

var, x	term variable		
$tvar, X$	type variable		
$term, t$	$::=$		term
	x		variable
	$\lambda x . t$	bind x in t	abstraction
	$t_1 t_2$		application
	(t)	S	
	$\{ t_1 / x \} t_2$	M	
$value, v$	$::=$		value
	$\lambda x . t$	bind x in t	abstraction
$type, S, T$	$::=$		type
	X		variable
	$T \rightarrow T'$		function
	(T)	S	
env, E	$::=$		type environment
	empty		
	$env, x : T$		
$formula$	$::=$		
	<i>judgement</i>		
	$x : T \in env$		
	ok env		
$terminals$	$::=$		
	λ		
	\longrightarrow		
	\Longrightarrow		
	\rightarrow		
	\vdash		
	\in		
$Jtype$	$::=$		
	$E \vdash t : T$		
Jop	$::=$		
	$t_1 \longrightarrow t_2$	t_1 reduces to t_2	
$Jopf$	$::=$		
	$t_1 \Longrightarrow t_2$	t_1 full-reduces to t_2	
$judgement$	$::=$		
	<i>Jtype</i>		
	<i>Jop</i>		
	<i>Jopf</i>		
$user_syntax$	$::=$		

| *var*
 | *tvar*
 | *term*
 | *value*
 | *type*
 | *env*
 | *formula*
 | *terminals*

$E \vdash t : T$

$$\frac{\mathbf{ok} E}{x : T \in E} \text{ TYPING_VAR}$$

$$\frac{E \vdash t_1 : S \rightarrow T \quad E \vdash t_2 : S}{E \vdash t_1 t_2 : T} \text{ TYPING_APP}$$

$$\frac{E, x : S \vdash t : T}{E \vdash \lambda x. t : S \rightarrow T} \text{ TYPING_LAM}$$

$t_1 \longrightarrow t_2$ t_1 reduces to t_2

$$\frac{}{(\lambda x. t_1) v_2 \longrightarrow \{v_2/x\} t_1} \text{ AX_APP}$$

$$\frac{t_1 \longrightarrow t'_1}{t_1 t_2 \longrightarrow t'_1 t_2} \text{ CTX_APP_FUN}$$

$$\frac{t_2 \longrightarrow t'_2}{v_1 t_2 \longrightarrow v_1 t'_2} \text{ CTX_APP_ARG}$$

$t_1 \Longrightarrow t_2$ t_1 full-reduces to t_2

$$\frac{}{(\lambda x. t_1) t_2 \Longrightarrow \{t_2/x\} t_1} \text{ FULL_REDUCE_RED}$$

$$\frac{t_1 \Longrightarrow t'_1}{t_1 t_2 \Longrightarrow t'_1 t_2} \text{ FULL_REDUCE_APP1}$$

$$\frac{t_2 \Longrightarrow t'_2}{t_1 t_2 \Longrightarrow t_1 t'_2} \text{ FULL_REDUCE_APP2}$$

$$\frac{t_1 \Longrightarrow t'_1}{\lambda x. t_1 \Longrightarrow \lambda x. t'_1} \text{ FULL_REDUCE_ABS}$$

Definition rules: 10 good 0 bad
 Definition rule clauses: 20 good 0 bad