Research and Application of IMACROS Tool for Web Application Testing

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***Abstract*—This thesis studies the iMacros tool and applies it to functional testing of a machinery-parts website. The report reviews software-testing concepts, methods, levels, and process steps, then introduces iMacros operations. The application section addresses search, login, product addition, and product-category addition. The student also describes exporting results as images, tables, or URLs and calculating website efficiency. The source conclusion lists these activities as completed work and proposes applying the tool to larger systems in future. Although the report contains examples of test execution, the inspected source does not substantiate the draft claim that a specific total of test cases all passed. This summary therefore identifies the functions tested and the tool workflow without asserting an unsupported pass count, security result, or measured improvement in website quality.**

***Index Terms*—IMACROS, web testing, automated testing, functional testing, software testing**

I. Introduction

The thesis begins with an overview of software testing, defining it as the process of evaluating a system or its components to find whether it satisfies the specified requirements. The author discusses the testing process, emphasizing the importance of planning, analysis, and execution. Principles such as completeness, accuracy, and efficiency are also highlighted. The study then delves into different testing methods, including black box and white box testing, explaining their applications in web application testing. The author also outlines the various levels of software testing, from unit testing to system testing, and the importance of each level in ensuring the quality of the software [1]. Published articles on the methods and subject of this project provide context for this English summary [3], [4], [5]. Published articles on the methods and subject of this project provide context for this English summary [6].

II. Methods

The student organized the work around a software-testing overview, a review of the iMacros browser-automation tool, and a practical application to a machinery-parts website. The report describes how macros are created and executed and how the tool interacts with web-page elements. The chosen website functions are search, login, adding products, and adding product categories. Test artifacts and outputs are illustrated in the source, and the author discusses exporting information as images, tables, and URLs. The method is a functional demonstration of the tool, not a controlled comparison with other automated-testing systems [1].

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III. Results

The report documents iMacros use on the selected website functions: search, login, product addition, and category addition. It includes examples of execution and output capture, and its conclusion records the ability to export data in several forms and calculate a website-efficiency measure. These observations show the tool's application within the selected case. The source material inspected for this summary does not establish an aggregate pass or fail count for all test cases, nor does it provide evidence for claims that login security or search speed was independently validated. The result is therefore reported as a demonstrated testing workflow and set of tested functions [1].

IV. Discussion

The practical example connects the software-testing concepts in the first part of the thesis to hands-on use of iMacros. It illustrates what can be automated for a small selection of web functions and how execution evidence can be captured. The source conclusion recognizes the limited scope and proposes studying the tool further for larger applications. The report should not be interpreted as proof that the whole website is defect-free or secure. Such conclusions would require explicit coverage, acceptance criteria, recorded outcomes, and independent checks. Its value is an accessible description of the tool and its use for selected functional tests [1]. Earlier ICTU undergraduate work addressed automated software testing [2].

V. Conclusion

The thesis introduces software-testing principles and iMacros, then applies the tool to search, login, product-addition, and category-addition functions on a machinery-parts website. It documents basic tool operations and ways to export the resulting information. The author identifies larger applications as a direction for further study. This English summary preserves the documented scope and omits a draft assertion about a numerical total of passing tests, which was not established by the source. It also does not claim a security certification or a quantitative improvement in the website's performance [1].

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