SCORTO STRATEGY MAVEN USER MANUAL

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1 INTRODUCTION

This manual provides detailed instructions on how to use the Scorto Strategy Maven application and contains the following chapters:

Chapter 2, *Application Overview*, contains general information on how to use Scorto Strategy Maven.

Chapter 3, *Basic Entities* , contains reference information on basic entities used in Scorto Strategy Maven.

Chapter 4, Working With Strategies, contains information on how to work with strategies in Scorto Strategy Maven.

Chapter 5, Functions in Use (Reference), contains reference information on functions used in Scorto Strategy Maven.

Audience

This manual is intended for those using Scorto Strategy Maven.

Manual Conventions

This manual uses the following conventions:

- Dialog boxes and windows are displayed in italics, for example, "*Packages Installer* window".
- Buttons, tabs, check boxes, and other dialog box elements are displayed in bold, for example, "click **Next**" or "enter **Destination**".
- Cross-references are displayed in italics, for example, "see *Chapter 2, Before you begin*".
- Notes contain additional information related to the previous topic and are displayed in italics.

2 APPLICATION OVERVIEW

This chapter contains general information on how to use Scorto Strategy Maven.

Overview

This chapter comprises the following sections:

Purpose of the Application, page *3*, explains what Scorto Strategy Maven is intended for.

Server Connection Setup, page *3*, described the procedure for setting up a connection to the server.

Logging on to the System, page *10*, explains how to log on to the system.

Setting up the Workspace, page *14*, describes the basic principles of working in the Scorto Strategy Maven workplace.

Purpose of the Application

Scorto Strategy Maven is used to automate a credit policy. The strategy defines the sequence, in which an application is processed. This application is the work place for risk managers or credit analysts and allows defining what actions should be taken on the application (both automated processes, for example, scoring, and non-automated processes, in which human involvement is required).

The application can work while connected to the server and autonomously, without connecting to the server.

Server Connection Setup

Prior to using the application in the server-connected mode, a connection to the server must be set up.

The Scorto Strategy Maven application allows the user to perform the following operations to set up a server connection:

- Adding a new connection profile;
- Editing an existing connection profile;
- Deleting an existing connection profile.

Adding a new connection profile

The Scorto Strategy Maven application allows adding a new server connection profile.

To delete an existing server connection profile:

1. Find the shortcut to the Scorto Strategy Maven application and start the application by double-clicking the shortcut.

The *Available connections* dialog box is displayed:

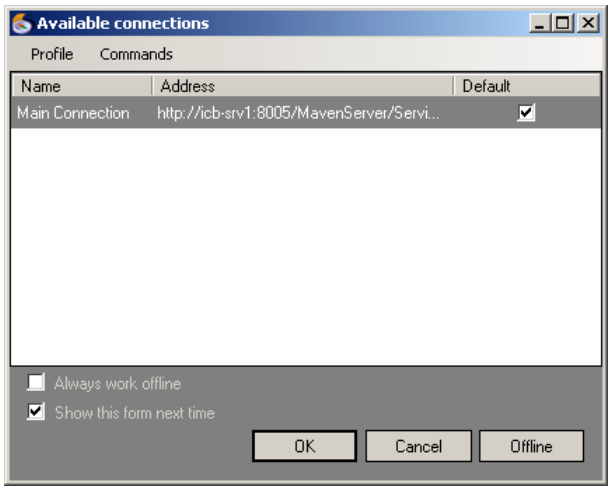


Figure 2-1: *Available connections* dialog box

2. Click **Add**.

The *Connection Profile* dialog box is displayed:

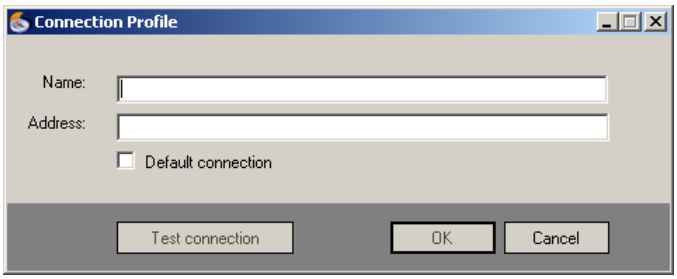


Figure 2-2: *Connection Profile* dialog box

3. In the **Address** box, enter the address of the server the application is to connect to.
4. Click **Test connection**.

If the connection cannot be established to the specified address, the following error message is displayed:

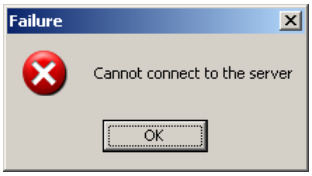


Figure 2-3: Server connection test error message

When the above error message is displayed, click **OK** and check that the address of the server is correctly specified; after correcting the address, repeat the server connection test procedure.

If the connection is established successfully, it is displayed in the *Available connections* dialog box:

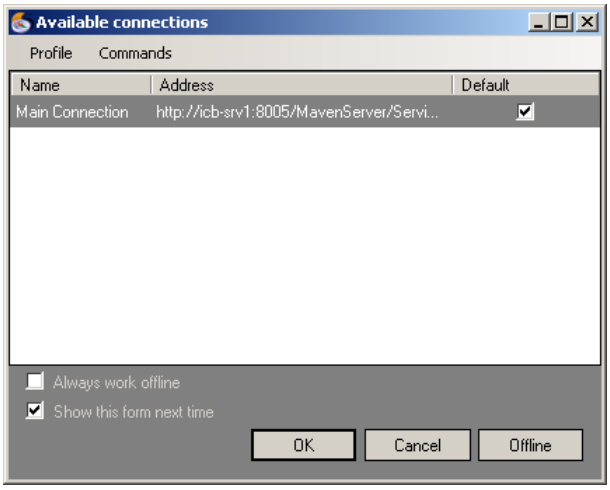


Figure 2-4: *Available connections* dialog box

Note: *To use the created connection by default, select the checkbox on the right of the connection, in the* ***By default*** *column or select the created connection and click the* ***by default*** *button in the main menu of the* Available connections *dialog box.*

Editing an existing connection profile

The Scorto Strategy Maven application allows editing an existing server connection profile.

To edit an existing connection profile:

1. Find the shortcut to the Scorto Strategy Maven application and start the application by double-clicking the shortcut.

The *Available connections* dialog box is displayed:

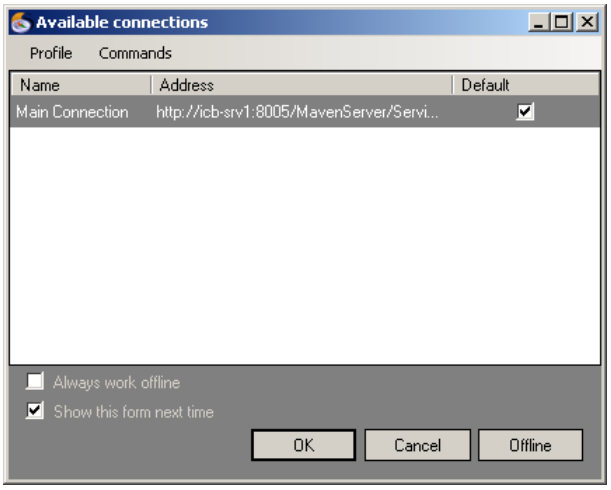


Figure 2-5: *Available connections* dialog box

2. Select the required connection.
3. From the main menu, select **Edit**.

The *Connection Profile* dialog box with the **Address** field already filled-in is displayed:

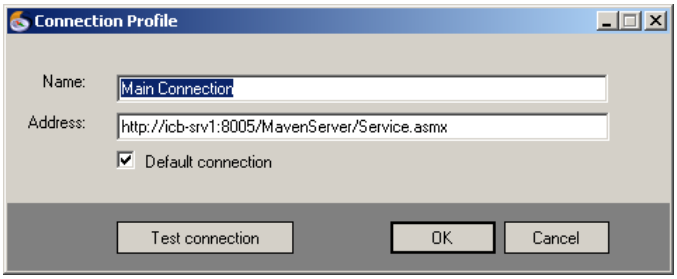


Figure 2-6: *Connection Profile* dialog box

4. Enter the appropriate changes.
5. Click **Test connection**.

If the connection cannot be established to the specified address, the following error message is displayed:

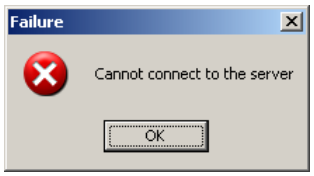


Figure 2-7: Server connection test error message

When the above error message is displayed, click **OK** and check that the address of the server is correctly specified; after correcting the address, repeat the server connection test procedure.

If the connection is established successfully, it is displayed in the *Available connections* dialog box:

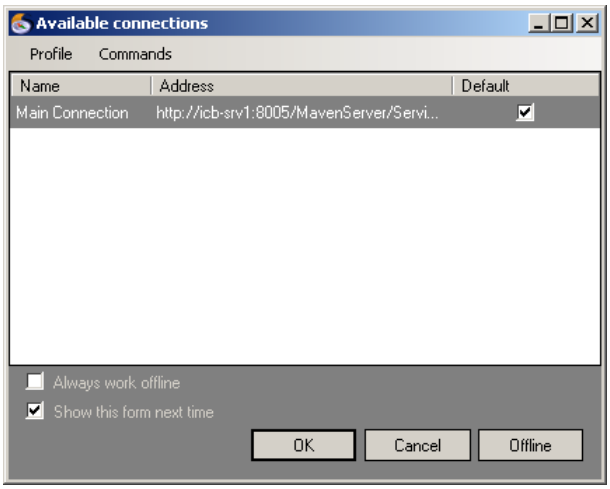


Figure 2-8: *Available connections* dialog box

Deleting an existing connection profile

The Scorto Strategy Maven application allows deleting an existing server connection profile.

To delete an existing server connection profile:

1. Find the shortcut to the Scorto Strategy Maven application and start the application by double-clicking the shortcut.

The *Available connections* dialog box is displayed:

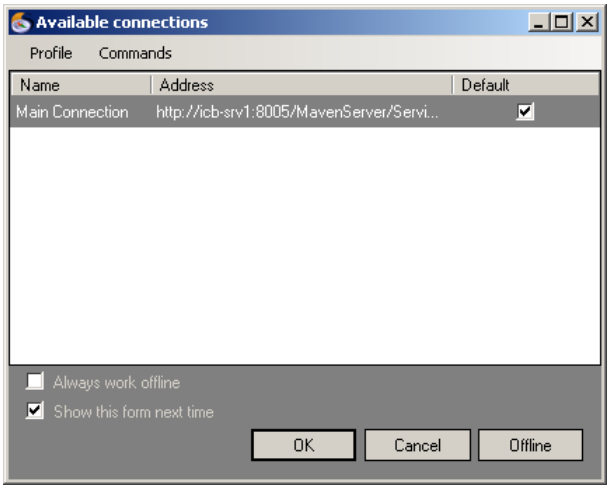


Figure 2-9: *Available connections* dialog box

2. Select the required connection.
3. From the main menu, select **Remove**.

The selected profile is successfully deleted:

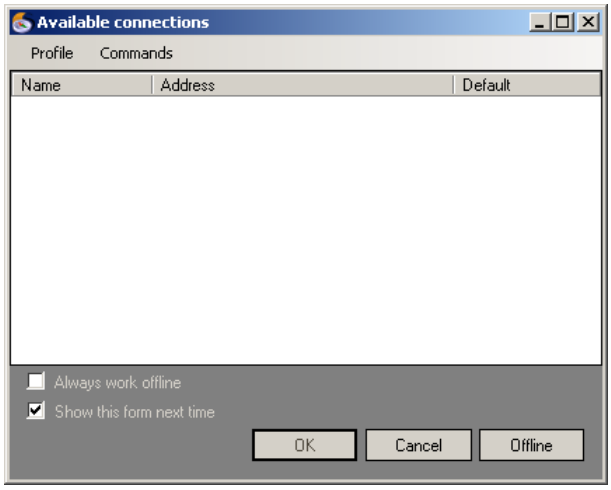


Figure 2-10: Selected profile is deleted

Logging on to the System

To be able to use the Scorto Strategy Maven application, the user must have the appropriate account registered in the database and have the right to use this application.

When working in the server connection mode, it is impossible to use the same account to log on to the system from more than one workstation.

User sessions have no time-out limits.

If required, the system administrator can forcibly close a user session. To go on working with the application, the user must re-log on to the system.

