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.


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