Abstract

We propose an integrated approach to generate test cases from UML sequence and activity diagrams. We first transform these UML diagrams into a graph. Then, we propose an algorithm to generate test scenarios from the constructed graph. Next, the necessary information for test case generation, such as method-activity sequence, associated objects, and constraint conditions are extracted from test scenario. Our approach reduces the number of test cases and still achieves adequate test coverage. We achieve message-activity path coverage and category partitioning method for each predicate conditions found in the specific path of the design model.

**Index Terms**

- **Computer Science**
- **Software Testing**

**Key words**

- **Software Testing**
- **UML**

Models
- **Sequence diagram**

Activity diagram

Model Flow Graph

Test Sequence