Abstract

The manual attendance system, which is still widely used in schools, poses various challenges, such as slow and inaccurate recording processes. The Presentia application was developed as a web-based digital solution for recording student attendance. The focus of this research is to design and implement automated testing on the Presentia backend, with outputs including test cases, automation workflows, and testing analysis results. Manual system testing is time-consuming, inefficient, and prone to inconsistencies. This condition contradicts the need for rapid, multi-tenant, and iterative development of Presentia. Therefore, an automated testing approach is required to ensure the quality of system functions more effectively and consistently. This research employs unit testing and integration testing methods based on a white-box approach. Test cases are designed based on functional requirements and are then executed automatically using PHPUnit and GitHub Actions. The testing workflow includes requirement analysis, planning, test case development, and automation workflow implementation. A total of 129 test cases were successfully executed without errors, with automated testing efficiency reaching 98.28% compared to manual testing. The integration of automated testing into the CI/CD workflow demonstrates that system validation can be performed quickly, consistently, and while maintaining the stability of Presentia's backend functionality in each development iteration.

Keywords: ***attendance system, automated testing*****, laravel, github actions,** ***unit testing, integration testing***
