

Constraint-based Concurrency in Java

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ABSTRACT

Constraint-based synchronization pioneered by (concurrent) logic and concurrent constraint programming is a powerful mechanism for elegantly synchronizing concurrent and distributed computations. They support a declarative model of concurrency that avoids explicitly suspending and resuming computations. This paper describes (1) a model of concurrency based on precedence constraints, (2) its implementation as an extension to the Java programming language, and (3) how model-based verification methods can straightforwardly applied to programs in the resulting language.

Keywords: Concurrency, synchronization, constraints, declarative programming.