

Unstable-Languages-beta: IMPPP-3 *

The PLaNCompS Project

IMPPP-3.cbs | PLAIN | PRETTY

Language "IMPPP"

3 Boolean expressions

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

Semantics $\text{eval-bool}[_ : \text{bexp}] : \Rightarrow \text{booleans}$

Rule $\text{eval-bool}[\text{'false'}] = \text{false}$

Rule `eval-bool` `[['true']] = true`

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

Rule $\text{eval-bool}[\text{'!'} BExp] = \text{not}(\text{eval-bool}[BExp])$

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

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

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