

Testing Approach for SDLMS Login and User Authentication

Introduction

The goal of this testing approach is to ensure the reliable functionality of the Login and User Authentication process for the SDLMS (Software Development Learning Management System). We will use TestCafe, a popular JavaScript-based end-to-end testing framework, to create and execute test cases.

Prerequisites

- **Local NodeJS Environment:** Set up a local Node.js environment with a newer Node.js version.
 - During Testing Mac OS was used for installation. Command is 'Brew install node'
- **Installation of TestCafe:** Install TestCafe globally using npm (Node Package Manager).
 - For installing Test cafe Command `npm i -g testcafe`
 - If the NPM requires update you can use '`npm install npm@latest -g`'

Test Cases

Test Case 1: Successful Login

Description: This test verifies that a user can successfully log in with valid credentials.

Test Steps:

- Navigate to the SDLMS login page (<https://dev.deepthought.education/login>).
- Enter valid credentials (username and password).
- I Have used a Temp-mail Account for Registering
- Credentials are : username = 'Root' and password = 'xewmax-Zydfyj-qugbo0'
- Click the login button.

Expected Result: The user should be logged in and redirected to the dashboard screen.

Test Case 2: Redirect After Successful Login

Description: This test ensures that, upon successful login, the user is redirected to the dashboard screen.

Test Steps:

- Navigate to the SDLMS login page (<https://dev.deepthought.education/login>).
- Enter valid credentials (username = 'Root' and password = 'xewmax-Zydfyj-qugbo0').
- Click the login button.

Expected Result: The user should be logged in and immediately redirected to the dashboard screen.

Test Case 3: Unsuccessful Login - Invalid Credentials

Description: This test verifies that an appropriate error message is displayed when a user attempts to log in with invalid credentials.

Test Steps:

- Navigate to the SDLMS login page (<https://dev.deepthought.education/login>).
- Enter invalid credentials (e.g., incorrect username or password).
- Click the login button.

Expected Result: An error message should be displayed on the page, indicating that the login attempt was unsuccessful.

Test Case 4: Error Messages for Invalid Login Attempts

Description: This test validates that appropriate error messages are displayed when a user makes invalid login attempts.

Test Steps:

- Navigate to the SDLMS login page (<https://dev.deepthought.education/login>).
- Attempt to log in with different combinations of invalid credentials.

Expected Result: For each invalid attempt, the system should display an appropriate error message indicating the reason for the login failure.

Test Case 5: Cross-Browser Compatibility

Description: This test ensures that the login and authentication processes work consistently across different web browsers.

Test Steps:

- Set up TestCafe to run the test cases on at least two different browsers (e.g., Chrome and Firefox).
- Execute all the test cases on both browsers.

Expected Result: The login and authentication processes should work consistently and produce the same results across the chosen browsers.

Manual Testing : During the Automation Testing I also came across some of the Functional Error in the Website which I will attach in the Table below this Document

Challenges Faced During Testing

- **Compatibility:** Ensuring that the tests run successfully and consistently across different browsers can be challenging. During the test execution using 'Testcafe all login-test.js'. I had to use all because browser was not being detected but after a reinstallation of chrome, the issue was resolved
- **Inspect element :** While writing the test script for "Test Case 2" to check whether the dashboard is present or not I got very confused as to chose which element ID should be mentioned for the dashboard, there was a div class "sdlms-container" and inside the class there was another section class with different ID and same dashboard dimension but in the end I chose to go with class as it incorporated the dashboard as whole
- **LLM Models(i.e Bard, ChatGpt) :** AI tools helped a lot during this assignment from solving the test case related errors to some minor installation hurdles. AI in the field of Automation Testing is a blessing and should be used to increase productivity.

Conclusion

By following this testing approach and the outlined test cases, you can ensure the reliability and integrity of the Login and User Authentication process for the SDLMS. Continuously monitor and update your test suite to adapt to changes in the application, and consider additional test scenarios for comprehensive coverage.

Screenshots:

```
(base) tejasshrivastav@Tejass-MacBook-Air Internshala_Assignment % testcafe chrome,safari login-test.js

Running tests in:
- Chrome 117.0.0.0 / Ventura 13
- Safari 16.6 / Ventura 13

Login Test
✓ Successful Login and Check Dashboard
✓ Unsuccessful Login
```



/dtpen/dashboard Not Found
You seem to have stumbled upon a page that does not exist. Return to the [home page](#).

Test Report:

Test Report

Test Case	Description	Expected Output	Actual Output	Status
Test Case 1	Successful Login	After entering valid credentials and clicking the login button, the user should be logged in, and the dashboard section should be displayed on the page.	The dashboard section was displayed	Pass
Test Case2	Dashboard Presence	After successful login, the test should check if the dashboard section is present on the page.	The dashboard section was present in the page	Pass
Test Case 3	Unsuccessful Login	After entering invalid credentials and clicking the login button, an error message should be displayed, and the dashboard section should not be visible.	Entering an Invalid username and password displays Bootstrap Alert-danger prompt message	Pass
Test Case 4	Test in Different Browsers	Run the test in multiple browsers (e.g., Chrome, Safari) to ensure that the login and dashboard functionality works consistently across browsers.	Both browser perform the test cases consistently i.e Chrome 117.0.0.0 / Ventura 13, Safari 16.6 / Ventura 13	Pass
Test Case 5(manual functional Test)	Log out redirect	Once the User logs out the page should redirect to homepage	The page shows an error “/dtpen/dashboard Not Found You seem to have stumbled upon a page that does not exist. Return to the home page.”	Fail(No link is present in the href tag)