tvar, b	type variable	
var, x	term variable	
const, c	term constant	

kind, K	$::=$			
	$\|$	type		
	$\|$	$\Pi\, x : T.K$		
	$\|$	$K[\theta]$		
	$\|$	(K)		
type, T	$::=$			
	$\|$	b		
	$\|$	$T\ t$		
	$\|$	$\Pi\, x : T.T'$		
	$\|$	(T)		
	$\|$	$T[\theta]$		
term, t	$::=$			term
	$\|$	x		variable
	$\|$	c		constant
	$\|$	$\lambda x : T.t$	bind x in t	lambda
	$\|$	$t\ t'$		app
	$\|$	(t)		
	$\|$	$t[\theta]$		
signature, Σ	$::=$			signature
	$\|$	$\cdot$		
	$\|$	$\Sigma, c : T$		
	$\|$	$\Sigma, b : K$		
context, Γ	$::=$			context
	$\|$	$\cdot$		
	$\|$	$\Gamma, x : T$		
subst, θ	$::=$			
	$\|$	$\cdot$		
	$\|$	$\theta, t/x$		
terminals	$::=$			
	$\|$	type		
	$\|$	kind		
	$\|$	λ		
	$\|$	Π		
	$\|$	$\cdot$		
	$\|$	$\cdot$		
	$\|$	$\cdot$		
formula	$::=$			
	$\|$	*judgement*		
	$\|$	**not** (*formula*)		

Jop	::=	
	|	$b \in \mathbf{dom}(\Sigma)$
	|	$c \in \mathbf{dom}(\Sigma)$
	|	$x \in \mathbf{dom}(\Gamma)$
	|	$\Sigma; \Gamma \vdash K \equiv K' : \mathrm{kind}$
	|	$\Sigma; \Gamma \vdash T \equiv T' : K$
	|	$\Sigma; \Gamma \vdash t \equiv t' : T$
	|	$\vdash \Sigma\ \mathrm{sig}$
	|	$\Sigma \vdash \Gamma\ \mathrm{ctx}$
	|	$\Sigma; \Gamma \vdash K : \mathrm{kind}$
	|	$\Sigma; \Gamma \vdash T : K$
	|	$\Sigma; \Gamma \vdash t : T$
judgement	::=	
	|	*Jop*
user_syntax	::=	
	|	*tvar*
	|	*var*
	|	*const*
	|	*kind*
	|	*type*
	|	*term*
	|	*signature*
	|	*context*
	|	*subst*
	|	*terminals*
	|	*formula*

$\boxed{b \in \mathbf{dom}(\Sigma)}$

$$\frac{}{b \in \mathbf{dom}(\Sigma, b : K)} \quad \textsc{binsig\_1}$$

$$\frac{b \in \mathbf{dom}(\Sigma)}{b \in \mathbf{dom}(\Sigma, b' : K)} \quad \textsc{binsig\_2}$$

$$\frac{b \in \mathbf{dom}(\Sigma)}{b \in \mathbf{dom}(\Sigma, c : T)} \quad \textsc{binsig\_3}$$

$\boxed{c \in \mathbf{dom}(\Sigma)}$

$$\frac{}{c \in \mathbf{dom}(\Sigma, c : T)} \quad \textsc{cinsig\_1}$$

$$\frac{c \in \mathbf{dom}(\Sigma)}{c \in \mathbf{dom}(\Sigma, b : K)} \quad \textsc{cinsig\_2}$$

$$\frac{c \in \mathbf{dom}(\Sigma)}{c \in \mathbf{dom}(\Sigma, c' : T)} \quad \textsc{cinsig\_3}$$

$\boxed{x \in \mathbf{dom}(\Gamma)}$

$$\frac{}{x \in \mathbf{dom}(\Gamma, x : T)} \quad \textsc{xinctx\_1}$$

$$\frac{x \in \mathbf{dom}(\Gamma)}{x \in \mathbf{dom}(\Gamma, x' : T)} \quad \text{XINCTX\_2}$$

