

Software Engineering with OBJ

Algebraic Specification in Action

is a comprehensive introduction to OBJ, the most widely used algebraic specification system. As a formal specification language, OBJ makes specifications and designs more precise and easier to read, as well as making maintenance easier and more accurate. OBJ differs from most other specification languages not just in having a formal semantics, but in being executable, either through symbolic execution with term rewriting, or more generally through theorem proving. One problem with specifications is that they are often wrong. OBJ can help validate specifications by executing test cases, and by proving properties.

As well as providing a detailed introduction to the language and the OBJ system that implements it, provides case studies by leading practitioners in the field, in areas such as computer graphics standards, hardware design, and parallel computation. The case studies demonstrate that OBJ can be used in a wide variety of ways to achieve a wide variety of practical aims in the system development process. The papers on various OBJ systems also demonstrate that the language is relatively easy to understand, implement, and use, and that it supports formal reasoning in a straightforward but powerful way. will be of interest to students and teachers in the areas of data types, programming languages, semantics, theorem proving, and algebra, as well as to researchers and practitioners in software engineering.

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