

Phase 11 . 8 : Relational Image

The relational image $R(\text{--- } S \text{ ---})$ gives the image of set S under relation R .

Example 1 : Simple relational image

$$R(\llbracket S \rrbracket)$$

Example 2 : Relational image with set literal

$$R(\llbracket \{1, 2, 3\} \rrbracket)$$

Example 3 : Relational image with singleton set

$$\text{parentOf}(\llbracket \{john\} \rrbracket)$$

Example 4 : Relational image with composition

$$R \circ S(\llbracket A \rrbracket)$$

Example 5 : Relational image with inverse

$$R^{-1}(\llbracket S \rrbracket)$$

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

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

Example 7 : Chained relational images

$$R(\llbracket S \rrbracket)(\llbracket T \rrbracket)$$