Вестник Воронежского государственного университета www.vestnik.vsu.ru
Серия: Системный анализ и информационные технологии, 2006, № 2

RESEARCH AND TRANSFORMATION METHODS OF HIERARCHIES OF TYPES ON BASIS OF LOGICAL STRUCTURES

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The article is devoted to the construction of a mathematical structure, which adequately models an architecture of the hierarchy of types in object-oriented systems. A lattice, with the binary relation of a special class set on it, is used as this kind of structure. Definitions and theorems concerning the logic of bounded generalizations, which is peculiar to operations on a type lattice, are given. A model of the hierarchy of types is proposed on basis of this theory. This model can be applied to the research and automatic optimization of this kind of hierarchy. This article concerns one of the optimization spheres, namely elimination of code duplication that represents the most crucial refactoring problem in object-oriented systems.