

Generic and indexed programming : International Spring School, SSGIP 2010, Oxford, UK, March 22-26, 2010 : revised lectures

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Abstrak

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.