

Definition (Identity functor). Given a category \mathbf{C} , we define it as $\text{Id}_{\mathbf{C}} : \mathbf{C} \rightarrow \mathbf{C}$, where

- ▷ Given $X \in \text{Ob}_{\mathbf{C}}$, one has $\text{Id}_{\mathbf{C}}(X) := X$;
- ▷ Given $f \in \text{Hom}_{\mathbf{C}}(X; Y)$, one has $\text{Id}_{\mathbf{C}}(f) := f$.