To log on to the system:

1. Find the shortcut to the Scorto Strategy Maven application and start the application by double-clicking the shortcut.

The *Available connections* dialog box is displayed:

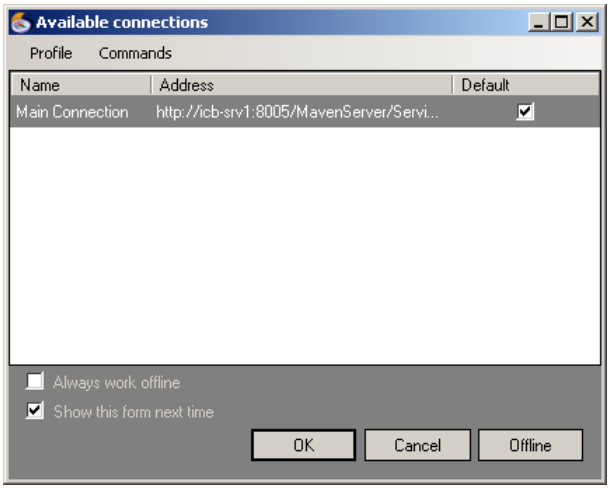


Figure 2-11: *Available connections* dialog box

2. In the **Address** column, select the address of the server to connect to and click **Ok**.

Note: *1) To work without connecting to the server, click* ***Offline****.*

2) To get additional information on how to set up a server connection, see Server Connection Setup*, p.* 3.

The welcome screen of the system is displayed:

Figure 2-12: System's welcome screen

If the server connection mode is selected, the *Login* dialog box is displayed:

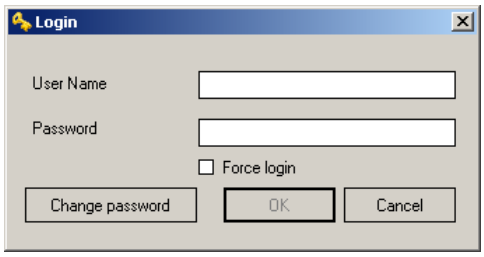


Figure 2-13: *Login* dialog box

3. In the **User Name** box, enter the username. This step is absent when the offline mode has been selected.
4. In the **Password** box, enter the password. This step is absent when the offline mode has been selected.

Note: *The "Force Login" function is intended to allow the user who has already logged on to the system, to log on to the system from another workstation. The initial connection is closed and a new connection is established for another workstation.*

*To perform a force login, check the **Force login** check-box.*

5. Click **OK**. This step is absent when the offline mode has been selected.

The Scorto Strategy Maven application is started:

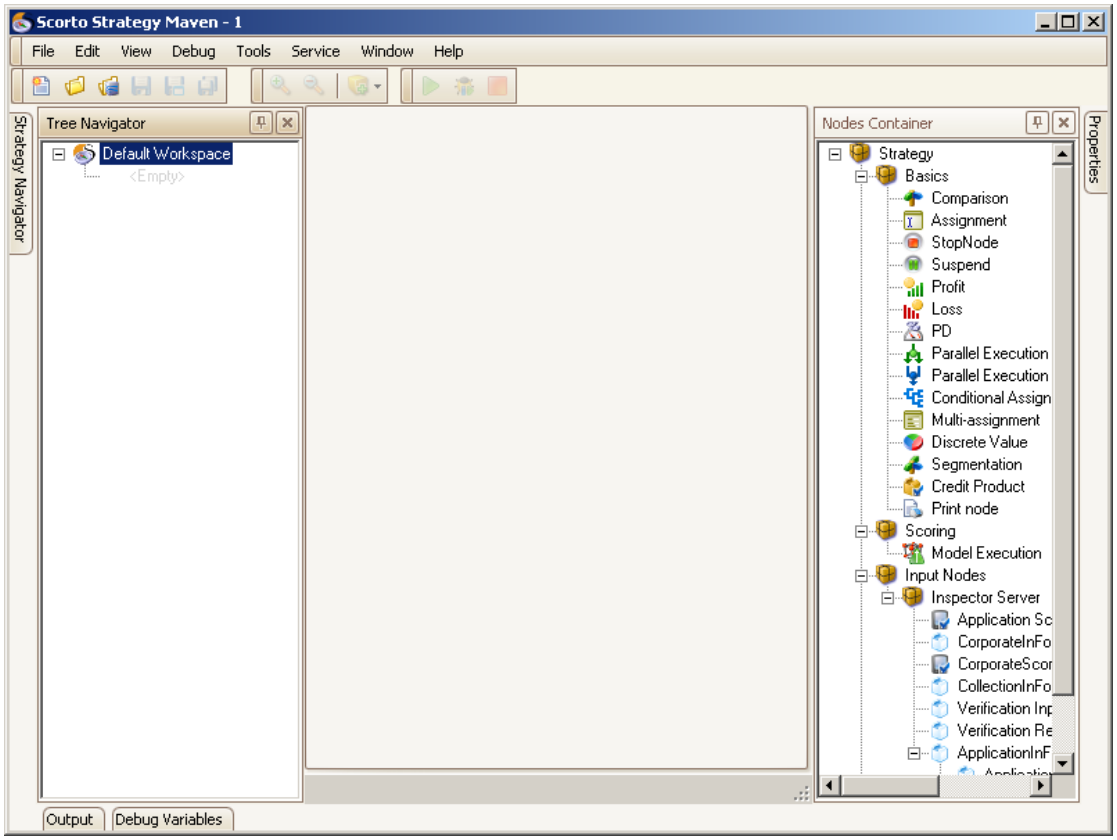


Figure 2-14: Scorto Strategy Maven application (server connection mode)

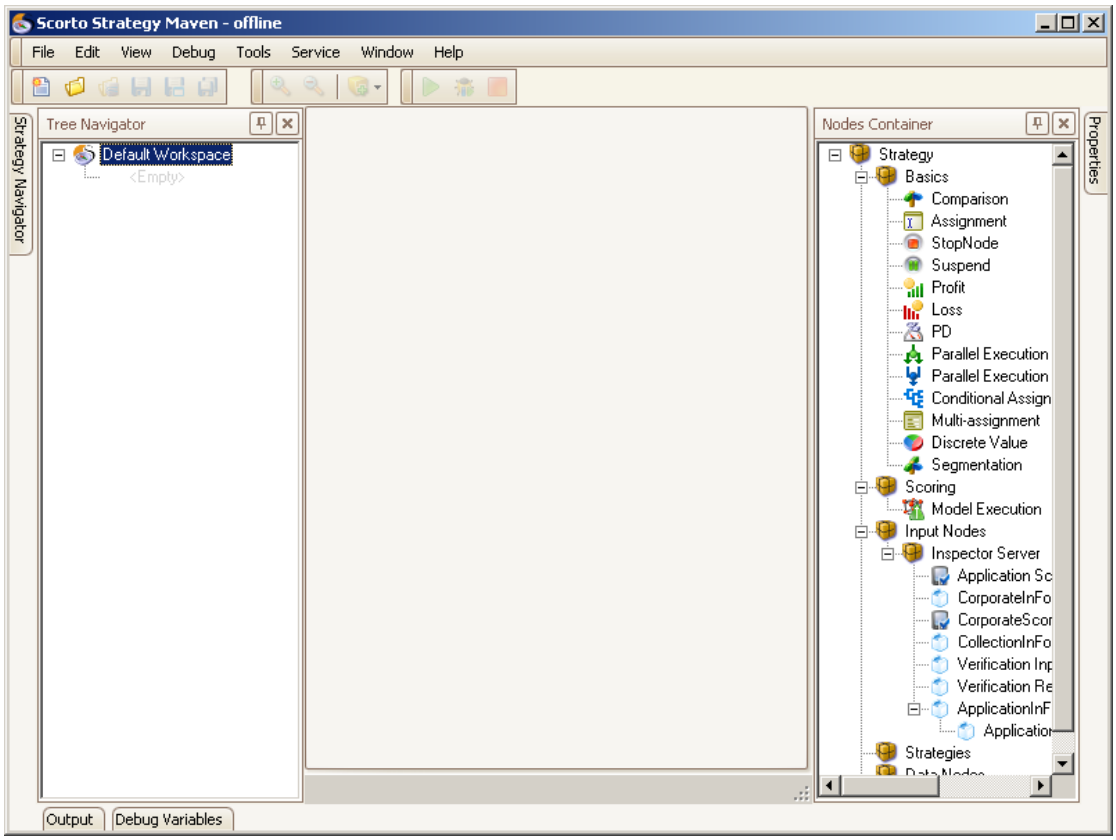


Figure 2-15: Scorto Strategy Maven application (offline mode)

Logging on to the System is successfully performed.

Setting up the Workspace

This section contains reference information on the areas of the Scorto Strategy Maven application workspace as well as information on how to set up their visual presentations.

General Information

By default, the Scorto Strategy Maven application workspace (Figure 2-14) comprises the following areas:

- **Strategy Navigator** — allows the user to quickly navigate the strategy.

- **Tree Navigator** — allows the user to:
    - see at any time the list of strategy that are open for editing or viewing;
    - view the list of node for each strategy by click the "plus" sign near any strategy;
    - navigate between nodes and strategies using the mouse pointer;
    - open the list of actions available for any element by right-clicking.
- **Visual editor** — the main work area of the application that allows the user to:
    - move nodes using the drag-and-drop mechanism;
    - link nodes between each other using the right-click or the node properties menu;
    - view and edit the properties of the node using the contextual menu;
    - zoom in or out using the mouse wheel;
- **Nodes Container** — contains the list of the nodes that can be used in the strategy, including the nodes that can be used to embed the strategy. The area allows the user to:
    - view the list of nodes, including the versions of the nodes, that can be used;
    - move any node from the list into the main work area using the drag-and-drop mechanism.
- **Properties** — This area allows the user to:
    - view the list of the parameters for the selected element;
    - edit the values of the parameters.

- **Output** — This area is intended to display reference information, for example, messages related to errors that have been discovered in the strategy.
- **Debug Variables** — This area allows the user to monitor changes in the values of variables when the application simulates the strategy execution.

Setting up Visual Presentations

The Scorto Strategy Maven application allows the user to change the way the work areas are visually presented as well as to change the size and location of the work areas.

Note: *The functionality described in the present section is not applicable to the Visual Editor area.*

Display modes

All the work areas of the Scorto Strategy Maven application have the following display modes:

- **Default** — the default display mode for workspace areas (Figure 2-14);
- **Side panel** — the selected area of the workspace is displayed as a side panel (Figure 2-16);
- **Turned off** — the work area is not displayed.

Selecting Display Modes

To select the Side Panel display mode:

1. To select the Side Panel display mode, in the heading of the selected workspace area click the button.

The selected workspace area is displayed as a side panel tab:

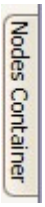


Figure 2-16: Side Panel display mode

2. To display the selected area, hover the mouse point over the tab with the area name.
3. To disable the Side Panel display mode, in the heading of the selected workspace area click the button.

To enable/disable the Turned off display mode:

1. To stop the selected area from being displayed, in the heading of the workspace area click the button.
2. To resume displaying the selected area, in the **View** menu select the checkbox at the name of the workspace area that must be displayed.

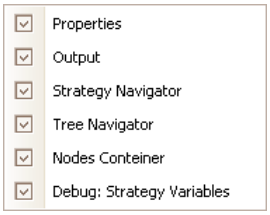


Figure 2-17: View menu

Working With Several Strategies

While working with more than one strategy, the Scorto Strategy Maven application allows the user to quickly move from one strategy to another using tabs in the visual editor (Figure 2-18) or the **Strategies** command on the **Window** menu (Figure 2-19).

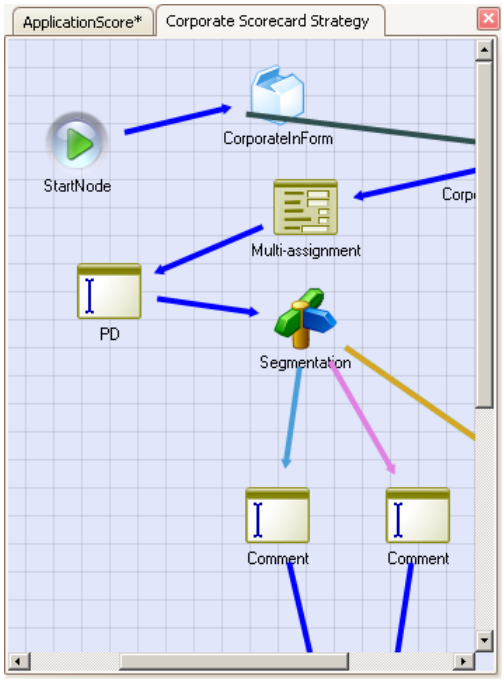


Figure 2-18: Tabs in the visual editor

Figure 2-19: Command *Strategies* in the *Window* menu

3 BASIC ENTITIES

This chapter contains reference information on the following basic entities in the Scorto Strategy Maven application:

- Variables;
- Nodes;
- Strategies.

