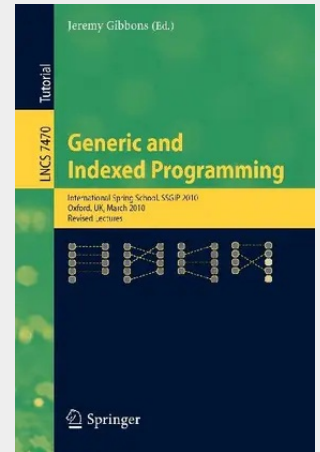


Generic and Indexed Programming

Generic programming is about making programs more widely applicable via exotic kinds of parametrization---not just along the dimensions of values or of types, but also of things such as the shape of data, algebraic structures, strategies, computational paradigms, and so on. Indexed programming is a lightweight form of dependently typed programming, constraining flexibility by allowing one to state and check relationships between parameters: that the shapes of two arguments agree, that an encoded value matches some type, that values transmitted along a channel conform to the stated protocol, and so on. The two forces of genericity and indexing balance each other nicely, simultaneously promoting and controlling generality. The 5 lectures included in this book stem from the Spring School on Generic and Indexed Programming, held in Oxford, UK, in March 2010 as a closing activity of the generic and indexed programming project at Oxford which took place in the years 2006-2010.

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