowser again
webDriver.switchTo().window(tabTemplateBrowser);
Thread.sleep(1000);

// second example will be the Fashion Blog Template:
// we need to scroll a little bit to see it
js.executeScript("window.scrollBy(0, 3300);");
Thread.sleep(2000);

```

```

// open the fashion blog in a new tab
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/div[12]/div/div/div[1]/a")).click();
Thread.sleep(2000);

// give selenium control to this tab:

// THIRD PAGE: (third tab: tabTemplate2 -> tabTemplateBrowser)

for (String tabTemplate2 : webDriver.getWindowHandles()) {
    if (!tabTemplate2.equals(tabTemplateBrowser)) {
        webDriver.switchTo().window(tabTemplate2);
        break;
    }
}

// scroll to first post on the page
js.executeScript("window.scrollBy(0, 2000);");
Thread.sleep(2000);

// like the post
webDriver.findElement(By.xpath("/html/body/div[2]/div/div[1]/div[1]/div[2]/p[3]/button")).click();
Thread.sleep(2000);

// assert that reply says "Great blog post! Following"
String blogReply = webDriver.findElement(By.xpath("/html/body/div[2]/div/div[1]/div[1]/div[2]/div/div[2]/p")).getText();
assertEquals("Great blog post! Following", blogReply);
Thread.sleep(1000);

// hide the blog comment
webDriver.findElement(By.id("myBtn")).click();
Thread.sleep(2000);

```

```

        // and now close the second Template
        webDriver.close();
        Thread.sleep(1000);

        // give the control back to the tabTemplateBrowser
        webDriver.switchTo().window(tabTemplateBrowser);
        Thread.sleep(1000);

        // navigate back to the HOME PAGE
        webDriver.navigate().back();
        Thread.sleep(3000);

    }

```

3.7. Play a Game

The user wants to Play a fun little game on the page. The user wants to be able to play the level of his choice and to play music of the game as well.

Test Name: Game Test				
Description: Check if the “Play Game” button is clickable and if leads to new tab in which you can actually play the game. In the game, check if the music button is clickable and will the music be played during the game. Additionally, check if other buttons, like play code or select level, are interactable as well.				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open the Home page 2. Scroll to the game and assert that we have found the element 3. Click on the button to play the game 4. Click on the music icon to play the music 5. The first level is played by clicking on the icon for arrow forward two times 6. After that, we play the code we have entered by clicking on the button 7. When the level is done, to select different level, click on the “retry” button 8. Then click on the “select level” button 9. Scroll to see the desired level and click on it 10. Next level (Turning) is played by clicking on		The user will be able to find the game on the Home page and will be able to open it. The user will be able to play the music of the game and will be able to play one level of each group by selecting the desired level.	The user is able to find the game on the Home page and is able to open it. The user is able to play the music of the game and is able to play one level of each group by selecting the desired level.	PASS

the arrow forward icons two times, then turn left icon, then again, the arrow forward two times

11. After that, we play the code we have entered by clicking on the button

12. When the level is done, to select different level, click on the “retry” button

13. Then click on the “select level” button

14. Scroll to see the desired level and click on it

15. Next level (Condition) is played by clicking on the arrow forward icons three times and then paw icon

16. After that, we play the code we have entered by clicking on the button

17. When the level is done, to select different level, click on the “retry” button

18. Then click on the “select level” button

19. Scroll to see the desired level and click on it

20. Next level (Looping) is played by clicking on the icon for loop and then on the arrow forward icon

21. After that, we play the code we have entered by clicking on the button

22. When the level is done, to select different level, click on the “retry” button

23. Then click on the “select level” button

24. Click on the final level

25. The Final level is played by clicking on the loop icon, then on the turn left icon and the on the

arrow forward icon three times
 26. Exit the level by clicking on the “retry” button
 27. And click on “select level” button
 28. Turn off the music by clicking on the music icon
 29. Close the game
 30. Return to home page

Notes: There will also be a little alert note to include a JavaScript and Selenium control needs to be switched from Home page to Game page

```
@Test
void testGame() throws InterruptedException {
    // we open baseUrl
    webDriver.get(baseUrl);

    // this is the control to first tab:
    String tabHome = webDriver.getWindowHandle();
    System.out.println(tabHome);