Overview

This chapter comprises the following sections:

Variables, page *19*, contains information on the variables in use and main operations with variables.

Value constraints, page *23*, contains information on the variable constraints in use and main operations with variable constraints.

Nodes, page *34*, describes the nodes that are used in the application.

Strategies, page *75*, describes the strategies in use and their properties.

Variables

The Scorto Strategy Maven application uses the variables of the following three types:

- **String**
- **Numeric**
- **Date**

String and numeric variables can have a range of acceptable values.

The user can perform the following actions on variables:

- create a new variable and define its properties;

- edit an existing variable;
- delete a variable.

Creating a new variable

To create a new variable:

1. In the **Tree navigator** select the required strategy.
2. In the **Properties** work area at **Variables,** click [...].

The *Strategy variables* dialog box is displayed:

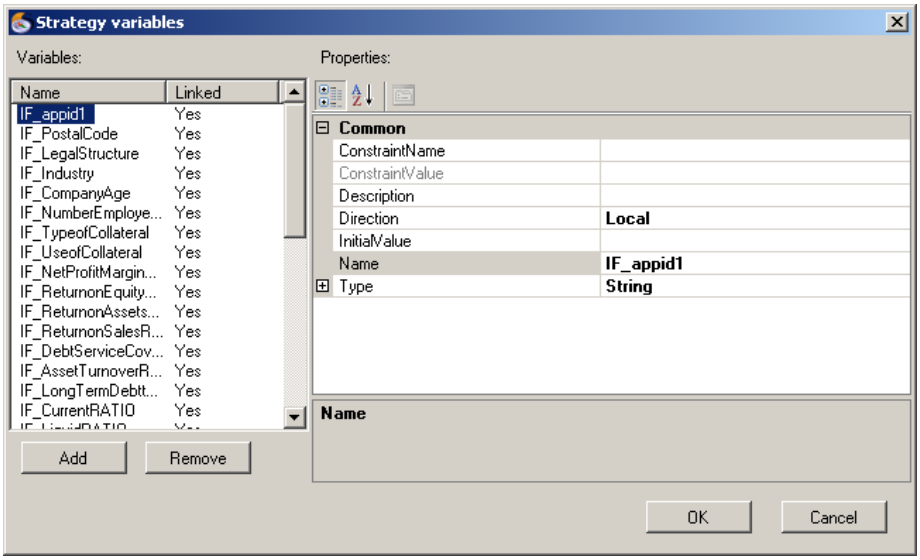


Figure 3-1: Strategy Variables *dialog box*

3. Click **Add**.

A new variable is displayed in the *Strategy Variables* dialog box:

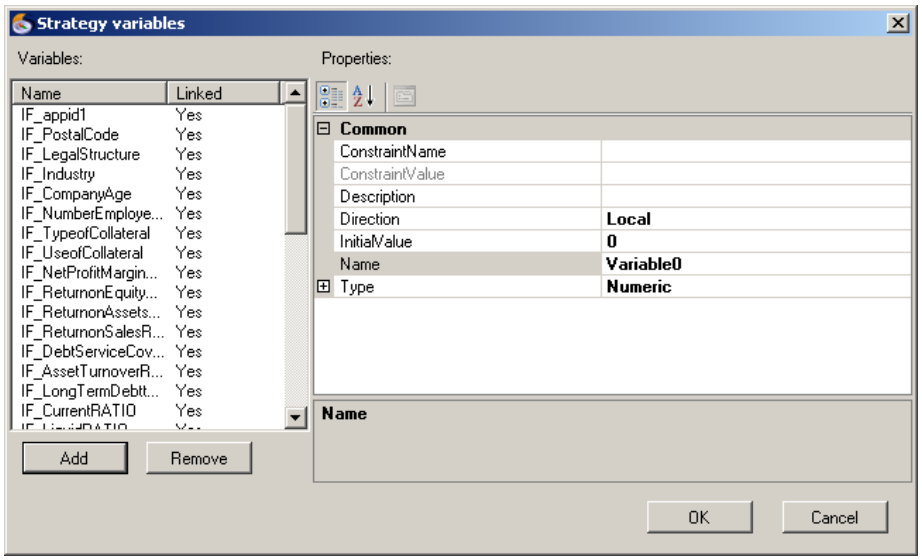


Figure 3-2: New variable

4. Enter the properties of the new variable according to the table below.

Property Name	Accepted Values	Description
ConstraintName	Text	This is the name of an accepted value of the variable. This property is filled in when selecting a constraint for the variable accepted value.
ConstraintValue	Integer for numeric variables; Text for string variables.	An accepted value for the variable. To get more information on constraints on accepted values of the variable, see *Value constraints*, page *23*.
Description	Free text	Variable description.
InitialValue	Integer for numeric variables; Text for string variables;	The initial value for the variable.

Property Name	Accepted Values	Description
	Date and time for Date variables.	
Name	Free text	The name of the variable in the strategy.
Parameter	Local Input Output InputOutput	Allows defining whether the variable is a local variable or it can be used as an input / output / input-output parameter if this strategy is embedded in another strategy.
Type	String Numeric Date	Variable type.

5. Click **OK**.

The new variable is successfully created.

Changing Properties of the Variable

To change the properties of a variable:

1. In the **Tree navigator** select the required strategy.
2. In the **Properties** work area at **Variables,** click [...].

The *Strategy variables* dialog box is displayed:

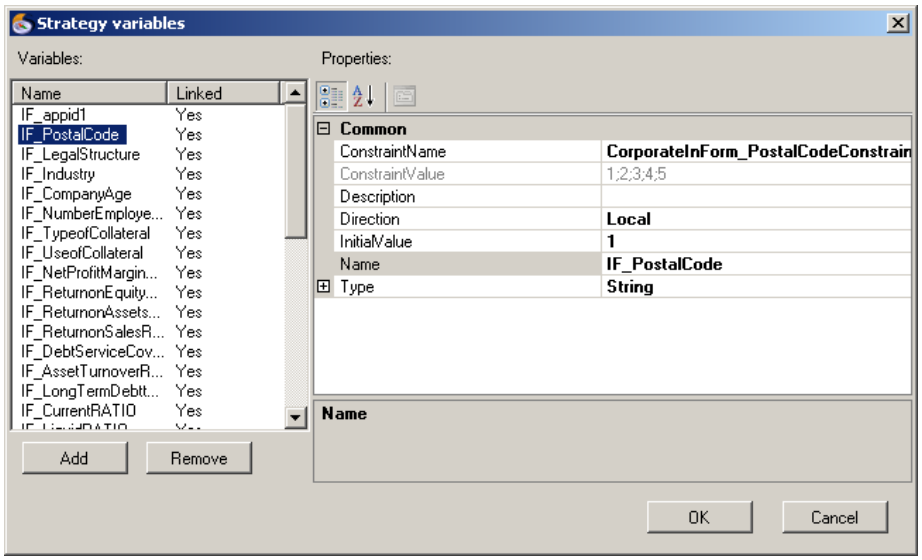


Figure 3-3: Strategy Variables *dialog box*

3. Change the variable properties as required.
4. Click **OK**.

Deleting a Variable

To delete a variable:

1. In the **Tree navigator** select the required strategy.
2. In the **Properties** work area at **Variables,** click [...].
3. In the **Variables** area of the *Strategy Variables* dialog box (Figure 3-3), select the variable that must be deleted.
4. Click **Remove**.
5. Click **OK** to close the dialog box.

Value constraints

Value constraints allow defining accepted values for variables in the strategy. The application enables the user to perform the following actions:

- create new constraints on the values of strategy variables;
- edit existing constrains on the values of strategy variables;
- delete existing constrains on the values of strategy variables.

Creating a New Constraint on Values

To create a new constraint on values:

1. In the **Tree navigator** select the required strategy.
2. In the **Properties** work area at **Strategy constraints,** click [...].

The *Strategy constraints* dialog box is displayed:

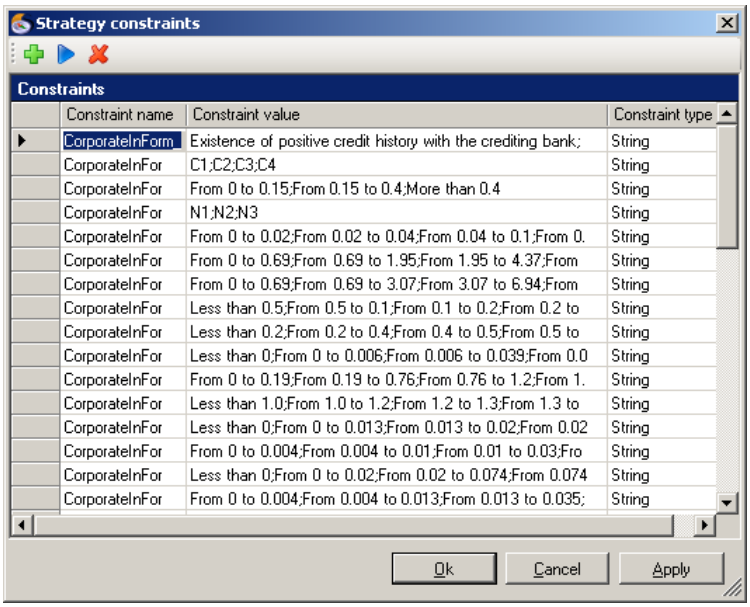


Figure 3-4: *Strategy Constraints* dialog box

3. On the toolbar, click .

The *Constraint* dialog box is displayed:

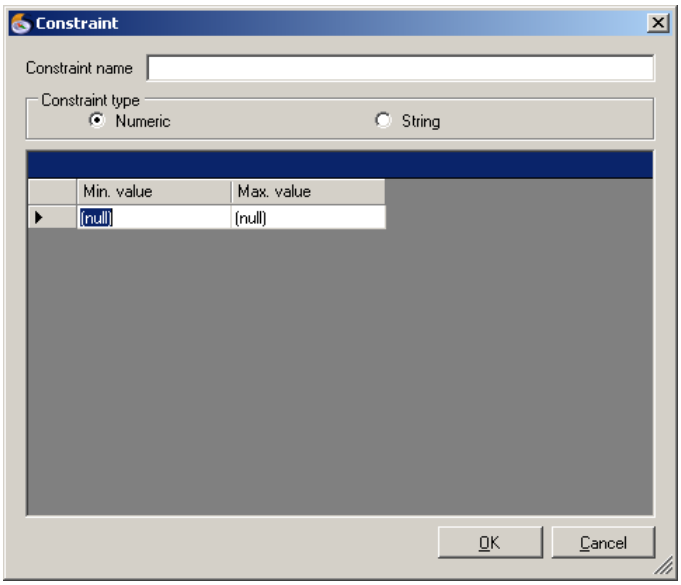


Figure 3-5: *Constraint* dialog box

4. In the **Constraint Name** box, enter the name of the constraint.
5. In the **Constraint type** area, select the type of the new constraint (numeric or string).
6. For the constraint of numeric type (Figure 3-5), enter the following data:
    - In the **Min. value** box, enter the minimal accepted value for this constraint;
    - In the **Max. value** box, enter the maximal accepted value for this constraint;
    - In the **Value** box, enter the value that will be displayed by default.

— OR —

For the constraint of the string type (Figure 3-6), enter the required string values.

