

Factor determination in prioritizing test cases for event sequences: A systematic literature review

ABSTRACT

The generation of test cases is a challenging phase in software testing. The process of test case generation becomes more expensive and time-consuming when the test suites become larger. Many researchers have proposed the test case prioritization (TCP) technique to schedule test cases, so that those with the highest priority are executed first before lower priority test cases. One of the performance goals of TCP is the rate of fault detection, which is a measure of how quickly faults are detected within the testing phase. However, the existing TCP technique has some limitations. This paper presents the results of a systematic literature review (SLR) of relevant primary studies as evidence of the existence of TCP in the area of event sequences. Consequently, five major techniques and 10 factors were identified and analysed. This study aims to review and identify techniques and factors that influence the process of assigning weight values in TCP processes. The proposed factors need to be evaluated in terms of their contribution to the performance of the TCP technique. Some researchers believe that a combination of factors might be required to produce unique weights during the TCP processes. Nevertheless, most studies applied the random method or did not provide any information regarding the same weight value issues.

Keyword: Unique weight; Test case prioritization; Systematic review

