

Unstable-Funcons-beta: Indexing *

The P_LanCompS Project

Indexing.cbs | PLAIN | PRETTY

Value indexing

[*Entity* value-index
 Funcon initialise-index
 Funcon allocate-index
 Funcon lookup-index]

The following funcons support indexing of values by natural numbers. They could be enhanced to ensure that each value has at most one index, and to allow finding the index of a value.

Entity $\langle _, \text{value-index}(_ : \text{ground-values}^*) \rangle \longrightarrow$
 $\langle _, \text{value-index}(_ : \text{ground-values}^*) \rangle$

Funcon initialise-index : \Rightarrow null-type
 Rule $\langle \text{initialise-index}, \text{value-index}(_) \rangle \longrightarrow \langle \text{null-value}, \text{value-index}(_) \rangle$

Funcon allocate-index($_ : \text{ground-values}$) : \Rightarrow natural-numbers
 Rule $\langle \text{allocate-index}(V : \text{ground-values}), \text{value-index}(V^*) \rangle \longrightarrow$
 $\langle \text{length}(V^*, V), \text{value-index}(V^*, V) \rangle$

Funcon lookup-index($_ : \text{natural-numbers}$) : \Rightarrow ground-values
 Rule $\langle \text{lookup-index}(N : \text{natural-numbers}), \text{value-index}(V^*) \rangle \longrightarrow$
 $\langle \text{index}(N, V^*), \text{value-index}(V^*) \rangle$
 Assert lookup-index(allocate-index($V : \text{ground-values}$)) $\longrightarrow V$

*Suggestions for improvement: plancomps@gmail.com.
Reports of issues: <https://github.com/plancomps/CBS-beta/issues>.