

Delta-oriented monitor specifications

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Abstract

Delta-oriented programming allows software developers to define software product lines as variations of a common code base, where variations are expressed as so-called program deltas. Monitor-oriented programming (MOP) provides a mechanism to execute functionality based on the program's execution history; this is useful, e.g. for the purpose of runtime verification and for enforcing security policies.

We discuss how delta-oriented programming and MOP can benefit each other in the Abstract Behavior Specification Language (ABS). We use deltas over monitor definitions to concisely capture protocol changes induced by feature combinations, and propose a notation to denote those deltas. In addition, we explore the design space for expressing runtime monitors as program deltas in ABS.