Abstract

Due to limited resources and challenging time schedule, software testing is usually performed in pressure to assure the fulfilment of the software requirements. Test case generation is a crucial activity of the software testing phase. Testing of all paths from Control Flow Graph is not feasible in software testing, due to limited time and cost. Generation of optimized test paths is a challenging part of the software testing process. In this paper, a new technique to obtain the optimized test paths from activity diagram designed through Unified Modeling Language is demonstrated. A modified algorithm called as Firefly algorithm is used to obtain the critical paths. A case study of air flight check-in is taken as a case study to explain the proposed approach. Paths are prioritized based on Information Flow Metric and their cyclomatic complexity. Obtained optimized paths have no redundancy and produced the better results.
Optimized and Prioritized Test Paths Generation from UML Activity Diagram using Firefly Algorithm

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Index Terms

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Keywords

Test Case, Information Flow Metric, Firefly algorithm, UML.