    // on Home page, scroll to Game and assert that we found the element:
    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    js.executeScript("window.scrollBy(0, 8800);");
    Thread.sleep(2000);

    // we will find the game and go to the new tab
    String codeGame = webDriver.findElement(By.xpath("/html/body/div[5]/div[14]/div/h1")).getText();
    assertEquals("Code Game", codeGame);

    // open the game
    webDriver.findElement(By.linkText("Play Game")).click();
    Thread.sleep(8000);

    // now switch selenium to this new link:
    // second tab:
    for (String tabGame : webDriver.getWindowHandles()) {
        if (!tabGame.equals(tabHome)) {
            webDriver.switchTo().window(tabGame);
            break;
        }
    }
}
```

```

// we play the game :)
// from each level, we will play once, and then the last level:

// now on this second tab:
// we will play the music first
webDriver.findElement(By.id("codeGame-button-musicToggle")).click();
//Thread.sleep(1000);

// FIRST LEVEL
// play the game, click on the arrow forward, twice:
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
//Thread.sleep(3000);

// play code we have entered:
webDriver.findElement(By.id("codeGame-button-runsequence")).click();
Thread.sleep(4000);

// we now click button "play next level", but we will Select the level from the list:
webDriver.findElement(By.id("codeGame-retryLevel")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-levelselector-open")).click();
Thread.sleep(1000);

```

```

// we choose the first one from the "Turning"
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[2]/div/div[2]/div[2]/div[1]")).click();
Thread.sleep(2000);

// SECOND LEVEL
// and we play that one
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);

webDriver.findElement(By.id("codeGame-button-left")).click();
Thread.sleep(1000);

webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
//Thread.sleep(2000);

webDriver.findElement(By.id("codeGame-button-runsequence")).click();
Thread.sleep(4000);

//and again, we will find more levels:
webDriver.findElement(By.id("codeGame-retryLevel")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-levelselector-open")).click();
Thread.sleep(1000);

```

```

// we scroll to the "Action part":
WebElement scrollToAction = webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[2]/div/div[2]/h3[3]"));
js.executeScript("arguments[0].scrollIntoView(true);", scrollToAction);
Thread.sleep(2000);

// we choose the first one from the "Action"
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[2]/div/div[2]/div[3]/div[1]")).click();
Thread.sleep(2000);

// THIRD LEVEL
// and we play that one
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);

webDriver.findElement(By.id("codeGame-button-use")).click();
//Thread.sleep(1000);

webDriver.findElement(By.id("codeGame-button-runsequence")).click();
Thread.sleep(4000);

//and again, we will find more levels:
webDriver.findElement(By.id("codeGame-retryLevel")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-levelselector-open")).click();
Thread.sleep(1000);

// we scroll to the "Condition part":
WebElement scrollToCondition = webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[2]/div/div[2]/h3[4]"));
js.executeScript("arguments[0].scrollIntoView(true);", scrollToCondition);
Thread.sleep(2000);

```

```

// we choose the first one from the "Condition"
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[2]/div/div[2]/div[4]/div[1]")).click();
Thread.sleep(2000);

// FOURTH LEVEL
// and we play that one
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);

webDriver.findElement(By.id("codeGame-button-use")).click();
//Thread.sleep(1000);

webDriver.findElement(By.id("codeGame-button-runsequence")).click();
Thread.sleep(4000);

//and again, we will find more levels:
webDriver.findElement(By.id("codeGame-retryLevel")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-levelselector-open")).click();
Thread.sleep(1000);

// we scroll to the "Looping part":
WebElement scrollToLooping = webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[2]/div/div[2]/h3[5]"));
js.executeScript("arguments[0].scrollIntoView(true);", scrollToLooping);
Thread.sleep(2000);

// we choose the first one from the "Looping"
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[2]/div/div[2]/div[5]/div[1]")).click();
Thread.sleep(2000);

```

```

// FIFTH LEVEL
// and we play that one
webDriver.findElement(By.id("codeGame-button-loop")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[3]/div[2]/div[1]/div[2]/div/button[1]")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[3]/div[2]/div[1]/div[2]/div/div[2]/div/button[1]")).click();
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div[3]/div[2]/div[1]/div[2]/div/div[2]/div/button[1]")).click();
//Thread.sleep(2000);

webDriver.findElement(By.id("codeGame-button-runsequence")).click();
Thread.sleep(4000);