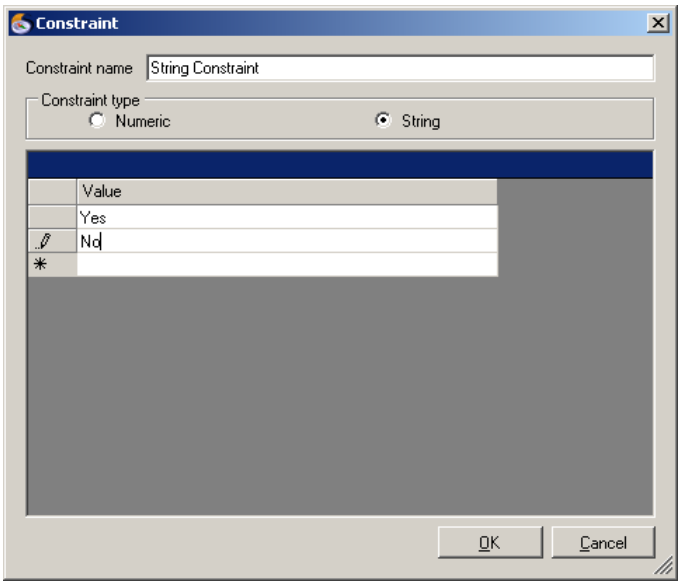


Figure 3-6: Example for filling the boxes for a string constraint

7. Click **OK**.

The newly created constraint is displayed in the *Strategy constraints* dialog box:

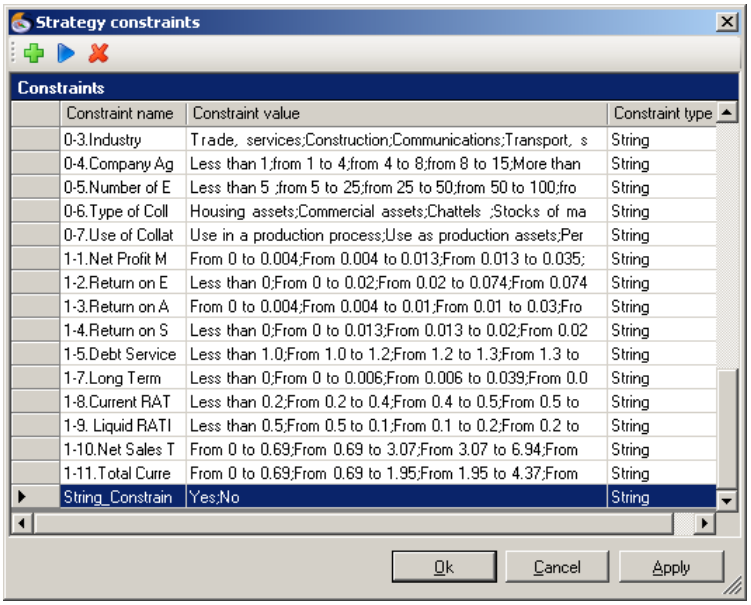


Figure 3-7: *Strategy Constraints* dialog box

8. Click **OK**.

The new constraint is successfully created.

Editing an Existing Constraint

To edit an existing constraint on values:

1. In the **Tree navigator** select the required strategy.
2. In the **Properties** work area at **Strategy constraints,** click [...].

The *Strategy constraints* dialog box is displayed:

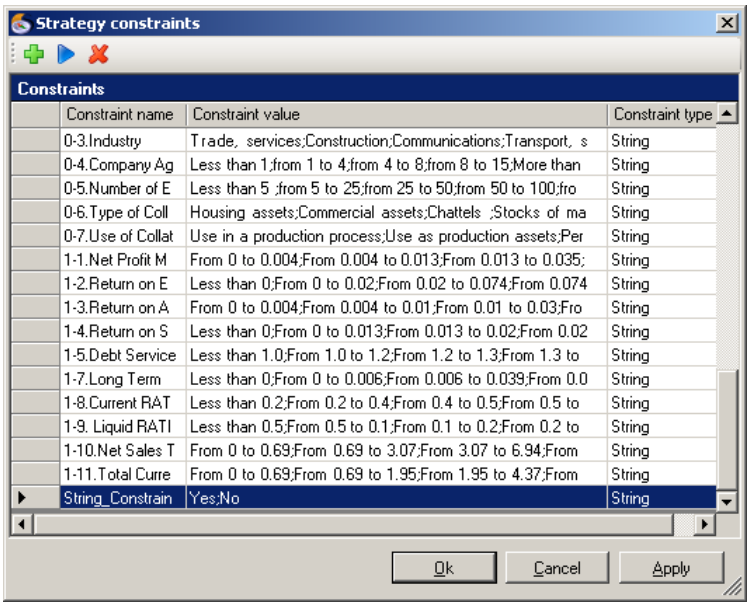


Figure 3-8: *Strategy Constraints* dialog box

3. Select the constraint to be edited.
4. On the toolbar, click .

The *Constraint* dialog box is displayed:

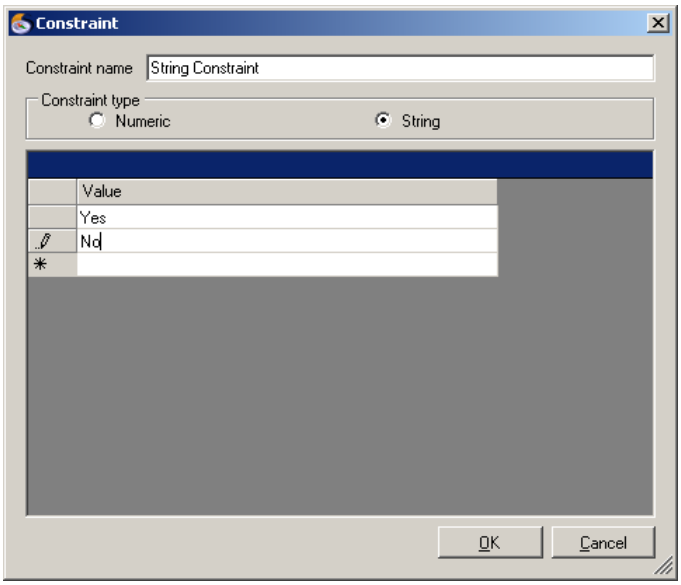


Figure 3-9: *Constraint* dialog box

5. Enter the appropriate changes.
6. Click **OK** to save your changes.

The edited constraint is displayed in the *Strategy constraints* dialog box:

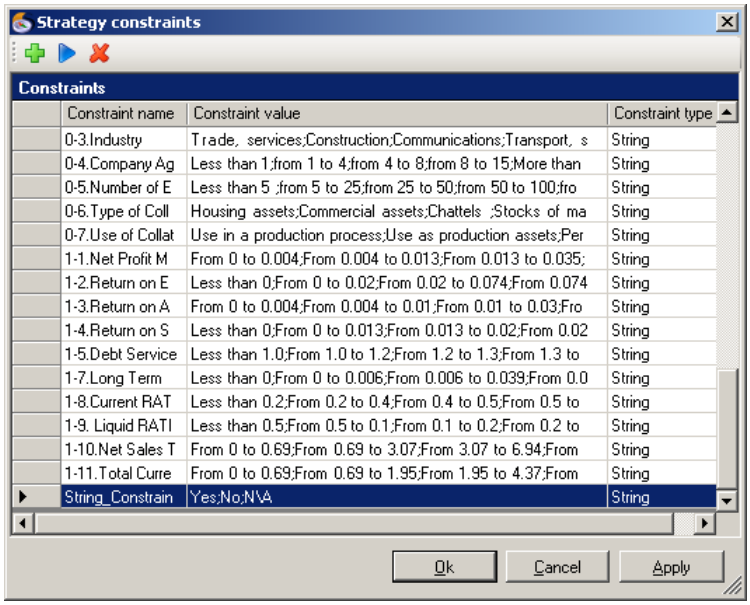


Figure 3-10: *Strategy Constraints* dialog box

7. Click **Apply**.
8. Click **OK.**

The selected constraint has been successfully edited.

Deleting an Existing Constraint

To delete an existing constraint:

1. In the **Tree navigator** select the required strategy.
2. In the **Properties** work area at **Strategy constraints,** click [...].

The *Strategy constraints* dialog box is displayed:

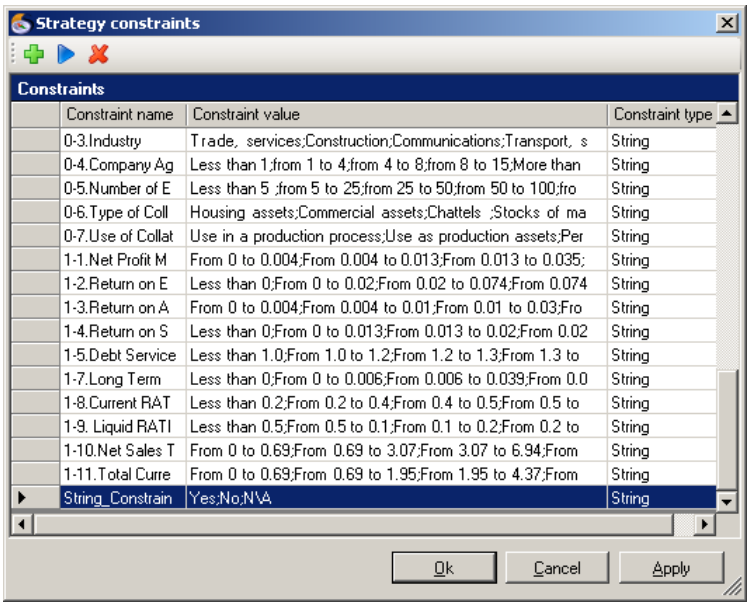


Figure 3-11: *Strategy Constraints* dialog box

3. Select the constraint to be deleted.
4. On the toolbar, click .

The following confirmation is requested:

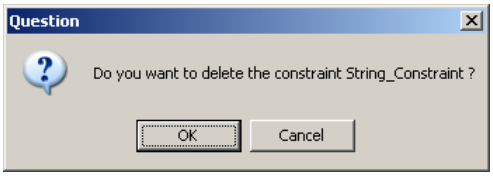


Figure 3-12: Confirmation request for deletion

5. Click **OK**.

The selected constraint has been successfully deleted.

Linking Constraints With Variables

To link a constraint to the variable:

1. In the **Tree navigator** select the required strategy.
2. In the **Properties** work area at **Variables,** click .

The *Strategy variables* dialog box is displayed:

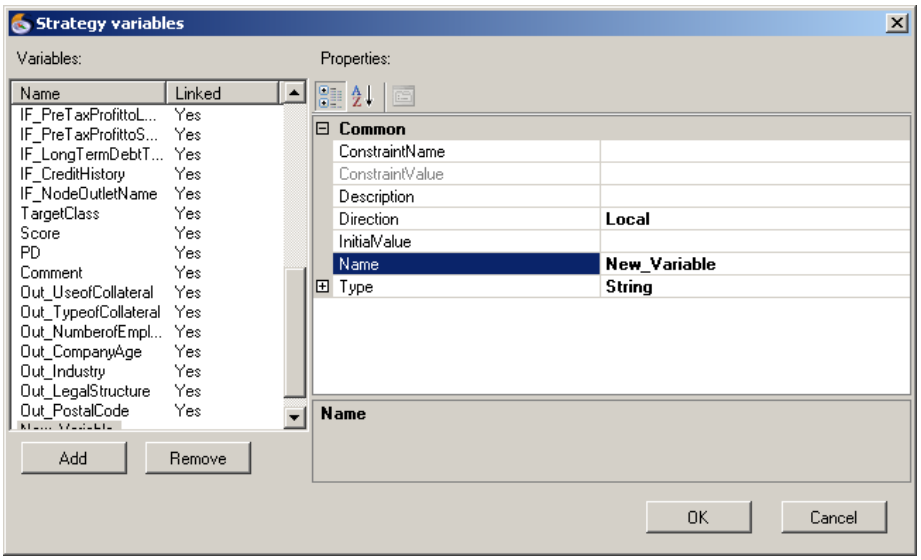


Figure 3-13: Strategy Variables *dialog box*

3. In the **Variables** area, select the required variable.
4. In the **Constraint Name** box, click[...].

The *Constraint* dialog box is displayed:

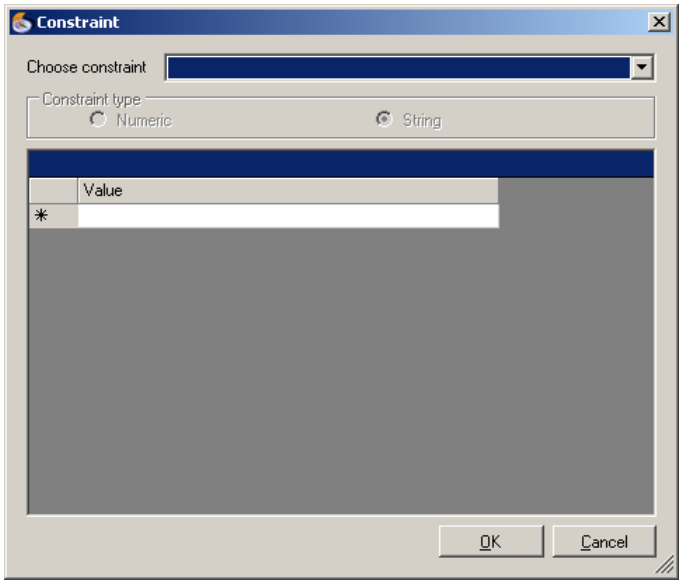


Figure 3-14: Constraint dialog box

5. From the **Choose constraint** drop-down box, select the required constraint.

In the values area the values of the selected constraint are displayed:

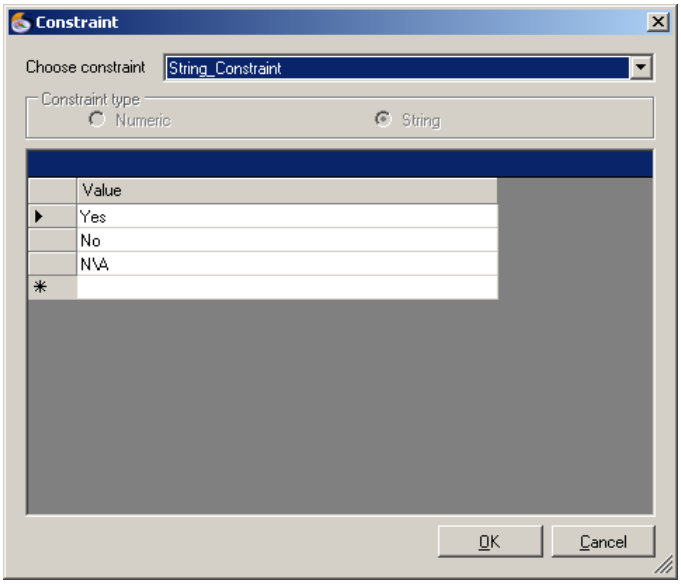


Figure 3-15: Constraint selected

6. Click **OK**.

The constraint is successfully linked to the variable.

