Validation of UML Class Model through Finite-State Machine

Abstract

The Unified Modeling Language (UML) is an independent to programming language which has a collection of modeling tools through which software engineers and researcher represent the complex research problems in the diagrammatic form. The various tools represent the static as well as the dynamic behavior of an object-oriented software system. The state chart diagram is a well known tool of UML which shows the dynamic behavior of states of an object-oriented system. The entire life of an object is represented by this tool. The state transformation of an object is depending on the three major components like transition function, action and possible inputs. The paths through which an object changes its state are determined by the state chart diagrams. These paths can be represented in the graphical form with the use of Finite State Machine (FSM). The graphical representation is very useful for determining the correctness of the diagram. In the present work, an approach to validate the UML class model through FSM is described with a creation of the transition table. For testing purpose, some test cases are generated to test the correctness of UML state chart diagram by taking a real case study of Life Insurance Corporation (LIC) of India. An approach to verify the correctness of UML diagram is presented.

References
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Index Terms

Computer Science Software Engineering

Keywords

Uml Fsm Class Diagram State Diagram Transition Table