

Object-Oriented Software Development Techniques-Combining Testing and Metrics

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Abstract

Software testing methodologies and metrics are widely applied to assuring and evaluating software quality. However, current software testing and metrics based on object-oriented programming languages are developed individually. This paper introduces an important method named **URI** (Unit repeated inheritance) to build integrated *Object-Oriented Testing* and *Object-Oriented Metrics*. The approach describes **ILT** (Inheritance Level Technique) methods for a guide to test software errors and measure software complexity. The proposed techniques show that *inheritance* has a close relation with object-oriented software complexity and reveal that overuse of *repeated (multiple)* inheritance will increase software complexity and be prone to implicit software errors. Also, two test criteria: *intra level first* and *inter level first* are presented.

Keywords: Software Testing, Software Metrics, Unit Repeated Inheritance (URI), *Inheritance Level Technique*.