

Integration Metrics and Software Testing

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Abstract

Software metrics and testing methodologies are widely applied in evaluating and assuring software quality. However, the existed metrics and testing methodologies are developed independently. Since most testing strategies and metrics are derived from similar program factors, such as control flow or data flow factors, software development methodologies can be developed by considering both testing and metrics factors to be utilized in testing and measurement of software to form a more effective software development tool. This will significantly reduce the costs in constructing automated tools for testing and metrics by removing the redundant work to construct both. Path Complexity Techniques (PCT) are proposed for guiding testing and measuring software complexity. Two test criteria: *intra level first* and *inter level first* are presented. The idea of the most complicated path is also illustrated.

Keywords: Software Testing, Software Metrics, Path Complexity Techniques (PCT).