

Towards semantic mutation testing of aspect-oriented programs

ABSTRACT

Aspect-oriented programs have received much attention from software testing researchers. Various testing techniques and approaches have been proposed to tackle issues and challenges when testing aspect-oriented programs including traditional mutation testing. In traditional mutation testing of aspect-oriented programs, mutants are generated by making small changes to the syntax of the aspect-oriented language. Recently, a new approach known as semantic mutation testing has been proposed. This approach mutates the semantics of the language in which the program is written. The mutants generated misunderstandings of the language which are different classes of faults. Aspect-oriented programming presents itself with different properties that can be further explored with respect to semantic mutation testing. This paper describes various possible scenarios that semantic mutation testing strategy might have particular value in testing aspect-oriented programs.

Keyword: Aspect-oriented program testing; Mutation testing; Semantic mutation testin