

Implementasi dan Analisis Hasil Pengujian Otomatis Website AMetative HLE

Menggunakan Selenium WebDriver

*(Implementation and Analysis of Automated Testing of the AMetative HLE
Website Using Selenium WebDriver)*

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ABSTRACT

Software testing plays an essential role in ensuring the quality and reliability of a system, particularly in adaptive web-based learning applications. AMetative HLE (Adaptive Metacognitive Hypermedia Learning Environment) is a learning platform designed to classify students' self-monitoring levels in order to provide adaptive learning content. The system contains several integrated features, such as account registration, login, questionnaire completion, user classification, learning materials, history tracking, and learning summaries. The complexity of these functionalities requires a systematic and efficient testing approach. This study applies a case study approach using the black-box testing method implemented through automated testing with Selenium WebDriver. The testing process follows the stages of the Software Testing Life Cycle (STLC), including requirement analysis, test planning, test case development, test environment setup, test execution, regression testing, and test cycle closure. A total of 186 test cases were executed to evaluate the main functionalities of the AMetative HLE system. The results indicate that 142 test cases were successfully executed, achieving a success rate of 76.34%, while the remaining 44 test cases failed due to issues related to input validation and system navigation. These findings indicate that most of the system's core functionalities conform to the functional requirements defined in the Requirements Traceability Matrix (RTM). In addition, the use of Selenium WebDriver enables faster, more consistent, and structured error detection compared to manual testing, while also supporting regression testing to maintain system stability. Overall, automated testing proves effective in improving the functional quality and reliability of the AMetative HLE web-based learning system.

Keywords: *Automated Testing, Selenium Webdriver, Black-Box Testing, STLC, AMetative HLE*