

A state-based approach to integration testing based on UML models

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Abstract

Correct functioning of object-oriented software depends upon the successful integration of classes. While individual classes may function correctly, several new faults can arise when these classes are integrated together. In this paper, we present a technique to enhance testing of interactions among modal classes. The technique combines UML collaboration diagrams and state charts to automatically generate an intermediate test model, called SCOTEM (State COllaboration TEst Model). The SCOTEM is then used to generate valid test paths. We also define various coverage criteria to generate test paths from the SCOTEM model. In order to assess our technique, we have developed a tool and applied