

Example : Environment Monad

$$M_X : 1 \rightarrow [\text{Set}, \text{Set}]$$

$$\eta_A : A \rightarrow M_X A$$

$$M_X(A) = X \Rightarrow A$$

$$\mu_A : M_X M_X A \rightarrow M_X A$$

Example : Powerset Monoid

$$\mathcal{P}(X) : \mathbf{1} \rightarrow \mathbf{Set} \quad \emptyset : \mathbf{T} \rightarrow \mathcal{P}(X)$$

$$\cup : \mathcal{P}(X) \otimes \mathcal{P}(X) \rightarrow \mathcal{P}(X)$$