IMP

MODULE IMP-SYNTAX

SYNTAX *AExp* ::= *Int*
| *String*
| *Id*
| `++` *Id*
| `read` `(` `)`
| *AExp* `/` *AExp* [division(division()), strict(strict())]
| *AExp* `+` *AExp* [strict(strict())]
| `(` *AExp* `)` [bracket(bracket())]

SYNTAX *BExp* ::= *Bool*
| *AExp* ≤ *AExp* [seqstrict(seqstrict())]
| `!` *BExp* [strict(strict())]
| *BExp* && *BExp* [strict(strict(1))]
| `(` *BExp* `)` [bracket(bracket())]

SYNTAX *Block* ::= `{` `}`
| `{` *Stmt* `}`

SYNTAX *Stmt* ::= *Block*
| *Id* `=` *AExp* `;` [strict(strict(2))]
| `if` `(` *BExp* `)` *Block* `else` *Block* [strict(strict(1))]
| `while` `(` *BExp* `)` *Block*
| `int` *Ids* `;`
| `print` `(` *AExps* `)` `;` [strict(strict())]
| `halt` `;`
| `spawn` *Stmt*
| *Stmt* *Stmt*

SYNTAX *Ids* ::= *List*{*Id*, “,”} [strict(strict())]

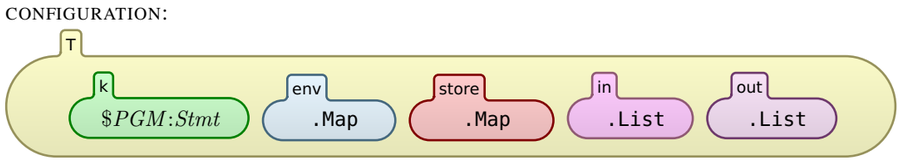
SYNTAX *AExps* ::= *List*{*AExp*, “,”} [strict(strict())]

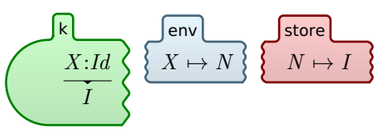
END MODULE

MODULE IMP

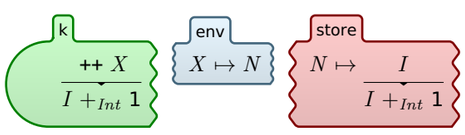
SYNTAX *KResult* ::= *Int*
| *Bool*
| *String*

CONFIGURATION:

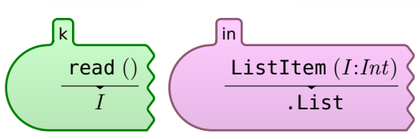


RULE 

[lookup(lookup())]

RULE 

[increment(increment())]

RULE 

RULE $\frac{I1 \texttt{ / } I2}{I1 \div_{Int} I2}$ requires $I2 =/=_{Int} 0$

RULE $\frac{I1 \texttt{ + } I2}{I1 +_{Int} I2}$

RULE $\frac{Str1 \texttt{ + } Str2}{Str1 +_{String} Str2}$

RULE $\frac{I1 \leq I2}{I1 \leq_{Int} I2}$

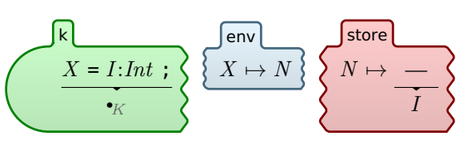
RULE $\frac{\texttt{!}\ T}{\neg_{Bool} T}$

RULE $\frac{\texttt{true \&\& } B}{B}$

RULE $\frac{\texttt{false \&\& } \_\_}{\texttt{false}}$

RULE $\frac{\{\}}{\bullet_K}$ [structural(structural())]

RULE $\frac{\{S\}}{S}$ [structural(structural())]

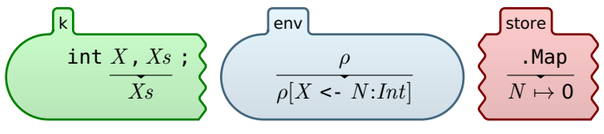
RULE 

RULE $\frac{S1:Stmt \quad S2:Stmt}{S1 \curvearrowright S2}$ [structural(structural())]

RULE $\frac{\texttt{if (true)}S \texttt{ else } \_\_}{S}$

RULE $\frac{\texttt{if (false)}\_\_ \texttt{ else } S}{S}$

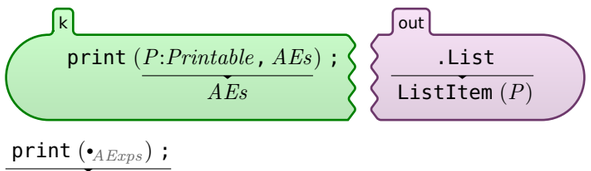
RULE $\frac{\texttt{while } (B)S}{\texttt{if } (B)\{S \quad \texttt{while } (B)S\} \texttt{ else } \{\}}$ [structural(structural())]

RULE 

RULE $\frac{\texttt{int } \bullet_{Ids} \texttt{ ;}}{\bullet_K}$ [structural(structural())]

SYNTAX *Printable* ::= *Int*
| *String*

SYNTAX *AExp* ::= *Printable*

RULE 

RULE $\frac{\texttt{print } (\bullet_{AExps}) \texttt{ ;}}{\bullet_K}$ [structural(structural())]

END MODULE