

Languages-beta: IMP-2 *

The PLaNCompS Project

IMP-2.cbs | PLAIN | PRETTY

Language "IMP"

2 Boolean expressions

Syntax $BExp : bexp ::=$ `false`
| `true`
| `aexp <= aexp`
| `! bexp`
| `bexp && bexp`
| `(bexp)`

Semantics $eval\text{-}bool \llbracket _ : bexp \rrbracket : \Rightarrow \text{booleans}$

Rule $eval\text{-}bool \llbracket \text{false} \rrbracket = \text{false}$

Rule $eval\text{-}bool \llbracket \text{true} \rrbracket = \text{true}$

Rule $eval\text{-}bool \llbracket AExp_1 <= AExp_2 \rrbracket =$
 $\text{is-less-or-equal}(eval\text{-}arith \llbracket AExp_1 \rrbracket, eval\text{-}arith \llbracket AExp_2 \rrbracket)$

Rule $eval\text{-}bool \llbracket ! BExp \rrbracket = \text{not}(eval\text{-}bool \llbracket BExp \rrbracket)$

Rule $eval\text{-}bool \llbracket BExp_1 \&\& BExp_2 \rrbracket =$
 $\text{if-true-else}(eval\text{-}bool \llbracket BExp_1 \rrbracket, eval\text{-}bool \llbracket BExp_2 \rrbracket, \text{false})$

Rule $eval\text{-}bool \llbracket (BExp) \rrbracket = eval\text{-}bool \llbracket BExp \rrbracket$

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