

# LOVELY PROFESSIONAL UNIVERSITY



## CAP 598 CA3

Micro Project on Automation Testing using  
Selenium IDE

on

<https://www.ck12.org>

## CAP598: SOFTWARE ENGINEERING PRACTICES

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## Test Plan Identifier

**Test Plan ID:** Website\_Test\_Plan\_01

This identifier ensures unique identification of the test plan within the project lifecycle.

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## References

- **Website:**
- **Selenium IDE User Guide:** A tool for recording and running automated test cases in the browser. <https://www.selenium.dev/selenium-ide/>
- **IEEE 829-2008:** Standard for software test documentation, providing guidelines for structuring test plans.  
<https://jmpovedar.wordpress.com/wp-content/uploads/2014/03/ieee-829.pdf>

## Introduction

This test plan outlines the testing strategy for the CK-12 Education platform (The Free AI Tutor) website. The primary goal is to validate key features such as the Signup, search functionality, Navigation page, and Sign out & internal links. Comprehensive testing will help identify any defects and ensure a smooth user experience. The results of these tests will provide confidence that the website is both functional and ready for user interaction.

## Objective

- Validate the functionality of core features on the CK-12 Education platform (The Free AI Tutor) website.
- Identify and report any issues that may impact user experience.
- Ensure consistent performance across different browsers.

## Test Items

The following features will be tested:

- **Verification page(sign Up):** Ensure the verification page loads correctly with all elements (User sign up and account created successfully ).
- **Search Functionality:** Test the search bar to ensure it returns relevant results for user queries.
- **Navigation Bar Page:** Verify that all navigation links work as expected and lead to the correct pages.
- **Navigation Page:** Verify that all navigation links work as expected and lead to the correct pages.(Search for 'Algebra')
- **Verification page(Sign Out):** Ensure the verification page loads correctly with all elements (User sign out and Log out successfully ).

## Software Risk Issues

Several risks could impact testing or test results:

- **Website Changes:** Changes to the website during the testing phase may affect the functionality being tested.
- **Browser Compatibility:** Different browsers (Chrome, Firefox, Safari) may render the website in varying ways, leading to potential discrepancies in test results.
- **Network Issues:** Slow or unreliable internet connections could affect the performance of certain website features, especially those relying on external data.
- **Tool Limitations:** Selenium IDE might not capture all complex user interactions, particularly for dynamic or JavaScript-heavy content.

## Features to Be Tested

- **Verification Page:** input field validation and successful redirection upon verification.
  - **Search Functionality:** search bar responsiveness, and relevance of displayed results.
  - **Navigation Bar Page:** Verify that all navigation links work as expected and lead to the correct pages.
  - **Navigation Page:** Verify that all navigation links work as expected and lead to the correct pages.(Search for 'Algebra')
  - **Verification page:** : Confirm that user successfully logout from dashboard
- 

## Features Not to Be Tested

- **Mobile Version:** Testing will be limited to the desktop version of the website.
- **Backend Processes:** This plan does not cover the underlying data handling processes of the website (e.g., database operations).
- **Design and Aesthetics:** The focus will be solely on functionality, not the visual design or layout of the website.

## Approach

Testing will be performed using **Selenium IDE**, an automated testing tool that records and runs browser-based tests. The approach includes:

- **Automation Tool:** Selenium IDE will be used for automating the testing of user interactions (clicks, searches, form submissions, etc.).
- **Cross-Browser Testing:** Tests will be run on both **Google Chrome** and **Mozilla Firefox** to ensure browser compatibility.

- **Manual Verification:** Some manual checks may be necessary if Selenium IDE cannot fully replicate certain interactions.
- **Test Execution:** Each feature will be tested individually. Results will be logged for further analysis.

### Item Pass/Fail Criteria

Each test will be evaluated based on the following criteria:

- **Pass:** If the website performs as expected (correct redirection, no errors, elements load properly).
- **Fail:** If any issues are detected, such as broken links, missing elements, or incorrect behavior (e.g., search returning irrelevant results).

*Example:*

- **Verification Page:** If the Verification page loads successfully with no missing elements, it's a pass.
- **Navigation Bar Test:** If a link redirects to an incorrect page, it's a fail.

### Suspension Criteria and Resumption Requirements

Testing may be paused under the following circumstances:

- **Website Downtime:** If the website is temporarily unavailable, testing will be suspended.
- **Critical Bugs:** If a major issue is identified (e.g., the Verification fails to load or the search doesn't work), testing will pause until the issue is addressed.

