Visual Theory

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brick by brick

\[ \text{Part}_4 \in \mathcal{C}_{\text{Parts}} \]
Categories may not have objects as sets or arrows as functions. For example, in the category $C$ below, arrows are $2 \times 2$ matrices of numbers with arrow composition similar to matrix multiplication.

$f \in Ar(C) : A \to B$

$A, B \in Ob(C)$

$|A|, |B| = 2$

$A, B$ are any sets with cardinality 2

In addition to 8 books mentioned in Part 1 and Part 3, we also used the following references:

- From Categories to Homotopy Theory by Birgit Richter
- From a Geometrical Point of View: A Study of the History and Philosophy of Category Theory by Jean-Pierre Marquis
- Machine Learning Brick by Brick, Epoch 1 by Dmitry Vostokov (algebraic notation for matrix multiplication)