# Representable functors

# Definition

Let $\mathcal{C}$ be a category and **Set** the category of sets. For any object $C \in \mathrm{ob}\,(\mathcal{C})$, one has a functor

$$h_C : \mathcal{C}^{\mathrm{op}} \to \mathbf{Set}$$

sending $A$ to $\mathrm{Mor}(A, C)$.

A functor

$$F : \mathcal{C}^{\mathrm{op}} \to \mathbf{Set}$$

is called representable if

$$F \xrightarrow{\sim} h_C$$

for some $C$.

# Question

Sending $A$ to $\mathrm{Mor}(C, A)$, we get another functor. What are its source and target?