

Abstract

Software testing is an important role during the application development process. More than 50% part of software development is spent on testing. Tests are carried out to find errors / defects in the software. Test case generation is an important process that is carried out the first time in the testing process which can be done from the design of the software program code / code based or the design of the requirements specification / model based using the Unified Model Language (UML) behavioral diagram. Generating test cases from requirement specifications/model based is more efficient than time and effort. Statechart diagrams are used as models to generate test cases that represent dynamic aspects of the system through flowcharts between states. So in this study, we will build a system for automatic test case generation using a statechart diagram model with the Depth First Search (DFS) algorithm. For testing web applications using Selenium tools on the personnel application website and applying the equivalence partitioning method to validate between software specifications. The results of the automatic generation of test cases get the same test case results as the specifications and 100% of the test cases are also generated.

Keywords: *Depth First Search (DFS), model based testing, software testing, statechart diagram, xmi*