Abstract

The paper proposes System Dependence Graph (SDG) based algorithm to select different test paths for testing polymorphic call-sites. SDG, includes control and data dependencies, helps both the testers and developers of object-oriented programs to better understand the polymorphic interactions within the software. In addition, the algorithm considers only the method bindings of a polymorphic call-site having different definition sets. As a result, the number of test paths for testing polymorphism gets reduced. Also, the algorithm has been implemented in a prototype Graphical User Interface (GUI) based tool. The results are obtained by using the tool, which demonstrate the proposed technique.

References

- M. J. Harrold and J. D. McGregor, Incremental testing of object-oriented class structures, Department of Computer Science, Clemson University, Clemson, SC, USA, 1987.
- D. Parnas, On the criteria to be used in decomposing a system into modules, Communications of the ACM, 1972, vol. 15, no. 12, pp. 1053-1058.
- K. J. Ottenstein, Data-Flow Graphs as an Intermediate Program Form, PhD thesis, Computer Sciences Department, Purdue University, Lafayette, IN, August 1978.
495–505.

Index Terms

Computer Science

Algorithms

Keywords

System Dependence Graph  Polymorphic Method  Test Paths.