// and now, to the last level:
webDriver.findElement(By.id("codeGame-retryLevel")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-levelselector-open")).click();
Thread.sleep(1000);
webDriver.findElement(By.xpath("/html/body/div[2]/div[2]/div/div[2]/div[5]/div[4]")).click();
Thread.sleep(2000);

String finalLevelSubTitle = webDriver.findElement(By.id("codeGame-subtitle")).getText();
assertEquals("I must put everything in the loop.", finalLevelSubTitle);

```

```

//FINAL LEVEL
webDriver.findElement(By.id("codeGame-button-loop")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-left")).click();
webDriver.findElement(By.id("codeGame-button-forward")).click();
webDriver.findElement(By.id("codeGame-button-forward")).click();
webDriver.findElement(By.id("codeGame-button-forward")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-button-runsequence")).click();
Thread.sleep(4000);
webDriver.findElement(By.id("codeGame-retryLevel")).click();
Thread.sleep(1000);
webDriver.findElement(By.id("codeGame-levelselector-open")).click();
Thread.sleep(2000);

// after we finished the game, we will stop the music:
webDriver.findElement(By.id("codeGame-button-musicToggle")).click();
Thread.sleep(2000);

// and we will close the tabGame:
webDriver.close();

// and then we go to the Home page and switch the Selenium control to the
// tabHome:
webDriver.switchTo().window(tabHome);
Thread.sleep(2000);
js.executeScript("alert('Congratulations! You have finished the game!')");
Thread.sleep(2000);
}

```

3.8. Visit HTML Tutorials

The user wants to be able to visit the HTML Tutorials in order to learn about tags and tables. After the lesion is complete, the user wants to try the table exercise in the lesion.

Test Name: HTML Tutorial Test

Description: Check if the HTML Tutorials can be found in “Not sure where to begin” section and check if we can enter the HTML tutorial from here. Check if we can access the lectures by clicking on them. Check if we can type into input fields is table exercise and if we can retry the exercise when the answer is not correct

Pre-condition(s):

Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
<p>1. Open the Home page</p> <p>2. Click on the “Not sure where to begin” link Text</p> <p>3. Click on the Learn HTML button</p> <p>4. Click on the HTML Basics lecture button</p> <p>5. Find the <p> tag part of the lecture</p> <p>6. Find the <a> tag part of the lecture</p> <p>7. Find the tag part of the lecture</p> <p>8. Click on the HTML Table lecture button</p> <p>9. Scroll to see the entire table</p> <p>10. Scroll to the table exercise</p> <p>11. Type in the values into input fields</p> <p>12. Click on button to submit the answer</p> <p>13. Scroll to see the button</p> <p>14. Click on the button again</p> <p>15. Assert that the answer is not correct</p> <p>16. Click on the screen to try again</p> <p>17. Insert the correct values</p> <p>18. Scroll to button</p> <p>19. Submit answers by clicking on the button</p> <p>20. Assert that the answer is now correct</p> <p>21. Close the tab with exercise</p> <p>22. Navigate back to Home page</p>	<ul style="list-style-type: none"> - <tr> - </tr> - Name - Age - <th>Name</th> - <th>Age</th> 	<p>The user will be able to see the HTML Lecture when clicking the link Text. The user will be able to see HTML Lecture button and to enter a lecture by clicking on it. The user will be able to go to the HTML Basics lecture and to table Exercise. The user will be able to type into input fields in and to test whether his answers are correct or not. The user will be able to retry the table exercise when the answers are not correct.</p>	<p>The user is able to see the HTML Lecture when clicking the link Text. The user can see HTML Lecture button and can enter a lecture by clicking on it. The user can go to the HTML Basics lecture and to table Exercise. The user can type into input fields in and test whether his answers are correct or not. The user can retry the table exercise when the answers are not correct.</p>	PASS

Notes: In this test we will switch the theme to dark like we did in previous test example.

