

Hierarchische Verhaltensbeschreibung in objekt-orientierten Systemmodellen - eine Grundlage für modellbasiertes Prototyping

[Hierarchical Description of Behavior in Object-Oriented System Models - A Foundation for Model-Based Prototyping (in German)]

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Abstract

This paper describes an object-oriented modeling concept for the specification and design of software that allows building tools that generate a prototype from a model.

The core idea of the approach is to build models using objects (not classes), to let objects be decomposed into a whole-part-hierarchy and to combine this hierarchical object model with a hierarchical behavior model (statecharts) in a systematic way. In contrast to other object-oriented specification methods, this concept is capable of modeling global system behavior (not only object life cycles) in an object-oriented framework. The model has a formally defined semantics, thus allowing the generation of prototype code.

Our concept of model-based prototyping is superior to traditional prototyping, because a model is more illustrative, better understandable and easier to change than the code of a traditional, hand-made prototype.