

A preliminary investigation towards test suite optimization approach for enhanced state-sensitivity partitioning

ABSTRACT

Testing is crucial in software development. Continuous researches being done to discover effective approaches in testing that capable to detect faults despite of reducing cost. Previous work in State-Sensitivity Partitioning (SSP) technique, which based on all-transition coverage criterion, has been introduced to avoid exhaustively testing the entire data states of a module by partitioning it based on state's sensitivity towards events, conditions and action. The test data for that particular module testing is in form of event sequences (or test sequence) and sets of test sequences in test cases will perform SSP test suite. The problem occurs in SSP test suite is data state redundancy that leads towards suite growth. This paper aims to discuss an initial step of our ongoing research in enhancing prior SSP test suite. Our work will try to find out the best way in removing redundant data state in order to minimize the suite size but yet capable to detect faults introduced by five selective mutation operators effectively as the original suite.

Keyword: Data state redundancy; Test sequences; State sensitivity partitioning (SSP); Mutation operators; Testing