

Definition (M -algebra morphism)

Let $\langle M, \mathbf{un}, \mathbf{mu} \rangle$ be a monad on a category \mathbf{C} , and let $\langle X_1, a_1 \rangle$ and $\langle X_2, a_2 \rangle$ be algebras of M . A morphism $\langle X_1, a_1 \rangle \rightarrow \langle X_2, a_2 \rangle$ of M -algebras is specified by:

Constituents

1. A morphism $f : X_1 \rightarrow X_2$ in \mathbf{C} .

Conditions

1. The diagram

$$\begin{array}{ccc} M(X_1) & \xrightarrow{Mf} & M(X_2) \\ a_1 \downarrow & & \downarrow a_2 \\ X_1 & \xrightarrow{f} & X_2 \end{array}$$

commutes.