

Graded Monads

$$(E, \top, \otimes) \quad \eta : \text{Id} \rightarrow M_{\top}$$

$$M : E \rightarrow [\mathcal{C}, \mathcal{C}] \quad \mu_{e_1, e_2} : M_{e_1} \circ M_{e_2} \rightarrow M_{e_1 \otimes e_2}$$



Example : Environment Monad

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

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

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

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