$\boxed{\Sigma; \Gamma \vdash K \equiv K' : \text{kind}}$

$$\frac{\begin{array}{c}\vdash \Sigma \text{ sig} \\ \Sigma \vdash \Gamma \text{ ctx}\end{array}}{\Sigma; \Gamma \vdash \text{type}[\theta] \equiv \text{type} : \text{kind}} \quad \text{sK\_1}$$

$$\frac{\begin{array}{c}\Sigma; \Gamma \vdash T[\theta] \equiv T' : K'' \\ \Sigma; \Gamma \vdash K[\theta] \equiv K' : \text{kind}\end{array}}{\Sigma; \Gamma \vdash (\Pi\, x : T.K)[\theta] \equiv (\Pi\, x : T'.K') : \text{kind}} \quad \text{sK\_2}$$

$\boxed{\Sigma; \Gamma \vdash T \equiv T' : K}$

$$\frac{\Sigma; \Gamma \vdash b : K}{\Sigma; \Gamma \vdash b[\theta] \equiv b : K} \quad \text{sT\_1}$$

$$\frac{\begin{array}{c}\Sigma; \Gamma \vdash T[\theta] \equiv T' : (\Pi\, x : T.K) \\ \Sigma; \Gamma \vdash t[\theta] \equiv t' : T\end{array}}{\Sigma; \Gamma \vdash (T\ t)[\theta] \equiv T'\ t' : K} \quad \text{sT\_2}$$

$$\frac{\begin{array}{c}\Sigma; \Gamma \vdash T_1[\theta] \equiv T_1' : \Pi\, x : T_2.K \\ \Sigma; \Gamma \vdash T_2[\theta] \equiv T_2' : K_2\end{array}}{\Sigma; \Gamma \vdash (\Pi\, x : T_1.T_2)[\theta] \equiv (\Pi\, x : T_1'.T_2') : \Pi\, x : T_1'.K_2} \quad \text{sT\_3}$$

$\boxed{\Sigma; \Gamma \vdash t \equiv t' : T}$

$$\frac{\Sigma; \Gamma \vdash c : T}{\Sigma; \Gamma \vdash c[\theta] \equiv c : T} \quad \text{ST\_1}$$

$$\frac{\Sigma; \Gamma \vdash t : T}{\Sigma; \Gamma \vdash x[\theta, t/x] \equiv t : T} \quad \text{ST\_2}$$

$$\frac{\Sigma; \Gamma \vdash x[\theta] \equiv t : T}{\Sigma; \Gamma \vdash x[\theta, t'/x'] \equiv t : T} \quad \text{ST\_3}$$

$$\frac{\begin{array}{c}\Sigma; \Gamma \vdash T[\theta] \equiv T' : K_2 \\ \Sigma; \Gamma \vdash t[\theta] \equiv t' : T_2\end{array}}{\Sigma; \Gamma \vdash (\lambda x : T.t)[\theta] \equiv (\lambda x : T'.t') : T_3} \quad \text{ST\_4}$$

$$\frac{\begin{array}{c}\Sigma; \Gamma \vdash t_1[\theta] \equiv t_1' : T_1 \\ \Sigma; \Gamma \vdash t_2[\theta] \equiv t_2' : T_2\end{array}}{\Sigma; \Gamma \vdash (t_1\ t_2)[\theta] \equiv t_1'\ t_2' : T_3} \quad \text{ST\_5}$$

$\boxed{\vdash \Sigma \text{ sig}}$

$$\frac{}{\vdash \cdot \text{ sig}} \quad \text{SIG\_EMPTY}$$

$$\frac{\begin{array}{l}\vdash \Sigma \text{ sig} \\ \Sigma; \cdot \vdash K : \text{kind} \\ \mathbf{not}\,(b \in \mathbf{dom}(\Sigma))\end{array}}{\vdash \Sigma, b : K \text{ sig}} \quad \text{SIG\_TYPE}$$

$$\frac{\begin{array}{l}\vdash \Sigma \text{ sig} \\ \Sigma; \cdot \vdash c : T \\ \mathbf{not}\,(b \in \mathbf{dom}(\Sigma))\end{array}}{\vdash \Sigma, b : K \text{ sig}} \quad \text{SIG\_CON}$$

