

ABSTRACT

The abstract of this final project is as follows. The automation of software testing is crucial for ensuring application quality, and this research focuses on the EduSkill web application for the BINA ESSA Foundation, which had not undergone functional testing. The author proposes a solution by implementing the Black Box Testing method with the Equivalence Partitioning (EQP) technique and automating the testing process using Katalon Studio. This approach was chosen to efficiently test the application's external functionality without requiring an understanding of its internal code structure.

The research followed the phases of the Software Testing Life Cycle (STLC), from requirements analysis to results reporting. A total of 200 test cases were developed using EQP, with the majority (128) focusing on negative scenarios to test the application's resilience against invalid input. Initially, the testing identified 21 significant bugs (4 critical, 17 major) and showed a success rate of 89.5%. However, after fixes were implemented, re-testing showed a 100% success rate, and the application is now bug-free.

The results demonstrate that the implementation of EQP was highly effective in minimizing the number of test cases while still covering critical input variations, thereby enabling the comprehensive identification of functional issues. The use of Katalon Studio also improved testing efficiency and accuracy. In conclusion, this combination of methods successfully ensured that the EduSkill application meets its functional specifications and is ready for use.

Keywords: *automated testing, functional testing, katalon studio, equivalence partitioning, black box testing, software testing life cycle*