

$$\begin{aligned}
E &::= C \mid L \mid X \\
&\quad \mid (E \ E \ \dots) \\
&\quad \mid (\text{if } E \ E \ E) \\
C &::= N \mid O \mid B \mid \text{nil} \mid H \mid \text{ERR} \\
X &::= \text{variable-not-otherwise-mentioned} \\
\text{ERR} &::= (\text{error any any } \dots) \\
L &::= (\text{fn } [X \ \dots] \ E) \mid (\text{fn } X \ [X \ \dots] \ E) \\
\text{NONFNV} &::= B \mid H \mid \text{nil} \mid N \\
V &::= O \mid L \mid \text{NONFNV} \\
V^e &::= V \mid \text{ERR} \\
H &::= (\text{HashMap } (V \ V) \ \dots) \\
B &::= \text{true} \mid \text{false} \\
N &::= \text{number} \\
Z &::= \text{natural} \\
O &::= P \\
&\quad \mid \text{inc} \mid \text{dec} \\
&\quad \mid + \mid * \mid \text{dissoc} \\
&\quad \mid \text{assoc} \mid \text{get} \\
P &::= \text{zero?} \mid \text{number?} \mid \text{boolean?} \mid \text{nil?} \\
C &::= [] \mid (\text{if } C \ E \ E) \mid (V \ \dots \ C \ E \ \dots)
\end{aligned}$$