Incorporating Varying Requirement Prioreities and Costs in Test Case Prioritization

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Abstract - It has been observed from literature that test case prioritization schedules the test cases in an order that increases the effectiveness in achieving some performance goals . One of the most important goals is the rate of false detection . Test cases should run in order that increases the possibility of fault detection and also that detects the most severe faults at the earliest in its testing life cycle. Test case prioritization techniques have proved to be beneficial for improving regression testing activeness. While code coverage based prioritization techniques have found to be taken by most scholars , test case prioritization based on requirements in a cost effective manner has not been taken for study so far . Hence, in this paper, we proposed to put forth a model for system level Test Case Prioritization (TCP) from software requirement specification to improve user satisfaction with quality software that can also be cost effective and to improve the rate of severe fault detection . The proposed model prioritizes the system test cases based on the six factors : Customer priority , Changes in requirement , implementation complexity , usability , Application Flow and Fault impact . The proposed prioritization technique is experimented in three phases with students project and two sets of industrial projects and the results show convincingly that the proposed prioritization technique improves the rate of severe fault detection .