

## Phase 10 a : Relation Operators

### Example 1 : Relation Type

$$R \leftrightarrow S$$

### Example 2 : Maplet Constructor

$$x \mapsto y$$

$$1 \mapsto 2$$

### Example 3 : Domain Restriction

$$S \triangleleft R$$

### Example 4 : Range Restriction

$$R \triangleright T$$

### Example 5 : Relational Composition

$$R \circ S$$

$$R \circ S$$

### Example 6 : Relation Functions

$$\text{dom } R$$

$$\text{ran } R$$

### Example 7 : Complex Expressions

$$\text{dom}(S \triangleleft R)$$

$$\text{ran}(R \triangleright T)$$

$$A \triangleleft R \circ R \triangleright B$$

### Example 8 : Chained Relations

$$R \circ S \circ T$$

$$A \triangleleft R \triangleright B$$

### Example 9 : Relations with Set Operations

$$(x \mapsto y) \in R$$

$$\text{dom } R \subseteq S$$

$$\text{ran } R \cup \text{ran } S$$