

Phase 11 . 8 : Relational Image

The relational image $(R\langle S \rangle)$ gives the image of set S under relation R.

Example 1 : Simple relational image

$$(R\langle S \rangle)$$

Example 2 : Relational image with set literal

$$(R\langle \{1, 2, 3\} \rangle)$$

Example 3 : Relational image with singleton set

$$(parentOf\langle \{john\} \rangle)$$

Example 4 : Relational image with composition

$$((R \circ S)\langle A \rangle)$$

Example 5 : Relational image with inverse

$$(R^{\sim}\langle S \rangle)$$

Example 6 : Set comprehension with relational image (Solution 35 pattern)

$$\{ p : Person \mid p \in \text{dom } parentOf \bullet (p, (parentOf\langle \{p\} \rangle)) \}$$

Example 7 : Chained relational images

$$((R\langle S \rangle)\langle T \rangle)$$