

PRODUKT IN KOPRODUKT

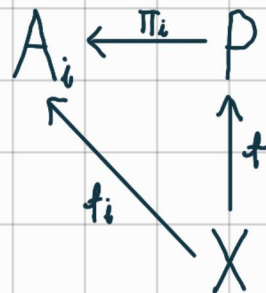
\mathcal{C} kategorija

I indeksna množica

$(A_i)_{i \in I}$ družina objektov

Produkt je objekt P skupaj z morfizmi $\pi_i: P \rightarrow A_i$:

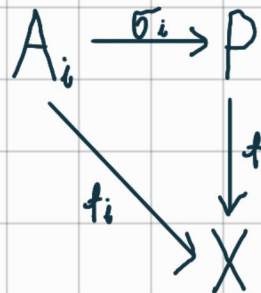
$\forall X \in \mathcal{C}: \exists f: X \rightarrow P: \forall f_i: X \rightarrow A_i:$



komutira

Koprodukt je objekt P skupaj z morfizmi $\tilde{\sigma}_i: A_i \rightarrow P$:

$\forall X \in \mathcal{C}: \exists f: P \rightarrow X: \forall f_i: A_i \rightarrow X:$



komutira

Vec_k:

Koprodukt:

$$P = A_1 \oplus A_2$$

$$\sigma_1: A_1 \rightarrow P \\ v \mapsto (v, 0)$$

$$\sigma_2: A_2 \rightarrow P \\ u \mapsto (0, u)$$

$$f_1: A_1 \rightarrow X$$

$$f_2: A_2 \rightarrow X$$

$$f: A_1 \oplus A_2 \rightarrow X \\ (v, u) \mapsto f_1(v) + f_2(u)$$

Produkt:

$$P = A_1 \otimes A_2$$

$$\pi_1: P \rightarrow A_1 \\ (u, v) \mapsto u$$

$$\pi_2: P \rightarrow A_2 \\ (u, v) \mapsto v$$

$$f_1: X \rightarrow A_1$$

$$f_2: X \rightarrow A_2$$

$$f: X \rightarrow A_1 \otimes A_2 \\ x \mapsto (f_1(x), f_2(x))$$