```

@Test
void testHTMLTutorial() throws InterruptedException {
    webDriver.get(baseUrl);
    Thread.sleep(1000);

    // find the Theme picker, on the top of the page:
    webDriver.findElement(By.cssSelector("body > div.w3-bar.w3-card-2.notranslate > div.w3-right.w3-padding-16.ext_icon_container >" +
        " a.w3-bar-item.w3-button.bar-icon-hover.w3-right.w3-hide-small > i")).click();

    // now assert that both options under the button are selected
    assertTrue(webDriver.findElement(By.id("radio_darkpage")).isSelected());
    assertTrue(webDriver.findElement(By.id("radio_darkcode")).isSelected());
    Thread.sleep(1000);

    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    // click to link "where to start"
    webDriver.findElement(By.linkText("Not Sure Where To Begin?")).click();
    Thread.sleep(3000);

    // and go to HTML Tutorials but in a new tab
    webDriver.findElement(By.xpath("/html/body/div[6]/div/div[1]/div[2]/a/div/h2")).click();
    Thread.sleep(2000);
}

```

```

// and go to HTML Basic
webDriver.findElement(By.linkText("HTML Basic")).click();
Thread.sleep(3000);

// we go to <p> tag to see it
WebElement p = webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/h2[4]"));
js.executeScript("arguments[0].scrollIntoView(true);", p);
Thread.sleep(3000);
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/h2[4]")).getText();
Thread.sleep(3000);

// we go to <a> tag to see it
WebElement a = webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/h2[5]"));
js.executeScript("arguments[0].scrollIntoView(true);", a);
Thread.sleep(3000);
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/h2[5]")).getText();
Thread.sleep(3000);

// we go to <img> tag to see it
WebElement img = webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/h2[6]"));
js.executeScript("arguments[0].scrollIntoView(true);", img);
Thread.sleep(3000);
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/h2[6]")).getText();
Thread.sleep(3000);

// now we go to HTML tables to learn them, and hopefully to try them by ourselves
webDriver.findElement(By.linkText("HTML Tables")).click();
Thread.sleep(3000);

// give it selenium control, we will need it to close the editor window

// the selenium control is on the page HTML Table Tutorial:
String tabTableTutorial = webDriver.getWindowHandle();
System.out.println(tabTableTutorial);

```

```

// scroll to see the whole table and click on the button Try it Yourself
js.executeScript("window.scrollBy(0, 200);");
Thread.sleep(3000);
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/div[3]/a")).click();
Thread.sleep(3000);

// scroll to table exercise
WebElement tableExercise = webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/form/div/h2"));
js.executeScript("arguments[0].scrollIntoView(true);", tableExercise);
Thread.sleep(3000);

// insert the values into table:
webDriver.findElement(By.name("ex1")).click();
Thread.sleep(1000);
webDriver.findElement(By.name("ex1")).sendKeys("<tr>");
Thread.sleep(2000);
webDriver.findElement(By.name("ex4")).click();
Thread.sleep(1000);
webDriver.findElement(By.name("ex4")).sendKeys("</tr>");
Thread.sleep(2000);

webDriver.findElement(By.name("ex2")).click();
Thread.sleep(1000);
webDriver.findElement(By.name("ex2")).sendKeys("Name");
Thread.sleep(2000);
webDriver.findElement(By.name("ex3")).click();
Thread.sleep(1000);
webDriver.findElement(By.name("ex3")).sendKeys("Age");
Thread.sleep(2000);

// and submit the answer:
webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/form/div/button")).click();
Thread.sleep(3000);

```

```

// now switch selenium to this table exercise link:
// second tab:
for (String tabTableExercise : webDriver.getWindowHandles()) {
    if (!tabTableExercise.equals(tabTableTutorial)) {
        webDriver.switchTo().window(tabTableExercise);
        break;
    }
}

// scroll to submit answer
WebElement submit = webDriver.findElement(By.id("answerbutton"));
js.executeScript("arguments[0].scrollIntoView(true);", submit);
Thread.sleep(2000);
submit.click();
Thread.sleep(2000);

// assert that the answer is not correct
String notCorrect = webDriver.findElement(By.tagName("h2")).getText();
assertEquals("Not Correct", notCorrect);
Thread.sleep(1000);

// click on the screen to try again
webDriver.findElement(By.xpath("/html/body/table/tbody/tr/td/div[4]/div[5]")).click();
Thread.sleep(1000);

