

SE433:

DB-Query:

$$F^1(x) \equiv \neg \text{married}(x, \text{john}) \wedge \neg (x = \text{john}) \\ \wedge \text{Person}(x)$$

Consider that DB contains only relation  $\text{married}(x, y)$ :

$$F^2(x) \equiv \exists y (\text{married}(y, x) \vee \text{married}(x, y)) \wedge \neg \text{married}(\text{john}, x) \wedge \neg (x = \text{john})$$

"active domain of the DB"

SE 441:

FOL:  $\mathcal{Y} = (S, \mathcal{D})$

Rel Gic:  $\mathcal{Y} \stackrel{\equiv}{=}_{DB} (S, \text{ADOM}(DB) \cup \{\text{all instances of built-in datatypes}\})$

↑  
contents of the tables

SE 443:     7)  $\exists x_1, x_2 : \underbrace{R(a, x_1)}_{\pi = \{x_1\}} \wedge \underbrace{\neg P(x_2)}_{\substack{\pi = \{x_2\} \\ \pi = \emptyset}}$

SE 444:

1)  $F(x, y, z) \equiv \underbrace{p(x, y)}_{\pi = \{x, y\}} \wedge \underbrace{(q(y) \vee r(z))}_{\substack{\pi = \{y\} \\ \pi = \{z\}}}$

answers

Prop:

p
<u>1</u>   <u>2</u>
<u>2</u>   <u>3</u>

q	r
2	4
5	5

- $\{x/2, y/3, z/4\}$
- $\{x/2, y/3, z/5\}$

$\{x/1, y/2, z/?\}$

$\rightarrow$  all  $z \in \{4, 5\}$

$q(2) \rightarrow$  answer:  $q(3)?$  no

$r(z)? \rightarrow 2/4, 2/5$

• 2) - 5) exercise

