

Abstract

This study aims to implement the White Box Testing method, specifically Unit Testing and Integration Testing, in the SiPlongJar (Sistem Ploting Pengajaran) application to ensure software quality in terms of functionality and integration between modules. The initial stage begins with needs analysis through interviews and the formulation of SRS documents, which are used as the basis for developing testing strategies in the Test Plan. Testing was conducted on 43 functional requirements, resulting in 115 unit test cases, as well as 4 integration scenarios, yielding a total of 16 integration test cases. The unit testing results showed a success rate of 93.04%, with line coverage ranging from 76.79% to 100%, indicating that most system functions have been thoroughly tested. Meanwhile, the integration testing results showed 100% success across all testing scenarios, indicating that module integration within the system is functioning properly according to specifications. The conclusion of this study shows that the application of White Box-based testing has proven successful in ensuring that the system functions as intended, both individually and when integrated, from both the unit functionality and module integration perspectives. This study recommends the application of other testing coverage types such as branch coverage or path coverage, as well as the comprehensive implementation of integration testing across all system modules.

Keywords: sistem ploting pengajaran, white box testing, unit testing, line coverage, integration testing.