// now insert the correct values:
webDriver.findElement(By.cssSelector("#assignmentcontainer > input:nth-child(6)")).click();
webDriver.findElement(By.cssSelector("#assignmentcontainer > input:nth-child(6)")).clear();
Thread.sleep(1000);
webDriver.findElement(By.cssSelector("#assignmentcontainer > input:nth-child(6)")).sendKeys("<th>Name</th>");
Thread.sleep(2000);

```

```

webDriver.findElement(By.cssSelector("input.editablesection:nth-child(9))).click();
webDriver.findElement(By.cssSelector("input.editablesection:nth-child(9))).clear();
Thread.sleep(1000);
webDriver.findElement(By.cssSelector("input.editablesection:nth-child(9))).sendKeys("<th>Age</th>");
Thread.sleep(2000);

// scroll to submit answer
WebElement submit2 = webDriver.findElement(By.id("answerbutton"));
js.executeScript("arguments[0].scrollIntoView(true);", submit2);
Thread.sleep(2000);
submit.click();
Thread.sleep(2000);

// assert that now it is the correct answer
String correct = webDriver.findElement(By.xpath("//*[@id='assignmentCorrect']/h2")).getText();
assertEquals("Correct!", correct);
Thread.sleep(1000);

// and now we will close the tabTableExercise:
webDriver.close();

// selenium control back
webDriver.switchTo().window(tabTableTutorial);
Thread.sleep(2000);

webDriver.navigate().to(baseUrl);
Thread.sleep(2000);

}

```

3.9. Try the HTML Exercise

The user wants to be able to practice the HTML knowledge by doing various exercises on the page.

Test Name: HTML Exercise Test				
Description: Check if the HTML Exercises can be opened through navigation bar. Check is the input fields and buttons in exercises are interactive and check if we can easily go to next exercise				
Pre-condition(s):				
Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open the Home page 2. Click on the Exercises link text in navigation bar 3. Click on the HTML Exercises 4. Scroll to see the button to start exercise 5. Click on the button to start exercise 6. Type into input field 7. Click on the submit button 8. Click on the next button 9. Type into first input field 10. Type into second input field	- title - 250 - 400 - href= - alt	The user will be able to access HTML Exercise through navigation bar. The user will be able to type answers info input fields. The user will be able to easily go to the next exercises from the previous ones.	The user can access HTML Exercise through navigation bar. The user can type answers info input fields. The user can easily go to the next exercises from the previous ones.	PASS

- | | | | |
|--|--|--|--|
| 11. Click on the submit button | | | |
| 12. Click on the next button | | | |
| 13 Type into input field | | | |
| 14. Click on the submit button | | | |
| 15. Click on the next button | | | |
| 16 Type into input field | | | |
| 17. Click on the submit button | | | |
| 18. Close the Exercise tab | | | |
| 19. Click on the Home icon in navigation bar | | | |

Notes: In this test we will switch the theme to dark, like we did in previous test example. There will also be a little alert note to include a JavaScript

```
@Test
void testHTMLExercise() throws InterruptedException {
    webDriver.get(baseUrl);
    Thread.sleep(1000);

    // find the Theme picker, on the top of the page:
    webDriver.findElement(By.cssSelector("body > div.w3-bar.w3-card-2.notranslate > div.w3-right.w3-padding-16.ext_icon_container > " +
        + ".w3-bar-item.w3-button.bar-icon-hover.w3-right.w3-hide-small > i")).click();

    // now assert that both options under the button are selected
    assertTrue(webDriver.findElement(By.id("radio_darkpage")).isSelected());
    assertTrue(webDriver.findElement(By.id("radio_darkcode")).isSelected());
    Thread.sleep(1000);

    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    // find HTML Exercise in the navbar and click on the HTML Exercises
    webDriver.findElement(By.linkText("Exercises")).click();
    Thread.sleep(2000);
    webDriver.findElement(By.linkText("HTML Exercises")).click();
    Thread.sleep(1000);

    // selenium control
    String tabHTMLExercise = webDriver.getWindowHandle();
    System.out.println(tabHTMLExercise);

    //find button to start the exercise and click on it
    WebElement startExercise = webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/div[3]/h2"));
    js.executeScript("arguments[0].scrollIntoView(true);", startExercise);
    Thread.sleep(3000);
    webDriver.findElement(By.xpath("/html/body/div[7]/div[1]/div[1]/div[3]/p[2]/a")).click();
    Thread.sleep(2000);
```

