Abstract

Software testing is the primary activity to produce reliable software. Reliability of software is very much dependent on the way of testing performed. Software testing, which is usually last activity of the software development cycle is performed under the pressure. Quality and reliability of software are much dependent on test paths which are executed by test cases. Generation of optimized test paths is a challenging part of the software testing process. In this paper, an important effort is made to propose a new technique to obtain the optimized test paths from UML sequence diagram. A tailored algorithm called as Firefly Algorithm is used to get the critical paths. Firefly algorithm is metaheuristic and inspired from flashing behavior of fireflies. A case study of Patient registration system are is used as to explain the proposed approach. Information Flow Metric and their cyclomatic complexity are used for prioritization of test paths. Results indicated that optimized paths from sequence diagram have no redundancy and produced the better results.

References
18. Ming Huwi Horng, “Vector quantization using the firefly algorithm for image


**Index Terms**

Computer Science  
Software Engineering

**Keywords**
UML, Software Testing, Sequence Diagram, Quality Software, Optimized test paths