Presheaves on Purpose

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∅ 1 2 N

Set Type

$$Tm\ (n : \mathbb{N}) \ni app\ (Tm\ n)\ (Tm\ n)$$

$$|\ lam\ (Tm\ (1, n))$$
$$|\ var\ \left(x : \binom{n}{1}\right)$$

Sel'^q → Srt^q

+ve in n

$$(t : Tm\ n)\left(\theta : \binom{m}{n}\right) : Tm\ m$$
$$(app\ f\ s)\,\theta = app\ (f\theta)\,(s\theta)$$
$$(lam\ t)\,\theta = lam\ (t\,(\theta, 1))$$
$$(var\ x)\,\theta = var\ (x ; \theta)$$

$$Tm : Thin \triangleright Thin$$

$$Tm = \sum \{var, app, lam\}$$

$$var \mapsto K (Thin [1, -])$$

$$app \mapsto I \ refl \times I \ refl$$

$$lam \mapsto (1 \mbox{\#}) \ ; \ I \ refl$$

$$\frac{\vartheta : \binom{m}{n}}{\vartheta, 1 : \binom{m+1}{n+1}}$$

$$\frac{\vartheta : \binom{m}{n}}{\vartheta, 0 : \binom{m+1}{n}}$$

$$\varepsilon ; \varepsilon = \varepsilon$$

$$\vartheta ; (\phi, 0) = (\vartheta ; \phi), 0$$

$$(\vartheta, 0) ; (\phi, 1) = (\vartheta ; \phi), 0$$

$$(\vartheta, 1) ; (\phi, 1) = (\vartheta ; \phi), 1$$

$$C \triangleright D \Rightarrow I \; (q : C = D)$$

$$\mid K \; (F : D \to Ty)$$

$$\mid (F : C \triangleright D) \times (G : C \triangleright D)$$

$$\mid 1$$

$$\mid \Sigma \; (A : Set)(F : A \twoheadrightarrow C \triangleright D)$$

$$\mid (F : \underset{Functor}{D \to E}) \circ_q (G : C \triangleright E)$$

$$C[R, -] : C \to T_y$$
$$El\ X = C[R, X]$$
$$Fu\ f\ k = k;f$$