```

// switch selenium control
for (String tabExercises : webDriver.getWindowHandles()) {
    if (!tabExercises.equals(tabHTMLExercise)) {
        webDriver.switchTo().window(tabExercises);
        break;
    }
}

//      type title into p tag
webDriver.findElement(By.xpath("//*[@id=\"assignmentcontainer\"]/input")).sendKeys("title");
Thread.sleep(2000);

// click on the button Submit answer
webDriver.findElement(By.xpath("//*[@id=\"answerbutton\"]")).click();
Thread.sleep(2000);
// click on the button Next Exercise
webDriver.findElement(By.xpath("//*[@id=\"answerbutton\"]")).click();
Thread.sleep(2000);

//      for img: in first field type 250 in the second 400
webDriver.findElement(By.xpath("//*[@id=\"assignmentcontainer\"]/input[1]")).sendKeys("250");
Thread.sleep(2000);
webDriver.findElement(By.xpath("//*[@id=\"assignmentcontainer\"]/input[2]")).sendKeys("400");
Thread.sleep(2000);

// click on the button Submit answer
webDriver.findElement(By.xpath("//*[@id=\"answerbutton\"]")).click();
Thread.sleep(2000);
// click on the button Next Exercise
webDriver.findElement(By.xpath("//*[@id=\"answerbutton\"]")).click();
Thread.sleep(2000);

//      for a: type href=
webDriver.findElement(By.xpath("//*[@id=\"assignmentcontainer\"]/input")).sendKeys("href=");
Thread.sleep(2000);

```

```

// click on the button Submit answer
webDriver.findElement(By.xpath("//*[@id=\"answerbutton\"]")).click();
Thread.sleep(2000);
// click on the button Next Exercise
webDriver.findElement(By.xpath("//*[@id=\"answerbutton\"]")).click();
Thread.sleep(2000);

//      for img src: type alt
webDriver.findElement(By.xpath("//*[@id=\"assignmentcontainer\"]/input")).sendKeys("alt");
Thread.sleep(2000);

// just click on the button Submit answer
webDriver.findElement(By.xpath("//*[@id=\"answerbutton\"]")).click();
Thread.sleep(2000);

// close the tab with exercises
webDriver.close();

// and then we go to the HTML exercises and switch the Selenium control back
webDriver.switchTo().window(tabHTMLExercise);
Thread.sleep(2000);

// go back to home page:
webDriver.findElement(By.xpath("//*[@id=\"topnav\"]/div/div[1]/a[2]")).click();
Thread.sleep(2000);

Thread.sleep(1000);
js.executeScript("alert('You were GREAT at this!')");
Thread.sleep(2000);

}

```

3.10. Get the Certificate

The user wants to be able to visit the “Get Certified” section to buy the certificate for his competed tutorials.

Test Name: Certificate Test

Description: Check if the “Get Certified” button is working. Check if the sorting on the page works. Check if we can buy the certificate with provided information in input fields.

Pre-condition(s):

Test Steps:	Test Data:	Expected Result:	Actual Result:	Status:
1. Open the Home page 2. Click on the “Get Certified” in the navigation bar 3. Assert that we are on the page with certificated 4. Click on the icon “view as list” to sort the certificates 5. Filter the course by choosing the option “”by date, old to new 6. Minimize the price filter by clicking on the icon 7. Assert that the HTML Certificate is the first one on the page 8. Click on the “Quick shop” button 9. Click on the certificate image 10. Click on the button “Buy it now” 11. Provide input information 12. Scroll to see everything 13. Click “continue to payment” button 14. Close the tab 15. Return to Home page	- email - first name - last name - address - postal code - city	The user will be able to click on the “Get Certified” button in the navigation bar. The user will be able to sort on the page and will be able to buy the certificate with provided information	The user can click on the “Get Certified” button in the navigation bar. The user can sort on the page and canbuy the certificate with provided information	PASS

Notes: There will also be a little alert note to include a JavaScript

```

@Test
void testCertificate() throws InterruptedException {
    webDriver.get(baseUrl);
    Thread.sleep(1000);

