

Parameterized Modules

Modules with parameters are quite different than ordinary modules. In fact, they are not really modules at all. When a module is provided to instantiate a parameter, it is imported, and only then is a specification obtained (i.e., the entire set of equations becomes known). A parameterized module is a partial scheme for specifications that may be completed repeatedly in many different ways. It is effectively a mapping from a given parameter module(s) to a completed specification.

***Theories* are constraints placed on module parameters. The modules that eventually fill the role of the parameters are required to meet these constraints to assure a coherent interface. Several commonly occurring constraints (theories) are pre-defined in CafeOBJ:**

- **TRIV** makes no requirement other than the inclusion of a sort named **Elt**.
- **POSET** requires the **Elt** sort plus an operation **_<_** : **Elt** **Elt** -> **Elt** that satisfies the two equations:
 - eq $E1 < E1 = \text{false}$
 - cq $E1 < E3$ if $E1 < E2$ and $E2 < E3$
- **EQV** requires the **Elt** sort plus an operation **eq** : **Elt** **Elt** -> **Elt** that satisfies the two equations:
 - eq $(E1 \text{ eq } E1) = \text{true}$,
 - cq $(E1 \text{ eq } E3) = \text{true}$ if $(E1 \text{ eq } E2)$ and $(E2 \text{ eq } E3)$.