

$\text{data Value} : \forall \{ \Gamma A \} \rightarrow \Gamma \vdash A \rightarrow \text{Set where}$
 $\text{V-Lambda} : \forall \{ \Gamma A B \} \{ F : \Gamma, A \vdash B \} \rightarrow \text{Value } (\text{Lambda } \{ \Gamma \} F)$
 $\text{V-Lit} : \forall \{ \Gamma \} \{ i : \mathbb{Z} \} \rightarrow \text{Value } (\text{Lit } \{ \Gamma \} i)$
 $\text{V-Skip} : \forall \{ \Gamma \} \rightarrow \text{Value } (\text{Skip } \{ \Gamma \})$

-- Renaming

$\text{ext} : \forall \{ \Gamma \Delta \} \rightarrow (\forall \{ A \} \rightarrow A \in \Gamma \rightarrow A \in \Delta)$
 $\rightarrow (\forall \{ A B \} \rightarrow B \in \Gamma, A \rightarrow B \in \Delta, A)$

$\text{ext } \rho \text{ Zero} = \text{Zero}$

$\text{ext } \rho (\text{Suc } x) = \text{Suc } (\rho x)$

$\text{rename} : \forall \{ \Gamma \Delta \} \rightarrow (\forall \{ A \} \rightarrow A \in \Gamma \rightarrow A \in \Delta)$
 $\rightarrow (\forall \{ A \} \rightarrow \Gamma \vdash A \rightarrow \Delta \vdash A)$

$\text{rename } \rho (\text{Var } a) = \text{Var } (\rho a)$

$\text{rename } \rho (\text{Lambda } f) = \text{Lambda } (\text{rename } (\text{ext } \rho) f)$

$\text{rename } \rho (\text{Sub } a A \leq B) = \text{Sub } (\text{rename } \rho a) A \leq B$

$\text{rename } \rho (\text{App } f e) = \text{App } (\text{rename } \rho f) (\text{rename } \rho e)$

$\text{rename } \rho \text{ Skip} = \text{Skip}$

$\text{rename } \rho (\text{Seq } c_1 c_2) = \text{Seq } (\text{rename } \rho c_1) (\text{rename } \rho c_2)$

$\text{rename } \rho (\text{NewVar } c) = \text{NewVar } (\text{rename } (\text{ext } \rho) c)$

$\text{rename } \rho (\text{Assign } a e) = \text{Assign } (\text{rename } \rho a) (\text{rename } \rho e)$

$\text{rename } \rho (\text{Lit } i) = \text{Lit } i$

$\text{rename } \rho (\text{Neg } e) = \text{Neg } (\text{rename } \rho e)$

$\text{rename } \rho (\text{Plus } e_1 e_2) = \text{Plus } (\text{rename } \rho e_1) (\text{rename } \rho e_2)$