ABSTRACT

This study discusses the implementation of the Cyclomatic Complexity (CC) method to optimize test coverage in the Helpdesk system of RSUP Dr. Hasan Sadikin. As the Quality Assurance (QA), the author is responsible for ensuring that the developed system meets user requirements, is free from critical defects, and maintains measurable quality. The CC method is applied to calculate the minimum number of required test cases based on the program's logical complexity, enabling efficient testing without redundancy.

The testing process followed an iterative development approach, covering functional testing, integration testing on the chatbot module connected to an external middleware via API, and User Acceptance Testing (UAT) using the Contract Acceptance Testing approach. Out of a total of 123 requirements, 101 were tested and mapped into test cases, achieving a test coverage of 82.1%. Throughout the testing process, 30 documented defects were identified and subsequently addressed by the development team.

The results indicate that applying the CC method is effective in simplifying test case planning, increasing testing efficiency, and maintaining the quality of system functionality verification. Although some modules remain partially developed, the overall system has been deemed to meet the agreed user requirements, with several improvement notes for future development.

Keywords:

helpdesk system, software testing, cyclomatic complexity, test coverage, user acceptance testing, test efficiency.