Research on Software Testing Using Automated Testing Tool Selenium WebDriver for the Luliz E-commerce Website

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***Abstract*—This thesis investigates the application of automated testing using Selenium WebDriver for the Luliz e-commerce website. The study covers the theoretical foundations of software testing, the advantages and disadvantages of Selenium WebDriver, and the implementation of test cases. The research involved creating test cases for various functionalities of the Luliz website, including adding and editing products. The research also identifies areas for improvement, such as the need for further research into advanced programming techniques with Selenium. The work develops test cases and Selenium WebDriver scripts for the Luliz sales website. A percentage in the source conclusion refers to a different website and is therefore not treated as a verified outcome for Luliz.**

***Index Terms*—Selenium WebDriver, automated testing, web testing, Luliz, e-commerce**

I. Introduction

This thesis explores the use of Selenium WebDriver for automated testing of the Luliz e-commerce website. It covers the theoretical background of software testing, the benefits and drawbacks of Selenium WebDriver, and the implementation of test cases. The study aims to enhance the understanding of web testing techniques and improve the software testing process. The research involved creating test cases for various functionalities of the Luliz website, including adding and editing products. The study also highlights the importance of using Selenium WebDriver in the context of e-commerce websites, as it can significantly improve the reliability and efficiency of the testing process [1]. Related earlier ICTU undergraduate theses provide context for this English summary [5], [6], [7], [8], [9]. Published articles on the methods and subject of this project provide context for this English summary [10].

II. Methods

The methods section describes the setup and execution of test cases using Selenium WebDriver. The research involved creating test cases for various functionalities of the Luliz website, including adding and editing products. The test cases were executed to verify the functionality of the website. The study also involved setting up the test environment, developing test cases, and executing them to ensure the proper functioning of the website's features [1].

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III. Results

Specific test cases were designed and executed to ensure the proper functioning of the website's features, such as adding and editing products. The test cases were created to cover various scenarios, including valid and invalid inputs, to ensure comprehensive testing. The report documents test-case preparation, Python scripts using Selenium, and the presentation of pass or fail counts when scripts run. It does not establish a reliable overall pass rate for the Luliz website [1].

IV. Discussion

The discussion section highlights the successful implementation of Selenium WebDriver for automated testing. The research also identifies areas for improvement, such as the need for further research into advanced programming techniques with Selenium. The study suggests that the use of Selenium WebDriver can significantly improve the reliability and efficiency of the testing process, making it a valuable tool for e-commerce websites. The case study illustrates how automated browser actions can support repeatable functional testing. The source conclusion contains a sentence naming another website, so its percentage cannot be attributed to the Luliz test target [1].

V. Conclusion

The research concludes that Selenium WebDriver is an effective tool for automated testing of e-commerce websites. The study also identifies areas for improvement, such as the need for further research into advanced programming techniques with Selenium. The study highlights the importance of using Selenium WebDriver in the context of e-commerce websites, as it can significantly improve the reliability and efficiency of the testing process. The research suggests that the use of Selenium WebDriver can be further optimized to cover more functions and scenarios, making it a valuable tool for e-commerce websites [1].

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