

data $\vdash_ :$ Context \rightarrow Type \rightarrow Set where

Var : $\forall \{ \Gamma \ A \} \rightarrow A \in \Gamma \rightarrow \Gamma \vdash A$

-- subtyping

Sub : $\forall \{ \Gamma \ A \ B \} \rightarrow \Gamma \vdash A \rightarrow A \leq : B \rightarrow \Gamma \vdash B$

-- lambda function and application

Lambda : $\forall \{ \Gamma \ A \ B \} \rightarrow \Gamma , A \vdash B \rightarrow \Gamma \vdash A \Rightarrow B$

App : $\forall \{ \Gamma \ A \ B \} \rightarrow \Gamma \vdash A \Rightarrow B \rightarrow \Gamma \vdash A \rightarrow \Gamma \vdash B$

-- command

Skip : $\forall \{ \Gamma \} \rightarrow \Gamma \vdash \text{comm}$

Seq : $\forall \{ \Gamma \} \rightarrow \Gamma \vdash \text{comm} \rightarrow \Gamma \vdash \text{comm} \rightarrow \Gamma \vdash \text{comm}$

NewVar : $\forall \{ \Gamma \} \rightarrow \Gamma , \text{intvar} \vdash \text{comm} \rightarrow \Gamma \vdash \text{comm}$

Assign : $\forall \{ \Gamma \} \rightarrow \Gamma \vdash \text{intacc} \rightarrow \Gamma \vdash \text{intexp} \rightarrow \Gamma \vdash \text{comm}$

-- intexp

Lit : $\forall \{ \Gamma \} \rightarrow \mathbb{Z} \rightarrow \Gamma \vdash \text{intexp}$

Neg : $\forall \{ \Gamma \} \rightarrow \Gamma \vdash \text{intexp} \rightarrow \Gamma \vdash \text{intexp}$

Plus : $\forall \{ \Gamma \} \rightarrow \Gamma \vdash \text{intexp} \rightarrow \Gamma \vdash \text{intexp} \rightarrow \Gamma \vdash \text{intexp}$