Малко теория. Релационна алгебра

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Релационен модел на данните

Какво е релация?

- Задава "отношения" между елементите на две множества

$\mathcal{D}_1 = \{cat, dog, crab\}$
$\mathcal{N} = \{0, 1, 2, ...\}$

$legs = \{(cat, 2), (dog, 2), (crab, 8)\} \subseteq \mathcal{D}_1 \times \mathcal{N}$

$eyes = \{(cat, 2), (dog, 2), (crab, 2)\} \subseteq \mathcal{D}_1 \times \mathcal{N}$

$eyesANDlegs = \{(cat, 2, 2), (dog, 2, 2), (crab, 2, 8)\} \subseteq \mathcal{D}_1 \times \mathcal{N} \times \mathcal{N}$

Коя е тази релация?
$\{(x, y) | x \in \mathcal{N}, y \in \mathcal{N}, \exists z \in \mathcal{N} - \{0\} : y = x + z\} \subseteq \mathcal{N} \times \mathcal{N}$

$\leq \subseteq \mathcal{N} \times \mathcal{N}$

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- "Човешки четимо" задаване на релация
- Атрибути на елемент

$$eyesANDlegs = (animal : \mathcal{D}_1, eyes : \mathcal{N}, legs : \mathcal{N})$$

animal	eyes	legs
cat	2	2
dog	2	2
crab	2	8

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Някои операции в релационната алгебра

Селекция

animal	eyes	legs
cat	2	2
dog	2	2
crab	2	8

$$\sigma_p(r) = \{t | t \in r, p(r)\}$$

$$twolegs(r) : legs = 2$$
$$\sigma_{twolegs}(eyesANDlegs) = \{t | t \in eyesANDlegs, twolegs(r)\}$$

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