

**Definition** (Category). A *category*  $\mathbf{C}$  is a semicategory with an additional constituent and an additional rule:

### Constituents

1. Identity morphisms: for each object  $X$ , there is a morphism  $\text{Id}_X : X \rightarrow X$  called *the identity morphism of*  $X$ .

### Conditions

1. Unitality: It holds

$$\frac{f : X \rightarrow Y}{\text{Id}_X \circ f = f = f \circ \text{Id}_Y}$$