Testing will resume once the issue has been resolved or the website is restored.

## Test Deliverables

At the conclusion of testing, the following documents will be delivered:

- **Test Case Scripts:** The automated test scripts used in Selenium IDE.
- **Test Execution Results:** A report detailing which test cases passed and which failed.
- **Test Logs:** Logs generated by Selenium IDE containing detailed information on test execution.
- **Test Summary Report:** A high-level summary of the overall testing process, including key issues, bug reports, and recommendations.

## Remaining Test Tasks

- **Final Verification:** Run all tests again to ensure previously identified issues have been resolved.
- **Re-test Failed Cases:** Re-run tests for any failed cases once bugs have been fixed.
- **Cross-Browser Testing:** Ensure consistent functionality on both Chrome and Firefox.
- **Bug Reporting:** Document and share any issues found with the development team for resolution.

## Environmental Needs

To execute the tests, the following environments are required:

- **Operating Systems:** Windows 10 or higher, macOS
- **Browsers:** Google Chrome (latest version) and Mozilla Firefox (latest version)
- **Internet Connection:** A stable connection to interact with the website

- **Selenium IDE:** The Selenium IDE extension installed in supported browsers

## Schedule

- **Test Planning:** [13/11/2024] to [14/11/2024]
- **Test Execution:** [16/11/2024] to [17/11/2024]
- **Test Completion:** [18/11/2024]

## Planning Risks and Contingencies

- **Risk 1:** Changes to the website during the testing phase may cause failures.  
**Contingency:** Maintain communication with the development team to stay informed of any changes during testing.
- **Risk 2:** Selenium IDE may not handle complex interactions like dynamic content or drag-and-drop actions.  
**Contingency:** Use manual testing for complex interactions or switch to a more advanced tool if necessary.
- **Risk 3:** Browser compatibility issues may arise.  
**Contingency:** Test the website on multiple browsers (Chrome and Firefox) to ensure consistent behavior.

## Glossary



## ❖ Test Case Scripts:

Test scenario	Verification of website functionalities for CK-12 using selenium IDE.	Tester	Komal Mehra	Date	17 /11/2024
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ID	Test Case	Pre-condition	Test Steps	Test Data	Expected Output	Post-condition	Actual Output	Status	Comments
TC_01	Verify Sign-Up Functionality	User is on the Sign-Up page	a. Open the CK-12 website b. Click 'Sign Up' c. Enter required details d. Click 'Create Account'	Username, email, password	User account is created successfully	User is redirected to the Dashboard	Sign up successfully	Pass	Works as expected
TC_02	Search for 'Algebra' Resource	User is logged in	a. Open the Dashboard b. Enter 'Algebra' in the search bar c. Press 'Enter'	Search term: 'Algebra'	Search results for 'Algebra' are displayed	Relevant search results are shown	Search results are displayed	Pass	Accurate search results
TC_03	Verify Navigation to Physics	User is on the Subjects page	a. Open the homepage b. Click on 'Subjects' c. Select 'Physics'	None	User is redirected to the Physics subject page	Physics subject page is displayed	User is redirected to the physics subject page	Pass	Smooth navigation
TC_04	Verify Page Navigation for Algebra	User is logged in	a. Search for 'Algebra' b. Open a resource c. Navigate through pages	Search term: 'Algebra'	User navigates through resource pages smoothly	Resource pages are accessible	User navigates through resource pages smoothly	Pass	Smooth page transitions
TC_05	Verify Sign-Out Functionality	User is logged in	a. Open the Dashboard b. Click the 'Sign Out' button	None	User is logged out and redirected to homepage	User is on the homepage	User is Logout and redirected to homepage	Pass	Logout works correctly

## ❖ Verification Page(sign up)

Selenium IDE - CA3\*

Project: CA3\*

Executing ▾

TC\_01\* https://www.ck12.org

Command	Target	Value
6 ✓ click	css=div:nth-child(1) > .SignUpButton__SignUpBtn-sc-111mtqu-0	
7 ✓ run script	window.scrollTo(0,357)	
8 ✓ click	css=#header_user_dropdown > span:nth-child(2)	
9 ✓ click	css=UserDropdownItems__ListItem-sc-1f0cucv-2:nth-child(1) .UserDropdownItems__OptionText-sc-1f0cucv-0	
10 ✓ close		

