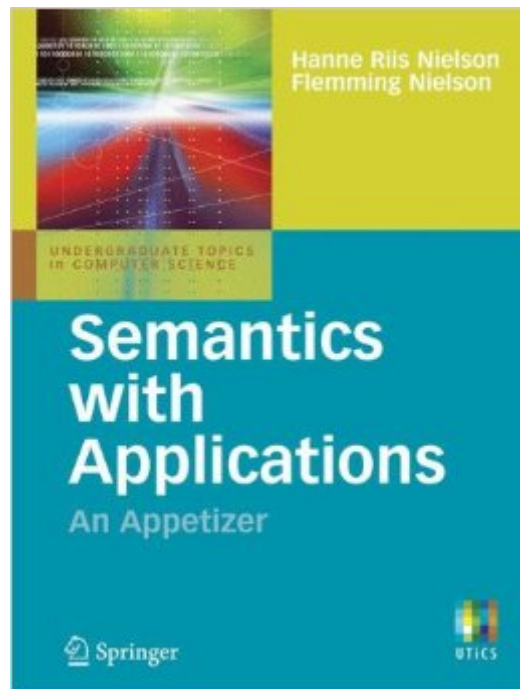# Semantics With Applications: An Appetizer (Undergraduate Topics In Computer Science)

Synopsis

Semantics will play an important role in the future development of software systems and domain-specific languages. This book provides a needed introductory presentation of the fundamental ideas behind these approaches, stresses their relationship by formulating and proving the relevant theorems, and illustrates the applications of semantics in computer science. Historically important application areas are presented together with some exciting potential applications. The text investigates the relationship between various methods and describes some of the main ideas used, illustrating these by means of interesting applications. The book provides a rigorous introduction to the main approaches to formal semantics of programming languages.

Book Information

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Customer Reviews

This is a very nice introduction to the formal programming language semantics. The book covers the operational semantics, denotational semantics, and axiomatic semantics. In the chapters of the operational semantics, readers learn to define the small-step/big-step semantics with the WHILE language, to know the subtle differences between the two styles, and to prove the correctness of the compilation of WHILE into a small machine instructions. In the chapters of the denotational semantics, readers learn to the principle of program analysis. In the chapters of the axiomatic semantics, readers experience the Hoare logic, which is an important core for verifying programs.

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