The name and the value of the selected constraint are displayed in the variable properties:

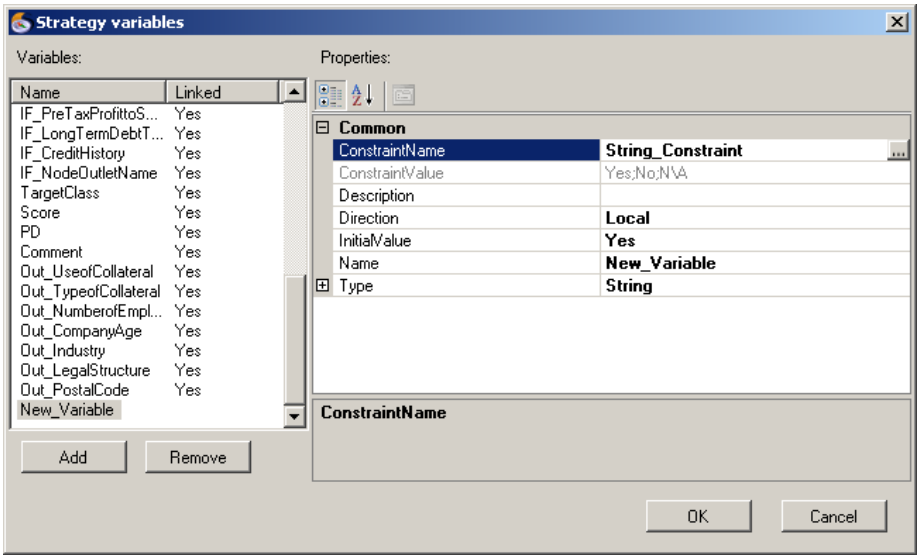


Figure 3-16: Name and value of the selected constraint

7. Click **OK**.

Nodes

The strategy is a sequence of a number of nodes that are linked to each other and are required to describe the business process.

Below is the description of the procedures for using the nodes included in the standard Scorto Strategy Maven package.

Comparison Node

The comparison node is a node that is included in the standard Scorto Strategy Maven package.

Figure 3-17: Comparison node in visual editor

Node Description

The comparison node checks whether the value of an expression or of a variable satisfies some condition. The node has two outputs. If the expression is correct (True), the application is then moved via the "green" node output; if the expression is not correct (False), then the application is moved via the "red" node output.

Node Properties

To set the node properties:

1. Drag and drop the node into the visual editor area.
2. Double-click the node.

The drop-down menu is displayed:

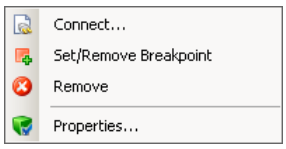


Figure 3-18: Drop-down menu

3. Select **Properties**.

The *Properties of Comparison* dialog box is displayed:

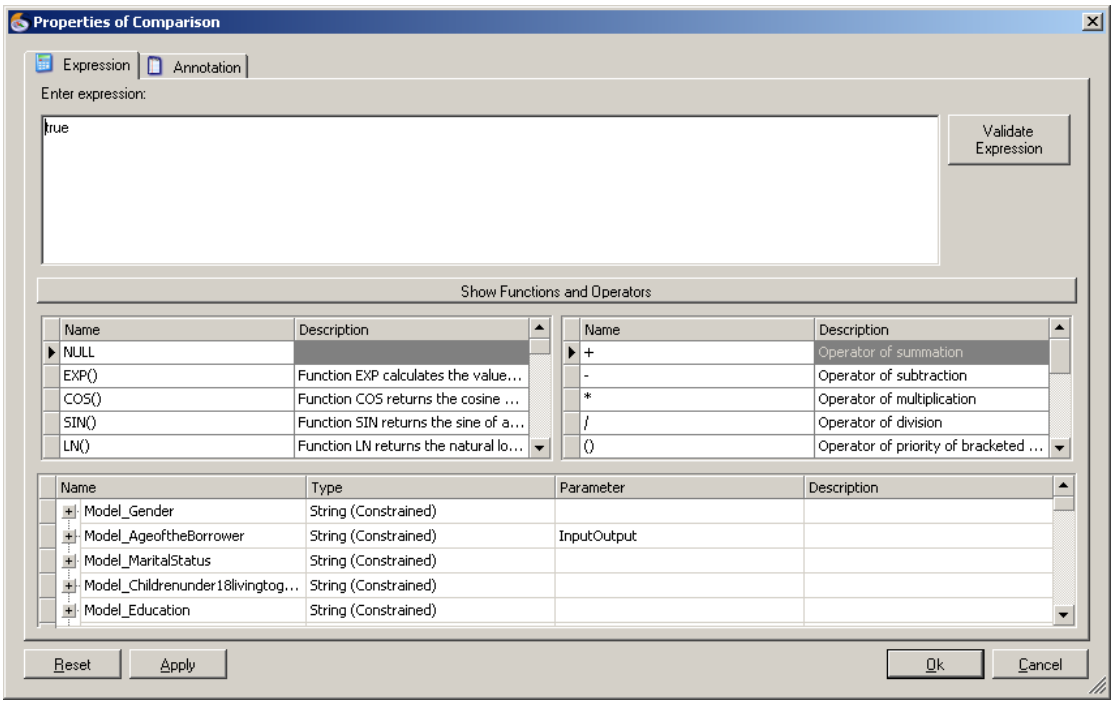


Figure 3-19: *Properties of Comparison* dialog box

Note: *The* Properties of node *dialog box can also be displayed by double-clicking the selected node.*

4. Select the required variable by double-clicking.

The selected variable is displayed in the **Enter expression** box:

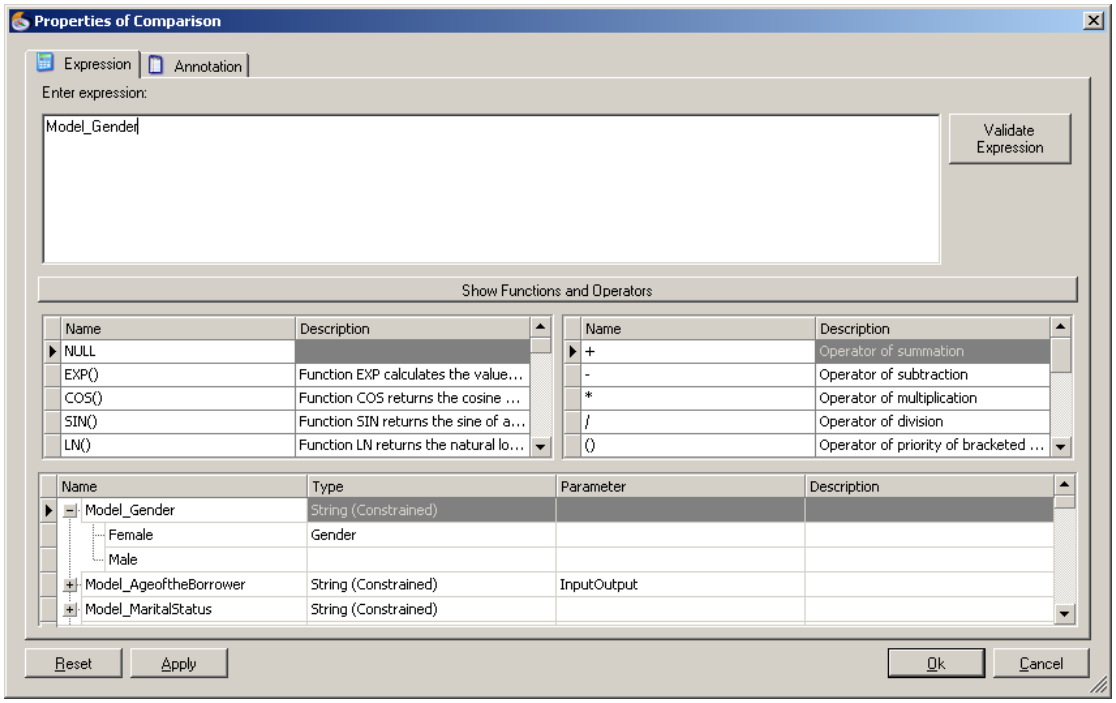


Figure 3-20: Selecting a variable in *Properties of Comparison*

5. Enter the value for the selected variable that is to be used for comparison.

Note: *The following rules are to be met when entering values in the* Properties of Comparison *dialog box:*

1) The value of the variable is entered after the sign of equality;

2) The value of a string variable must be in double quotes ("…"), the value of a numeric variable is entered without the quotes;

3) *The value of a constrained variable must be equal to one of the values specified in the constraint;*

4) *Additional mathematical and logical operators are available; to see them, click the* ***Show Functions and Operators*** *button. For more information, refer to Chapter «*Functions in Use (Reference)*», p. 197.*

6. Click **Validate Expression**.

If the entered expression is incorrect, the following message is displayed:

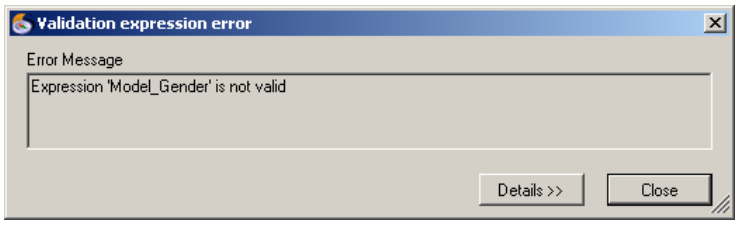


Figure 3-21: Expression validation error message

7. Correct the expression and repeat Step 6 of this procedure.

If the entered expression is correct, the following message is displayed:

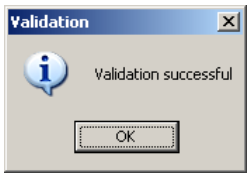


Figure 3-22: Message on successful validation of the expression

8. If an annotation is needed for the node, move to the **Annotation** tab and enter the required text into the **Annotation** box. This step is optional.
9. Click **Apply**.
10. Click **OK**.

Setting the breakpoint

Setting the breakpoint upon a node makes it possible to stop the simulation of the strategy on that node. To learn more about the step-by-step simulation of strategies, see *Strategy Execution Simulation*, page *190*.

To set the breakpoint:

1. In the visual editor area, select the required node.
2. Right-click the selected node.

The drop-down menu is displayed:

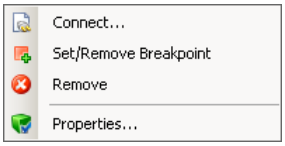


Figure 3-23: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the node with the breakpoint.

Figure 3-24: Breakpoint graphic indication

The breakpoint is successfully set.

Assignment Node

The assignment node is a node that is included in the standard Scorto Strategy Maven package.

Figure 3-25: Assignment node in visual editor

Node Description

This node assigns values to the strategy variables. For example, using this node, it is possible to define a message text that will be displayed to the user or to enter an expression to calculate a strategy variable.