    // selenium control
    String tabHomeC = webDriver.getWindowHandle();
    System.out.println(tabHomeC);

    JavascriptExecutor js = (JavascriptExecutor) webDriver;

    // find Get Certified in the navbar and click on it
    webDriver.findElement(By.linkText("Get Certified")).click();
    Thread.sleep(2000);

    // switch selenium control
    for (String tabCertificate : webDriver.getWindowHandles()) {
        if (!tabCertificate.equals(tabHomeC)) {
            webDriver.switchTo().window(tabCertificate);
            break;
        }
    }

    // assert that we are on the page with certificates
    String certificates = webDriver.getCurrentUrl();
    assertEquals("https://campus.w3schools.com/collections/course-catalog", certificates);
    Thread.sleep(1000);

    // view as list:
    webDriver.findElement(By.cssSelector(".icon-list")).click();
    Thread.sleep(2000);

    // filter the courses by date, old to new
    Select filterFeatured = new Select(webDriver.findElement(By.id("product_grid_sort")));
    filterFeatured.selectByValue("created-ascending");
    Thread.sleep(2000);

    // minimize the price filter
    webDriver.findElement(By.xpath("//html/body/main/div[1]/div[1]/div[2]/div/div[1]/button")).click();
    Thread.sleep(2000);

    // assert that HTML is the first one
    String learnHTML = webDriver.findElement(By.linkText("Learn HTML")).getText();
    assertEquals("Learn HTML", learnHTML);
    Thread.sleep(1000);

    // buy the certificate (go to quick shop button)
    webDriver.findElement(By.xpath("//html/body/main/div[1]/div[1]/div[3]/ul/li[1]/div/div/div[3]/div[3]/button")).click();
    Thread.sleep(3000);

    // it will open the pop up window
    // in it we will click to see the the image of the certificate
    webDriver.findElement(By.xpath("//html/body/div[7]/div/div/article/div[1]/div[2]/div/button[2]/span/img")).click();
    Thread.sleep(2000);

    // and buy it
    webDriver.findElement(By.xpath("//html/body/div[7]/div/div/article/div[2]/div/div[4]/div/div/form/div[1]/div[2]/div/div/button[1]")).click();
    Thread.sleep(3000);

    // type in email
    webDriver.findElement(By.id("email")).sendKeys("merjema99muji@gmail.com");
    Thread.sleep(1000);

    // type in first name
    webDriver.findElement(By.id("TextField1")).sendKeys("Merjema");
    Thread.sleep(1000);

```

```

// type in last name
webDriver.findElement(By.id("TextField2")).sendKeys("Mujić");
Thread.sleep(1000);

// scroll a little bit, to see better
WebElement scrollAddress = webDriver.findElement(By.id("TextField5"));
js.executeScript("arguments[0].scrollIntoView(true);", scrollAddress);

// type in address
webDriver.findElement(By.id("TextField7")).sendKeys("Butmirška cesta bb");
Thread.sleep(1000);

// type in postal code
webDriver.findElement(By.id("TextField5")).sendKeys("71210");
Thread.sleep(1000);

// type in city
webDriver.findElement(By.id("TextField6")).sendKeys("Sarajevo");
Thread.sleep(3000);

// click continue to payment button
webDriver.findElement(By.xpath("//html/body/div[1]/div/div/div/div[1]/div/div[2]/div/div/div/div[2]/div/div/main/form/div[1]/div/div/div[2]/div[1]/button")).click();
Thread.sleep(3000);

// close the tab
webDriver.close();

//give the selenium control back to home page
webDriver.switchTo().window(tabHomeC);
Thread.sleep(1000);
js.executeScript("alert('We are done! Thank you for your attention!')");
Thread.sleep(3000);

}

```

9. Conclusion

9.1. Testing Summary

Provide a summary of all your executed tests. Something like this would be alright:

Testing Tool	Total Tests	Passed Tests	Failed Tests
Eclipse IDE (Selenium, ChromeDriver)	10	10	0

9.2. Final Thoughts

The W3Schools Online Web Tutorials page is excellently done and all elements were interactive, clickable, and easy to locate using the Selenium.

The page has all information needed for the future web developers, as well as tutorials, exercises and even fun little game.

Overall, it was a fun testing all these elements and surely great practice in using Selenium for testing the websites.