

Compositionally Modular Scheme

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Abstract. We present a new module system for Scheme that supports a high degree of implementation reuse via module composition. The module system encourages breaking down a program into the smallest possible individually meaningful modules, and recomposing them using a powerful set of adaptation and combination mechanisms. Even hierarchical nesting is achieved via a composition operation. This module system is shown to support a stronger and more flexible notion of compositionality and reuse than traditional class-based inheritance in object-oriented programming. Finally, this module system is itself implemented by reusing a language independent OO framework.

Keywords: module systems, object-oriented programming, inheritance, Scheme.