Node Properties

To set the node properties:

1. Drag and drop the node into the visual editor area.
2. Double-click the node.

The drop-down menu is displayed:

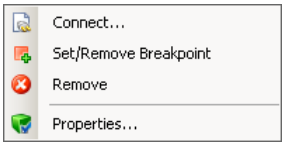


Figure 3-26: Drop-down menu

3. Select **Properties**.

The *Properties of Assignment* dialog box is displayed:

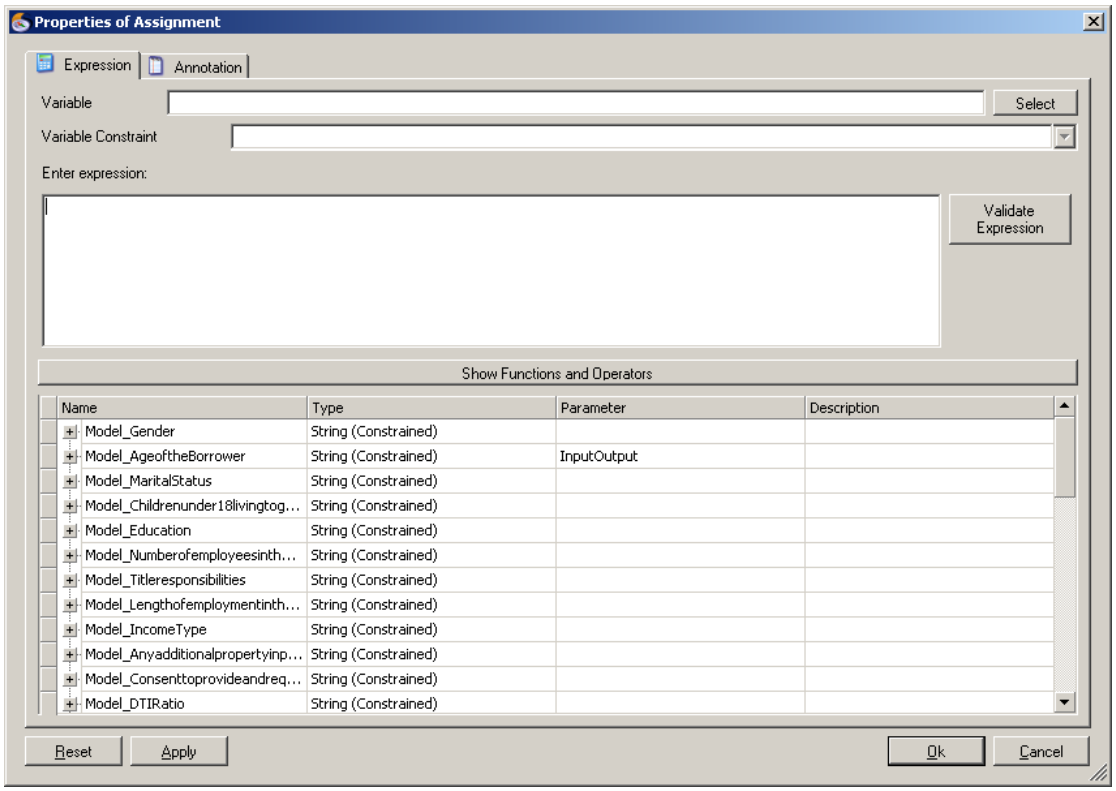


Figure 3-27: *Properties of Assignment* dialog box

Note: *The* Properties of node *dialog box can also be displayed by double-clicking the selected node.*

4. On the right of the **Variable** box, click **Select**.

The *Variables* table is displayed:

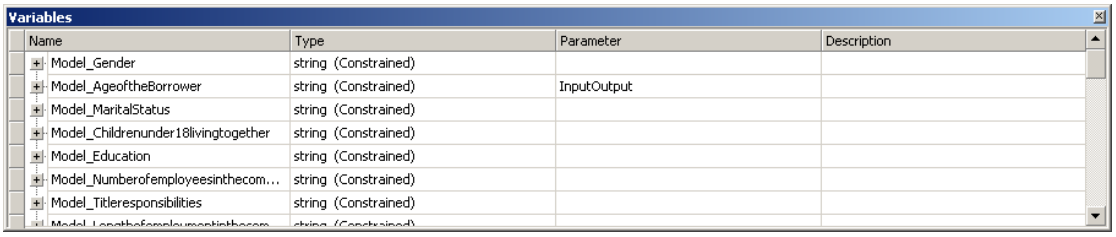


Figure 3-28: *Variables* table

5. Select the required variable by double-clicking.

The selected variable is displayed in the **Variable** box (its constraints, if there are any, are displayed in the **Variable Constraint** box):

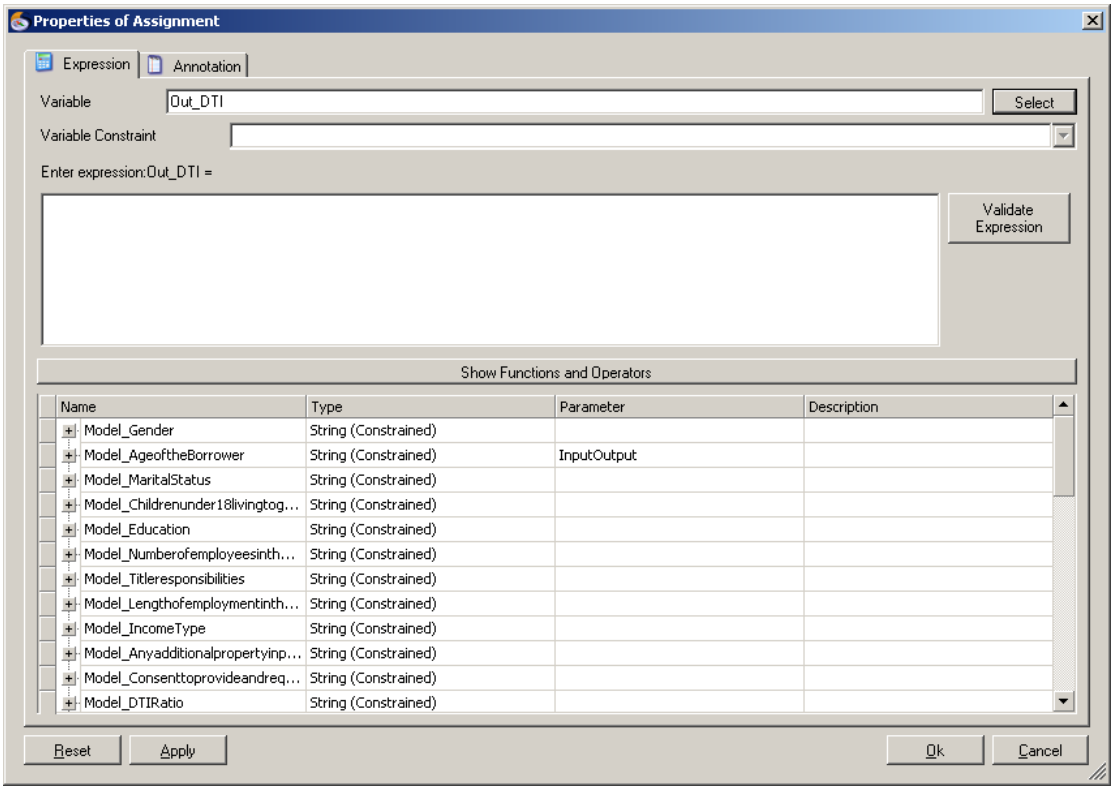


Figure 3-29: Selecting a variable in *Properties of Assignment*

6. In the **Enter expression** box, enter an expression for the selected variable that is to be used to make the assignment.

Note: *The following rules are to be met when entering values in the* Properties of Assignment *dialog box:*

1) The value of a string variable must be in double quotes ("…"), the value of a numeric variable

is entered without the quotes;

2) *The value of a constrained variable must be equal to one of the values specified in the constraint;*

3) *Additional mathematical and logical operators are available; to see them, click the* ***Show Functions and Operators*** *button. For more information, refer to Chapter* «Functions in Use (Reference)»*, p. 197.*

7. Click **Validate Expression**.

If the entered expression is incorrect, the following message is displayed:

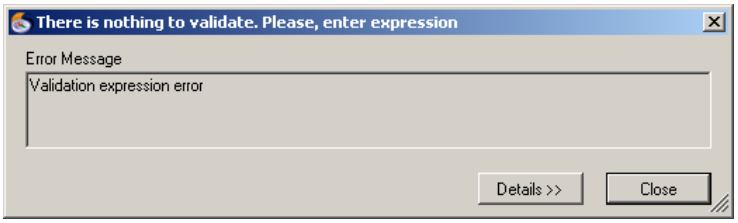


Figure 3-30: Expression validation error message

8. Correct the expression and repeat Step 7 of this procedure.

If the entered expression is correct, the following message is displayed:

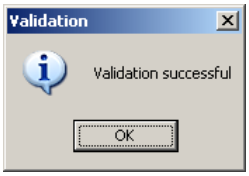


Figure 3-31: Message on successful validation of the expression

9. If an annotation is needed for the node, move to the **Annotation** tab and enter the required text into the **Annotation** box. This step is optional.
10. Click **Apply**.
11. Click **OK**.

Setting the breakpoint

Setting the breakpoint upon a node makes it possible to stop the simulation of the strategy on that node. To learn more about the step-by-step simulation of strategies, see *Strategy Execution Simulation*, page *190*.

To set the breakpoint:

1. In the visual editor area, select the required node.
2. Right-click the selected node.

The drop-down menu is displayed:

Figure 3-32: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the node with the breakpoint.

Figure 3-33: Breakpoint graphic indication

The breakpoint is successfully set.

Model Execution Node

The model execution node is a node that is included in the standard Scorto Strategy Maven package.

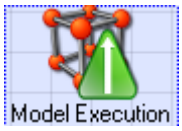


Figure 3-34: Model Execution node displayed in the visual editor

Node Description

The model execution node is intended for the processing of questionnaire data in the scoring model.

Uploading the Model File

To upload the model file:

1. Drag and drop the node into the visual editor area.

The *Creation of Model Node* welcome page is displayed:

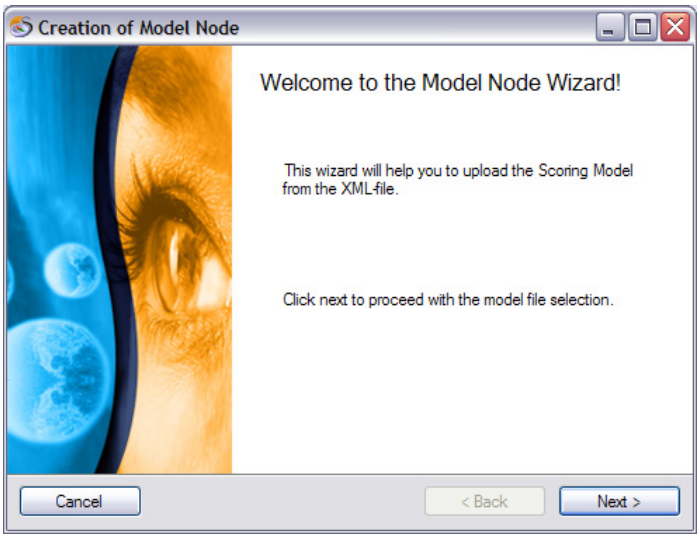


Figure 3-35: *Creation of Model Node* welcome page

2. Click **Next**.

The page for searching the model file is displayed:

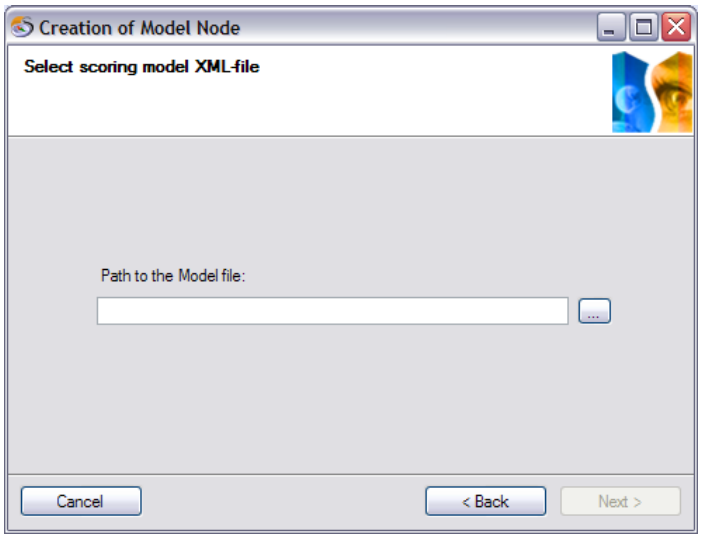


Figure 3-36: Model file search page

3. Click ....

The *Open* dialog box is displayed:

