Specifying criteria for querying model

Specifying criteria is necessary to

- Associate row and column elements in a dependency matrix.
- Display relations between elements in a relation map.
- Gather the contents of a smart package.
- Calculate/gather the value of a derived property.

A structured expression can also be the body of the executable opaque behavior, metric definition or validation rule, when the StructuredExpression language is selected for specifying that body.

Use one of the following operation types to specify the criterion:

- Using Simple Navigation
- Using Metachain Navigation (indirect relations through chains of properties)
- Find
- Filter
- Union
- Exclude
- Using Implied Relations
- Type Test
- Property Test
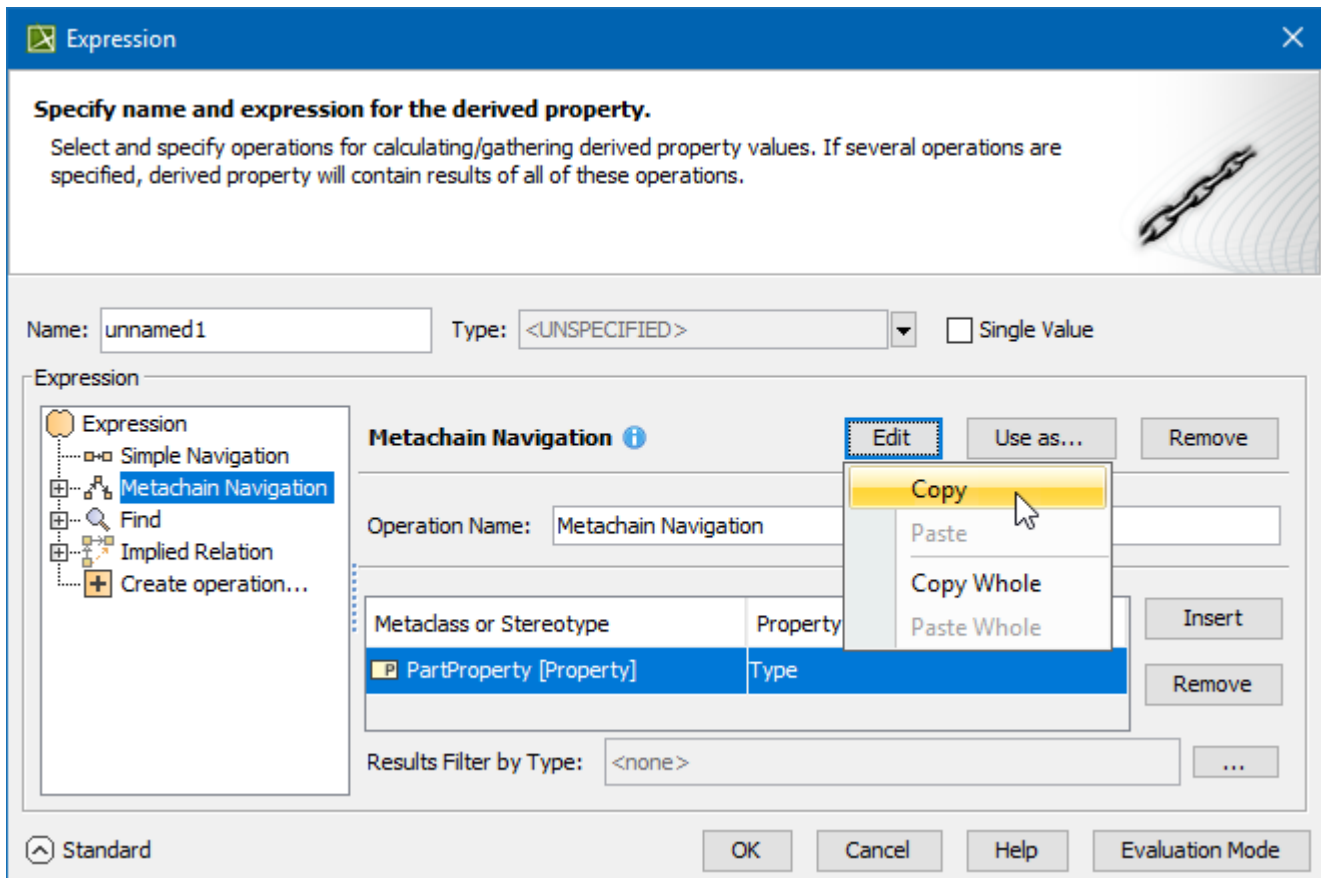- Operations from the model
- Various scripts

You can also use custom operation types. In addition, a criterion can be an expression combining several operations by passing the results of one operation call to another operation.

If multiple criteria (operations) are specified, the result will be calculated according to all these criteria (operations).

You can copy and paste the selected structured expressions in the **Expression** dialog. Select all or part of the structured expression in one dialog and paste it into the same or another dialog.

You can also copy the structured expression:

- from one smart package and paste it into another;
- from the matrices and paste them into the relation maps and vice versa;
- and use it in the smart package.

Concepts

Read the following description to better understand the material.

Concept	Description
Contextual element	The element that begins the calculation of the result according to the specified criteria. In a dependency matrix, the context is a row or column element. In a relation map, this is every node of the structure. In a table, the context is the table scope value. A smart package is the context itself. The context of a derived property is the target of the customization element that owns this derived property.

- Getting started with specifying criteria
- Using Simple Navigation
- Using Metachain Navigation
- Using Find operation
- Using Implied Relations
- Using Property Test operation
- Creating new operations
  - Calling operations from the model
    - Built-in operations
    - Creating executable opaque behaviors
  - Creating script operations
    - Specifying parameters
    - Writing scripts
- Expression Evaluation
- Case Studies for Querying the Model
  - Case 1. Coloring Ports by Type using Contains operation
  - Case 2. Finding Element Usages as Types
  - Case 3. Requirements from the Owning Package of a Smart Package
  - Case 4. Properties that Satisfy System Requirements
  - Case 5. Validating Elements Not Used in Diagram
  - Case 6. Requirements Without Text
  - Case 7. Sum of Default Values of Recursively Collected Properties Redefined by Specific Property
    - Case 7.1. Sum of Default Values of Property
    - Case 7.2. Filter Properties Redefined by Specific Property
    - Case 7.3. Recursive Structure Decomposition
  - Case 8. Showing Parameter Direction and Type in Single Table Cell using StringConcat
  - Case 9. Requirements Derivation and Satisfaction using Table Hierarchy
  - Case 10. Filtering Diagrams by Modification Date
  - Case 11. Server Project Version in Diagram
  - Case 12. Activity Decomposition Table
  - Case 13. Coloring Associations between Block and Use Case
    - Case 13.1. First End Of Association
    - Case 13.2. Second End Of Association
  - Case 14. Incoming Association of Class
  - Case 15. Requirements Coverage by Design Elements
    - Case 15.1. All Leaf Requirements Owned Recursively
  - Case 16. Using the Opposite Reference to find element usages as Tag Values