

Phase 10 a : Relation Operators

Example 1 : Relation Type

$$R \leftrightarrow S$$

Example 2 : Maplet Constructor

$$\begin{aligned}x &\mapsto y \\1 &\mapsto 2\end{aligned}$$

Example 3 : Domain Restriction

$$S \lhd R$$

Example 4 : Range Restriction

$$R \triangleright T$$

Example 5 : Relational Composition

$$\begin{aligned}R ; S \\R ; S\end{aligned}$$

Example 6 : Relation Functions

$$\text{dom } R$$

$$\text{ran } R$$

Example 7 : Complex Expressions

$$\begin{aligned}\text{dom}(S \lhd R) \\ \text{ran}(R \triangleright T) \\ A \lhd R ; R \triangleright B\end{aligned}$$

Example 8 : Chained Relations

$$\begin{aligned}R ; S ; T \\ A \lhd R \triangleright B\end{aligned}$$

Example 9 : Relations with Set Operations

$$\begin{aligned}(x \mapsto y) \in R \\ \text{dom } R \subseteq S \\ \text{ran } R \cup \text{ran } S\end{aligned}$$