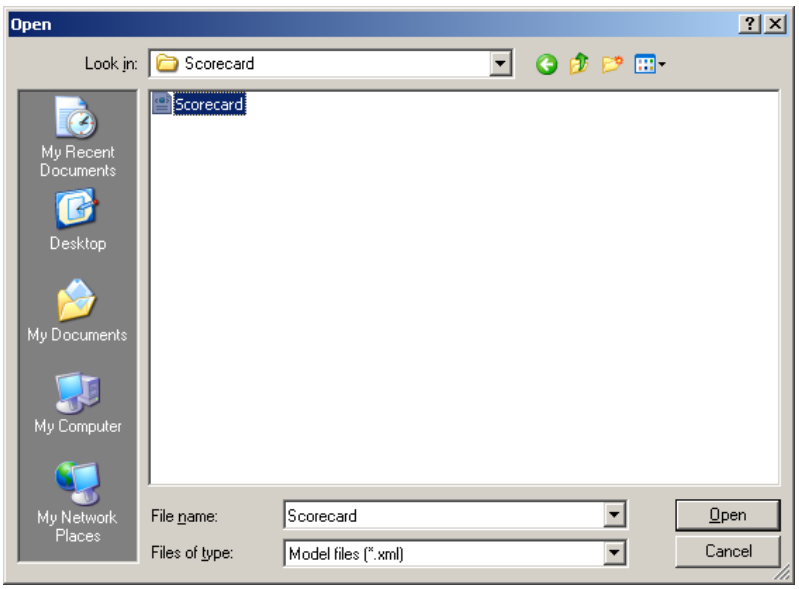


Figure 3-37: *Open* dialog box

4. Specify the required model file and click **Open**.

The selected file is displayed in the **Path to the Model file** box:

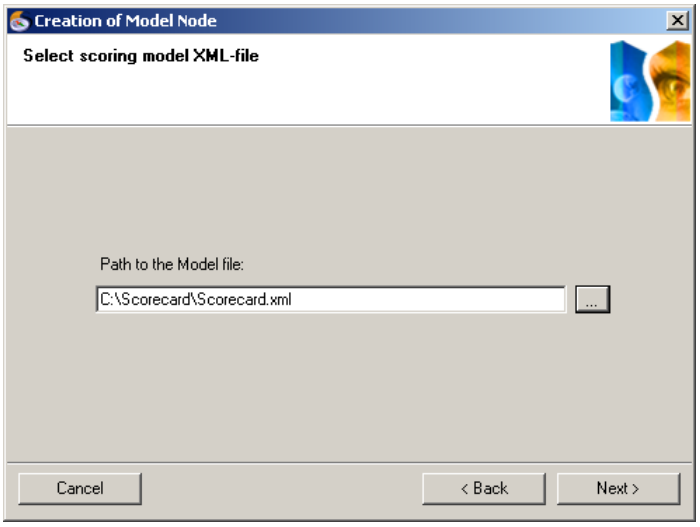


Figure 3-38: Selecting a model file

5. Click **Next**.

The model is being uploaded:

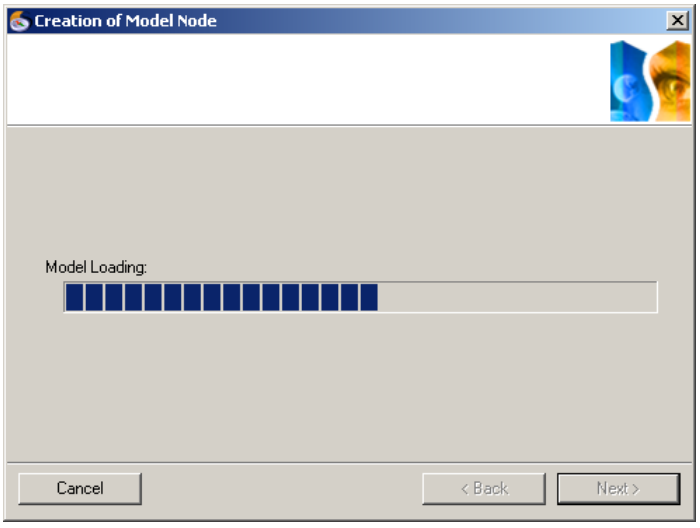


Figure 3-39: Uploading the model

After the model has been uploaded, the list of data fields for the model is displayed:

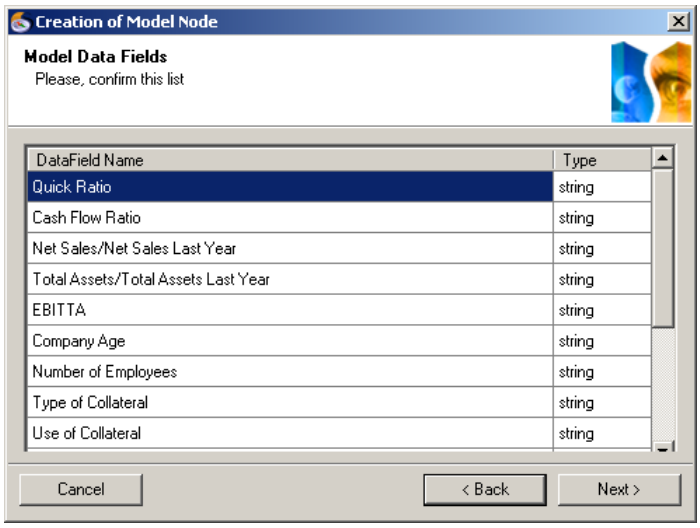


Figure 3-40: List of model data fields

6. Click **Next**.

When the process finishes successfully, the following message is displayed:

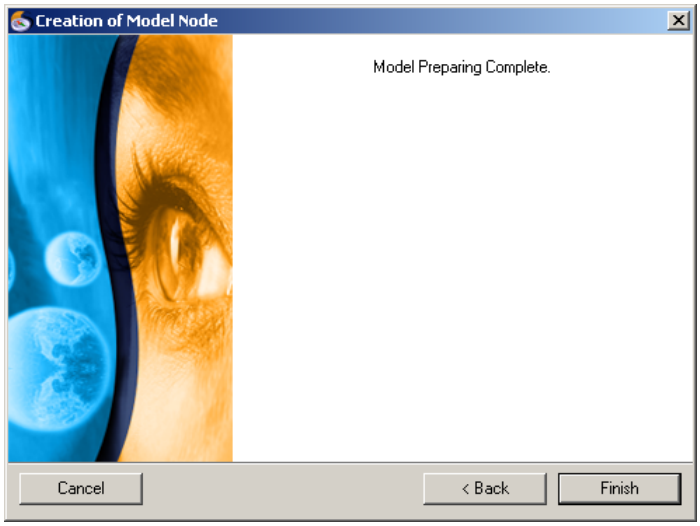


Figure 3-41: Message on successful end of the process

7. Click **Finish**.

The model execution node is displayed in the visual editor:

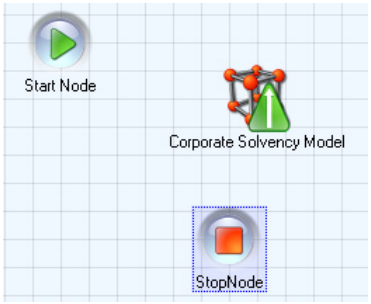


Figure 3-42: Model execution node

Linking variables

To link variables:

1. Right-click the model execution node to view the drop-down menu.

The drop-down menu is displayed:

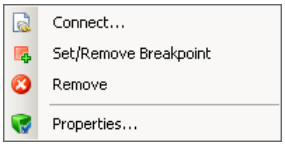


Figure 3-43: Drop-down menu

2. Select **Properties**.

The **Variable Mapping** tab of the *Properties of Model Execution* dialog box is displayed:

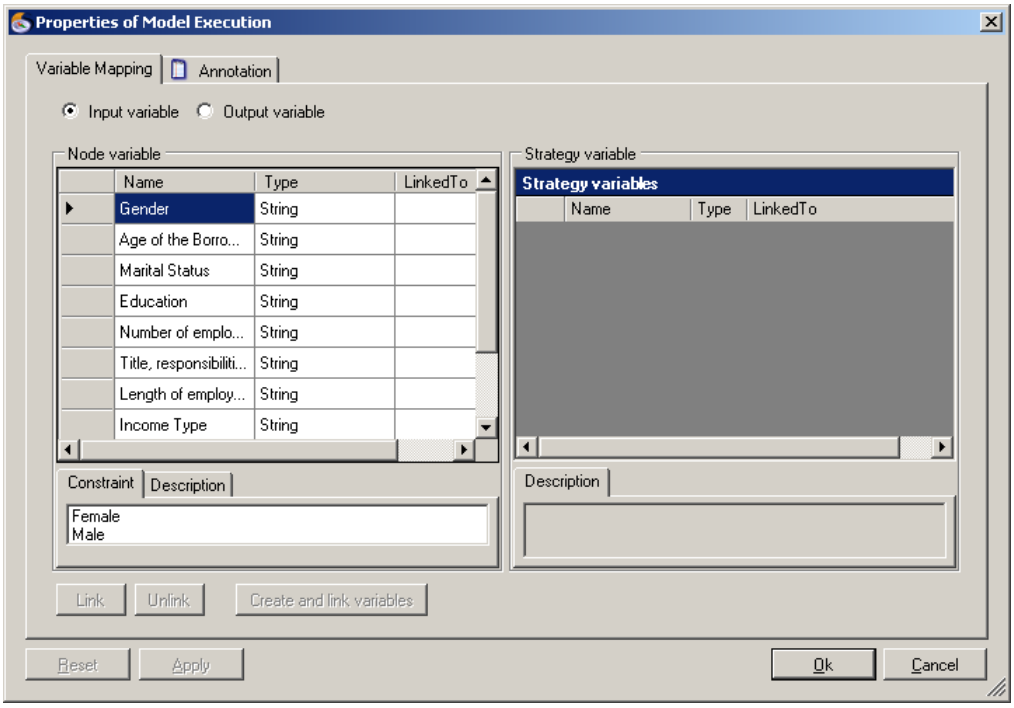


Figure 3-44: Variable Mapping tab of *Properties of Model Execution* dialog box

3. In the **Node variable** area, select the variable to be linked.
4. In the **Strategy variables** area, select the variable, to which the node variable is to be linked.

Note: *If the required variable is absent in the **Strategy variables** area, click the **Create and link variables** button.*

5. Click **Link**.

The following confirmation is requested:

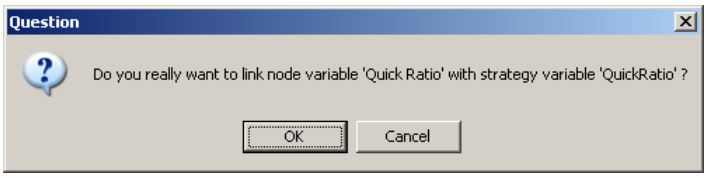


Figure 3-45: Confirmation request

6. Click **OK**.

The two variables are successfully linked:

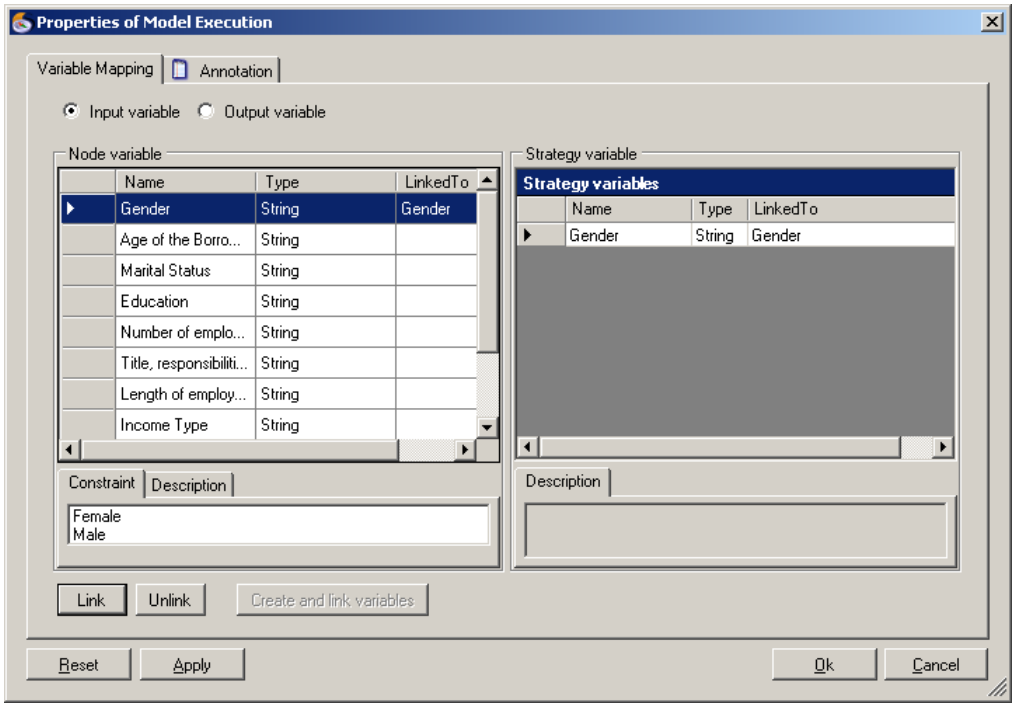


Figure 3-46: Variable link information in the *Properties of Model Execution* dialog box

