



**(Structural) Simply Typed Language**

$$\frac{(x : A) \in \Gamma}{\Gamma \vdash_{\Sigma, \Omega} x : A} \text{VAR}$$

$$\frac{\Gamma \vdash_{\Sigma, \Omega} t : A}{\Gamma \vdash_{\Sigma, \Omega} (t \circledast A) : A} \quad \text{ANNO}$$

$$\frac{\rho : \text{Sub}_\Sigma(\Xi, \emptyset) \quad \Gamma, \vec{x}_1 : \Delta_1 \langle \rho \rangle \vdash_{\Sigma, \Omega} t_1 : A_1 \langle \rho \rangle \quad \cdots \quad \Gamma, \vec{x}_n : \Delta_n \langle \rho \rangle \vdash_{\Sigma, \Omega} t_n : A_n \langle \rho \rangle}{\Gamma \vdash_{\Sigma, \Omega} \text{op}_o(\vec{x}_1 \cdot t_1; \dots; \vec{x}_n \cdot t_n) : A_0 \langle \rho \rangle} \text{OP}$$

for  $o : \Xi \triangleright [\Delta_1]A_1, \dots, [\Delta_n]A_n \rightarrow A_0$  in  $\Omega$

$$\Gamma \vdash_{\Sigma, \Omega} t :: A$$

**Binding Signature**

$$\text{abs} :: A, B \triangleright [A] B \rightarrow A \supset B$$



$$\frac{\Gamma, x : A \vdash t \Leftarrow B}{\Gamma \vdash \lambda x. t \Leftarrow A \supset B} \text{ABS} \Leftarrow$$

$$\frac{\rho : \text{Sub}_\Sigma(\Xi, \emptyset) \quad \Gamma, \vec{x}_1 : \Delta_1 \langle \rho \rangle \vdash_{\Sigma, \Omega} t_1 : A_1 \langle \rho \rangle \quad \cdots \quad \Gamma, \vec{x}_n : \Delta_n \langle \rho \rangle \vdash_{\Sigma, \Omega} t_n : A_n \langle \rho \rangle}{\Gamma \vdash_{\Sigma, \Omega} \text{op}_o(\vec{x}_1 \cdot t_1; \dots; \vec{x}_n \cdot t_n) : A_0 \langle \rho \rangle} \text{OP}$$

for  $o : \Xi \triangleright [\Delta_1]A_1, \dots, [\Delta_n]A_n \rightarrow A_0$  in  $\Omega$