Abstract

More than 50% of software development effort is spent in testing phase in a typical software development project. Test case design as well as execution consumes a lot of time. So automated generation of test cases is highly required. We present a testing methodology to test object oriented software based on UML state chart diagrams. In our approach we apply function minimization technique and generate test cases automatically from UML state chart diagrams. Here, first the state chart diagram is constructed. Then the diagram is traversed. Here, we perform a DFS to select the associated predicates. After selecting the predicates, we guess an initial dataset. These conditional predicates are, then transformed to generate test cases automatically. Our technique achieves adequate test coverage without unduly increasing the number of test cases. Our approach achieves many important coverage like state coverage, transition coverage, transition pair coverage etc. This paper also describes how minimization technique is used in testing.
References

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Index Terms

Computer Science
Software Engineering
Keywords
Unified Modelling Language  State Chart Diagram  Function Minimization Technique  Test Cases  Fsm Or Efsm  Model Junit