Runs: 1 Failures: 0

Log Reference

6. click on css=div:nth-child(1) > .SignUpButton__SignUpBtn-sc-111mtqu-0	OK	19:58:35
7. runScript on window.scrollTo(0,357)	OK	19:58:35
8. Trying to find css=#header_user_dropdown > span:nth-child(2)...	OK	19:58:35
9. click on css=UserDropdownItems__ListItem-sc-1f0cucv-2:nth-child(1) .UserDropdownItems__OptionText-sc-1f0cucv-0	OK	19:58:37
10. close	OK	19:58:37
*TC_01* completed successfully		19:58:37

Activate Windows  
Go to Settings to activate Windows

## ❖ Search Functionality

Selenium IDE - CA3\*

Project: CA3

Tests +

Search tests...

https://www.ck12.org

	Command	Target	Value
2	✓ set window size	1382x736	
3	✓ click	id=chatbotUserInput	
4	✓ click	id=chatbotUserInput	
5	✓ type	id=chatbotUserInput	algebra
6	✓ click	css= ChatbotUserInputGrid__SendIconButton-av2z1g-1 > svg	
7	✓ close		

Command

Target

Value

Description

Log Reference

3. click on id=chatbotUserInput OK 19:07:36

4. click on id=chatbotUserInput OK 19:07:39

5. type on id=chatbotUserInput with value algebra OK 19:07:39

6. click on css= ChatbotUserInputGrid\_\_SendIconButton-av2z1g-1 > svg OK 19:07:39

7. close OK 19:07:39

\*TC\_02\* completed successfully 19:07:39

Activate Windows  
Go to Settings to activate Windows

## ❖ Navigation Bar Page

Selenium IDE - CA3\*

Project: CA3\*

Tests +

Search tests...

https://www.ck12.org

Command	Target	Value
2 ✓ set window size	1382x736	
3 ✓ mouse over	css=#explore_button_header > span	
4 ✓ click	css=#explore_button_header > span	
5 ✓ mouse out	css=#explore_button_header > span	
6 ✓ click	css=.NavDropdown__Li-sc-1pedao2-3:nth-child(11) .item-title	
7 ✓ close		

Command

Target

Value

Description

Log Reference

3. mouseOver on css=#explore\_button\_header > span OK 20:09:54

4. click on css=#explore\_button\_header > span OK 20:09:55

5. mouseOut on css=#explore\_button\_header > span OK 20:09:55

6. click on css=.NavDropdown\_\_Li-sc-1pedao2-3:nth-child(11) .item-title OK 20:09:55

7. close OK 20:09:56

TC\_03\* completed successfully 20:09:56

Activate Windows  
Go to Settings to activate Windows.

# ❖ Navigation Page

Project: Project 2\*

Executing ▾

✓ TC\_04\*

▶ ▶ ⌂ ⌂

https://www.ck12.org

	Command	Target	Value
2	✓ set window size	1382x736	
3	✓ mouse over	id=subjects_button_header	
4	✓ click	id=subjects_button_header	
5	✓ mouse out	id=subjects_button_header	
6	✓ click	linkText=Physics	
7	✓ close		

Command

Target

Value

Description

Runs: 1

Failures: 0

Log

Reference

3. mouseOver on id=subjects\_button\_header OK

4. click on id=subjects\_button\_header OK

5. mouseOut on id=subjects\_button\_header OK

6. click on linkText=Physics OK

7. close OK

TC\_04\* completed successfully

16:47:52

16:47:54

16:47:54

16:47:54

16:47:55

16:47:55

Activate Windows

Go to Settings to activate Windows

## ❖ VerificationPage(sign out)

Selenium IDE - CA3\*

Project: CA3\*

Tests +

Search tests...

https://www.ck12.org

	Command	Target	Value
9	✓ click	css=div:nth-child(1) > .SignUpButton__SignUpBtn-sc-111mtqu-0	
10	✓ mouse over	css=#header_user_dropdown > span:nth-child(2)	
11	✓ click	css=#header_user_dropdown > span:nth-child(2)	
12	✓ mouse out	css=#header_user_dropdown > span:nth-child(2)	
13	✓ click	linkText=Sign Out	
14	✓ close		

Command

Target

Value

Description

Log Reference

10. Trying to find css=#header\_user\_dropdown > span:nth-child(2)... OK 20:00:26

11. click on css=#header\_user\_dropdown > span:nth-child(2) OK 20:00:33

12. mouseOut on css=#header\_user\_dropdown > span:nth-child(2) OK 20:00:33

13. click on linkText=Sign Out OK 20:00:33

14. close OK 20:00:33

TC\_05\* completed successfully 20:00:33

Activate Windows  
Go to Settings to activate Windows