$\boxed{\Sigma \vdash \Gamma \text{ ctx}}$

$$\frac{\vdash \Sigma \text{ sig}}{\Sigma \vdash \cdot \text{ ctx}} \quad \textsc{ctx\_empty}$$

$$\frac{\begin{array}{l}\vdash \Sigma \text{ sig}\\ \Sigma \vdash \Gamma \text{ ctx}\\ \Sigma; \Gamma \vdash A : K\\ \textbf{not}\,(x \in \textbf{dom}(\Gamma))\end{array}}{\Sigma \vdash \Gamma, x : A \text{ ctx}} \quad \textsc{ctx\_var}$$

$\boxed{\Sigma; \Gamma \vdash K : \text{kind}}$

$$\frac{\begin{array}{c}\vdash \Sigma \text{ sig}\\ \Sigma \vdash \Gamma \text{ ctx}\end{array}}{\Sigma; \Gamma \vdash \text{type} : \text{kind}} \quad \textsc{wfkind\_type}$$

$$\frac{\Sigma; \Gamma, x : T \vdash K : \text{kind}}{\Sigma; \Gamma \vdash \Pi\, x : T.K : \text{kind}} \quad \textsc{wfkind\_pi\_k\_intro}$$

$\boxed{\Sigma; \Gamma \vdash T : K}$

$$\frac{\begin{array}{c}\vdash \Sigma, b : K \text{ sig}\\ \Sigma, b : K \vdash \Gamma \text{ ctx}\end{array}}{\Sigma, b : K; \Gamma \vdash b : K} \quad \textsc{wftype\_tvar\_z}$$

$$\frac{\begin{array}{c}\vdash \Sigma, b : K \text{ sig}\\ \Sigma; \Gamma \vdash b' : K'\end{array}}{\Sigma, b : K; \Gamma \vdash b' : K'} \quad \textsc{wftype\_tvar\_s}$$

$$\frac{\begin{array}{l}\Sigma; \Gamma \vdash T : K'\\ \Sigma; \Gamma \vdash K \equiv K' : \text{kind}\end{array}}{\Sigma; \Gamma \vdash T : K} \quad \textsc{wftype\_t\_eq}$$

$$\frac{\Sigma; \Gamma, x : T \vdash T' : K}{\Sigma; \Gamma \vdash \Pi\, x : T.T' : \Pi\, x : T.K} \quad \textsc{wftype\_pi\_t\_intro}$$

$$\frac{\begin{array}{l}\Sigma; \Gamma \vdash T : \Pi\, x : B.K\\ \Sigma; \Gamma \vdash t : T'\end{array}}{\Sigma; \Gamma \vdash T\, t : K[\cdot, t/x]} \quad \textsc{wftype\_pi\_t\_elim}$$

$\boxed{\Sigma; \Gamma \vdash t : T}$

$$\frac{\Sigma \vdash \Gamma, x : T \text{ ctx}}{\Sigma; \Gamma, x : T \vdash x : T} \quad \textsc{wfterm\_var\_z}$$

$$\frac{\begin{array}{c}\Sigma \vdash \Gamma, x : T \text{ ctx}\\ \Sigma; \Gamma \vdash x' : T'\end{array}}{\Sigma; \Gamma, x : T \vdash x' : T'} \quad \textsc{wfterm\_var\_s}$$

$$\frac{\begin{array}{c}\vdash \Sigma, c : T \text{ sig}\\ \Sigma, c : T \vdash \Gamma \text{ ctx}\end{array}}{\Sigma, c : T; \Gamma \vdash c : T} \quad \textsc{wfterm\_con\_z}$$

$$\frac{\begin{array}{c}\vdash \Sigma, c : T \text{ sig}\\ \Sigma; \Gamma \vdash c' : T'\end{array}}{\Sigma, c : T; \Gamma \vdash c' : T'} \quad \textsc{wfterm\_con\_s}$$

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Definition rules:        34 good    0 bad
Definition rule clauses: 85 good    0 bad
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