**Definition (Tup)**

There exists a category **Tup** that consists of the following constituents:

1. *Objects*: The objects of **Tup** are lists of sets.
2. *Morphisms*: The morphisms of **Tup** are maps between tuples. A morphism from $[a_1, \ldots, a_p]$ to $[b_1, \ldots, b_q]$ is a $q$-tuple of morphisms $[f_1, \ldots, f_q]$ where $f_i : a_1 \times \cdots \times a_n \to b_i$.
3. *Identity morphism*: The identity morphism are the products in sets.
4. *Composition operation*: Composition is given by function composition in the obvious way.