

# 1 Language Definitions

## 1.1 Terms

$x \in \text{reference}$

$\iota \in \text{object identifier}$

$\eta \in \text{name} \mid \eta \ \eta_0 \dots \eta_n$

$o := \langle \sigma, \Pi \rangle$

$e := x \mid \eta \mid \text{let } x := e_0 \text{ in } e_1 \mid \text{if } e \ e \ e \mid e \ e_0 \dots e_n$

$\sigma := x \mapsto \iota$

$\Pi := \eta \mapsto \iota$

$\theta := \iota \mapsto o$

## 1.2 Garden of Eden

$\text{Object} := \langle \{ \begin{array}{ll} x(\text{instance\_members}) & \mapsto \eta(\text{tbd}), \\ x(\text{type}) & \mapsto \eta(\text{Class}), \}, \{ \} \rangle$   
 $\begin{array}{ll} x(\text{supertype}) & \mapsto \eta(\text{Void}) \end{array}$

$\text{Class} := \langle \{ \begin{array}{ll} x(\text{instance\_members}) & \mapsto \eta(\text{List})\{\eta(\text{Tuple})\{\eta(\text{Symbol}), \eta(\text{Type})\}\}, \\ x(\text{type}) & \mapsto \eta(\text{Class}), \\ x(\text{supertype}) & \mapsto \eta(\text{Type}) \end{array} \}, \{ \} \rangle$