Abstract

The most important issue for software industry is to ensure software quality. The software that delivered to the end user must have high quality that meets user requirements. Software must be tested to ensure its quality. In the context of the path-based testing it is important to find the optimal paths from all possible code execution paths to reduce testing process cost and time. The optimal paths are the less number of the paths that cover all source code statements.

The proposed algorithm accepts java source code as an input and generates the control flow graph (CFG) corresponding to that code. Using anti-ant colony optimization, the optimal paths corresponding to the source code will be generated. The proposed algorithm determines the minimum set of paths that cover all source code statements efficiently and accurately.

References

1. Xinyang Wang, Yaqiu Jiang, and Wenhong Tian, "An Efficient Method for Automatic
Generation of Optimal Testing Paths using Anti –Ant Colony Algorithm


15. AUTHORS

16. Dr. Dujan B. Taha (Assistant Prof.) is currently a lecturer at Mosul University, College of Computer Science and Mathematics / Software Engineering Department. She received B.Sc. degree in Computer Science / University of Mosul in 1991, M.Sc. degree / University of Mosul in 1996 and Ph.D. degree / University of Mosul in 2005. Her research interests are in information and network security, software engineering, image processing and pattern recognition.


Index Terms

Computer Science

Algorithms
Keywords

Software Testing; Path Testing; Anti-Ant Colony Optimization; Cyclomatic Complexity; Control Flow Graph(CFG)