

Functive

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1 Grammar

1.1 Formalization

$program ::= \overline{module}$

$module ::= \text{Begin Module } n . \bar{s} \text{ End Module } n .$

$s ::= \text{Definition } n : t := e .$
 $\quad \quad \quad | \text{ Assumption } n : t .$

$e ::= v \mid (e' e) \mid (\text{let } n := e \text{ in } e)$
 $\quad \quad \quad | (\text{fun } n \Rightarrow e) \mid (\text{rec } n \text{ in } n \Rightarrow e)$

$v ::= \text{primitive-value} \mid n$

$t ::= \text{primitive-type} \mid n \mid (t t) \mid (t e)$
 $\quad \quad \quad | (t \rightarrow t) \mid (\text{forall } n : t , t)$

$\text{primitive-value} ::= z \in \mathbb{Z} \mid b \in \{true, false\} \mid ()$

$\text{primitive-type} ::= \text{integer} \mid \text{boolean} \mid \text{unit} \mid \text{type}$

$n ::= \text{string} \mid n.\text{string}$

1.2 Notation

- An expression with an overline may be repeated any natural number of times.