**Regression test cases selection for object-oriented programs based on affected statement**

ABSTRACT

One of the most important activities in software maintenance is Regression testing. The re-execution of all test cases during the regression testing is costly. And even though several of the code based proposed techniques address procedural programs, so many of them can't be use directly on object-oriented programs. This paper presents modification-revealing test case selection for regression testing of object-oriented software using dependence graph model analysis of the source code. The experimental evaluation of our proposed approach was done using nine programs. We measured the performances of our selection approach using precision and inclusiveness metrics. It was observed from the results that our approach increase the efficiency and effectiveness of regression testing in term of precision and inclusiveness. It was concluded that selection of modification-revealing test cases based on affected statements provides considerably better results for precision and inclusiveness compared to retest-all and random technique, and reducing the cost of regression testing.

**Keyword:** Regression testing; Test case selection; Extended system dependence graph