x

$M,\ N$	::=		
	|	x	
	|	$\mathbf{let}\ M\ \mathbf{be}\ x.N$	
	|	$\mathbf{true}$	
	|	$\mathbf{false}$	
	|	$\mathbf{if}\ M\ \mathbf{then}\ N\ \mathbf{else}\ N'$	
	|	$\mathbf{inl}\ M$	
	|	$\mathbf{inr}\ M$	
	|	$\mathbf{pm}\ M\ \mathbf{as}\ \{\ \mathbf{inl}\ x.N,\ \mathbf{inr}\ x'.N'\}$	bind x in N bind x' in N'
	|	$\lambda x.M$	
	|	$M`N$	
$A,\ B$	::=		
	|	$\mathbf{bool}$	
	|	$A + A'$	
	|	$A \to A'$	
Γ	::=		
	|	$\mathbf{empty}$	
	|	$\Gamma, x : A$	
	|	$\Gamma, x : A, \Gamma'$	
terminals	::=		
	|	λ	
	|	$\vdash$	
	|	$\to$	
formula	::=		
	|	*judgement*	
Jtype	::=		
	|	$\Gamma \vdash M : A$	
judgement	::=		
	|	*Jtype*	
user_syntax	::=		
	|	x	
	|	M	
	|	A	
	|	Γ	
	|	*terminals*	

$\boxed{\Gamma \vdash M : A}$

$$\frac{}{\Gamma, x : A, \Gamma' \vdash x : A}\ \text{T\_VAR}$$

$$\frac{\Gamma \vdash M : A \quad \Gamma, x : A \vdash N : B}{\Gamma \vdash \mathbf{let}\, M\, \mathbf{be}\, x.N : B}\ \text{T\_LET}$$

$$\frac{}{\Gamma \vdash \mathbf{true} : \mathbf{bool}}\ \text{T\_TRU}$$

$$\frac{}{\Gamma \vdash \mathbf{false} : \mathbf{bool}}\ \text{T\_FLS}$$

$$\frac{\Gamma \vdash M : \mathbf{bool} \quad \Gamma \vdash N : B \quad \Gamma \vdash N' : B}{\Gamma \vdash \mathbf{if}\, M\, \mathbf{then}\, N\, \mathbf{else}\, N' : B}\ \text{T\_ITE}$$

$$\frac{\Gamma \vdash M : A}{\Gamma \vdash \mathbf{inl}\, M : A + A'}\ \text{T\_INL}$$

$$\frac{\Gamma \vdash M : A'}{\Gamma \vdash \mathbf{inr}\, M : A + A'}\ \text{T\_INR}$$

$$\frac{\Gamma \vdash M : A + A' \quad \Gamma, x : A \vdash N : B \quad \Gamma, x' : A' \vdash N' : B}{\Gamma \vdash \mathbf{pm}\, M\, \mathbf{as}\, \{\, \mathbf{inl}\, x.N,\ \mathbf{inr}\, x'.N' \}\, : B}\ \text{T\_PM}$$

$$\frac{\Gamma, x : A \vdash M : B}{\Gamma \vdash \lambda x.M : A \to B}\ \text{T\_LAM}$$

$$\frac{\Gamma \vdash M : A \quad \Gamma \vdash N : A \to B}{\Gamma \vdash M\text{`}N : B}\ \text{T\_APP}$$

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Definition rules:         10 good    0 bad
Definition rule clauses: 23 good    0 bad
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