7. Repeat steps 3-6 for the rest of the variables.
8. On the **Variable mapping** tab, select **Output variable**.

The output variables are displayed:

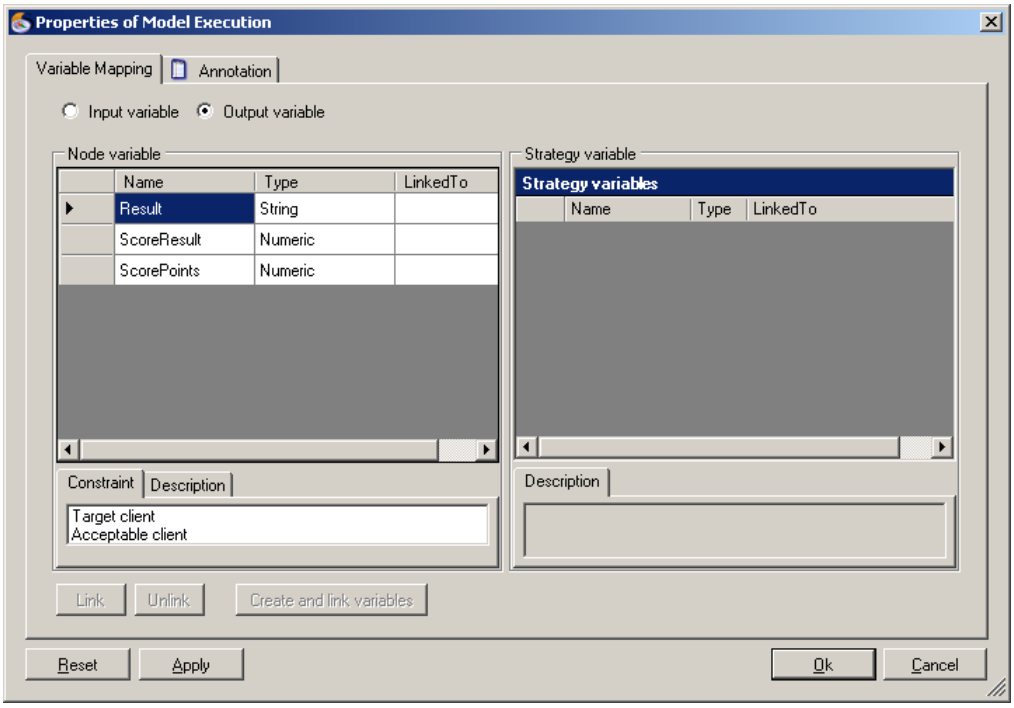


Figure 3-47: Output variables of model execution node

9. Repeat steps 3-6 of this procedure.

Other Properties

This section explains how to set a custom name for the node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. Right-click the model execution node to view the drop-down menu.

The drop-down menu is displayed:

Figure 3-48: Drop-down menu

2. Select **Properties**.

The **Variable Mapping** tab of the *Properties of Model Execution* dialog box is displayed:

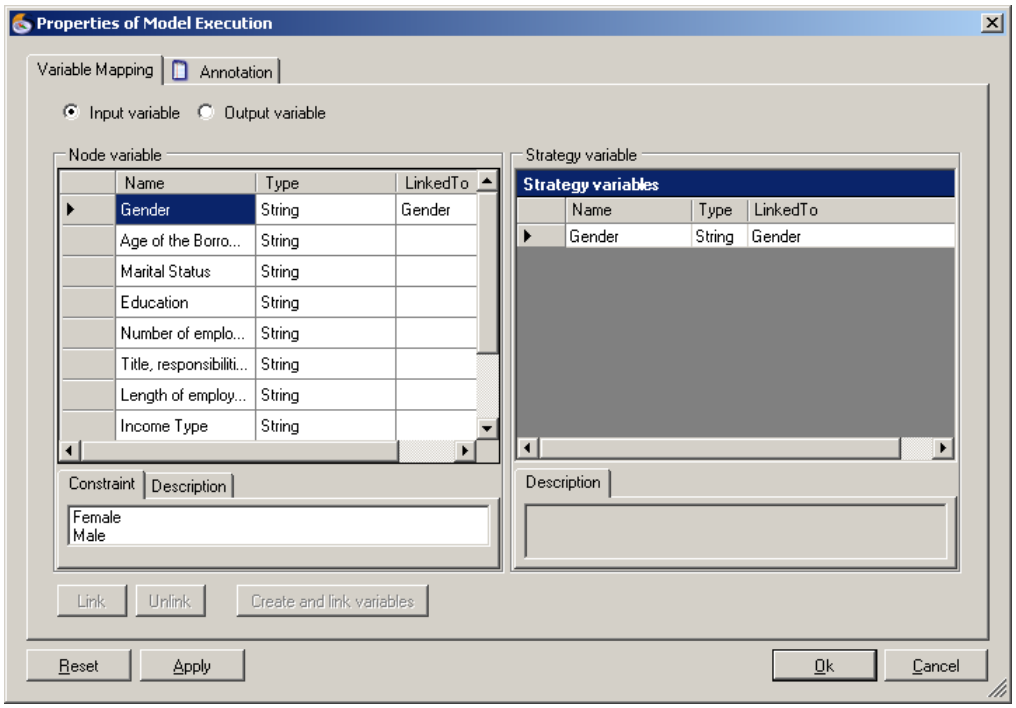


Figure 3-49: Variable Mapping tab of *Properties of Model Execution* dialog box

3. Select the **Annotation** tab.

The **Annotation** tab is displayed:

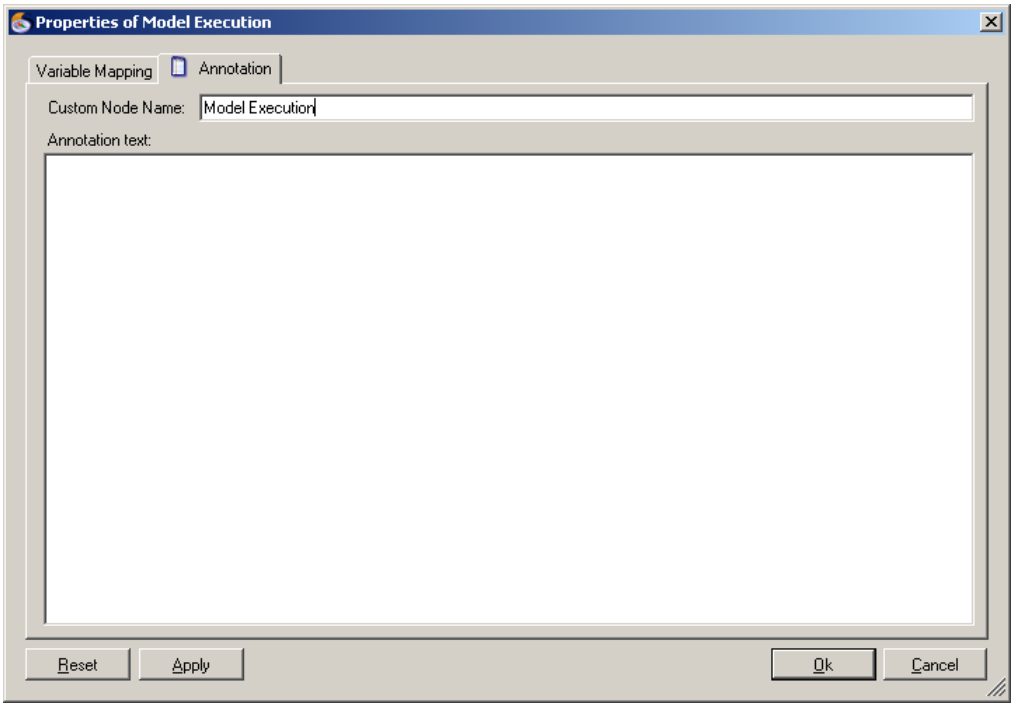


Figure 3-50: Annotation tab

4. In the **Custom Node Name** box, enter a custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

Setting the breakpoint upon a node makes it possible to stop the simulation of the strategy on that node. To learn more about the step-by-step simulation of strategies, see *Strategy Execution Simulation*, page *190*.

To set the breakpoint:

1. In the visual editor area, select the required node.

2. Right-click the selected node.

The drop-down menu is displayed:

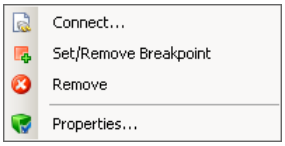


Figure 3-51: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the node with the breakpoint.

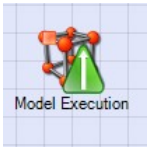


Figure 3-52: Breakpoint graphic indication

The breakpoint is successfully set.

Form Input Node

The form input node is a node that is included in the standard Scorto Strategy Maven package.

Figure 3-53: Form Input node displayed in the visual editor

Node Description

The form input node is intended for filling in the borrower's questionnaire.

The node is created in Scorto Node Designer, published in Scorto Patron, and afterwards is displayed in Scorto Strategy Maven. For additional information, refer to the user manuals for the above-mentioned applications.

Linking variables

To link variables:

1. Right-click the model execution node to view the drop-down menu.

The drop-down menu is displayed:

Figure 3-54: Drop-down menu

2. Select **Properties**.

The **Variable Mapping** tab of the *Properties* dialog box is displayed:

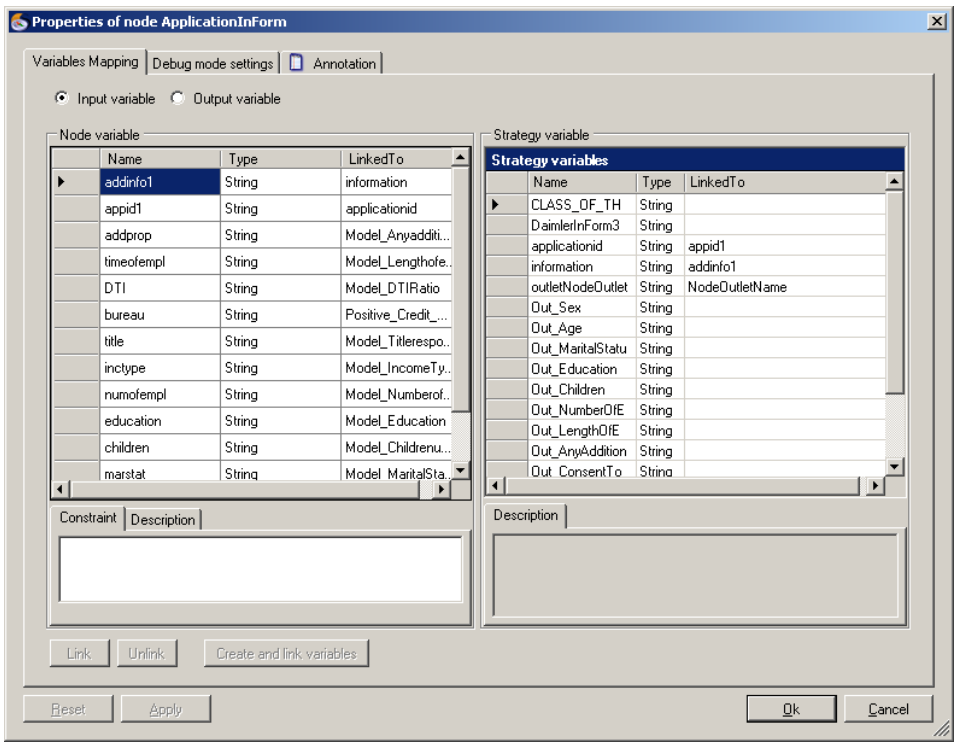


Figure 3-55: *Properties* dialog box

3. In the **Node variable** area, select the variable to be linked.
4. In the **Strategy variables** area, select the variable, to which the node variable is to be linked.

Note: *If the required variable is absent in the **Strategy variables** area, click the **Create and link variables** button.*

5. Click **Link**.

The following confirmation is requested:

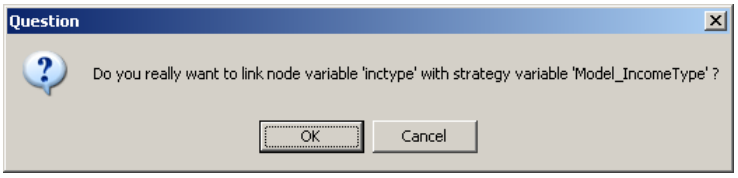


Figure 3-56: Confirmation request

6. Click **OK**.

The two variables are successfully linked:

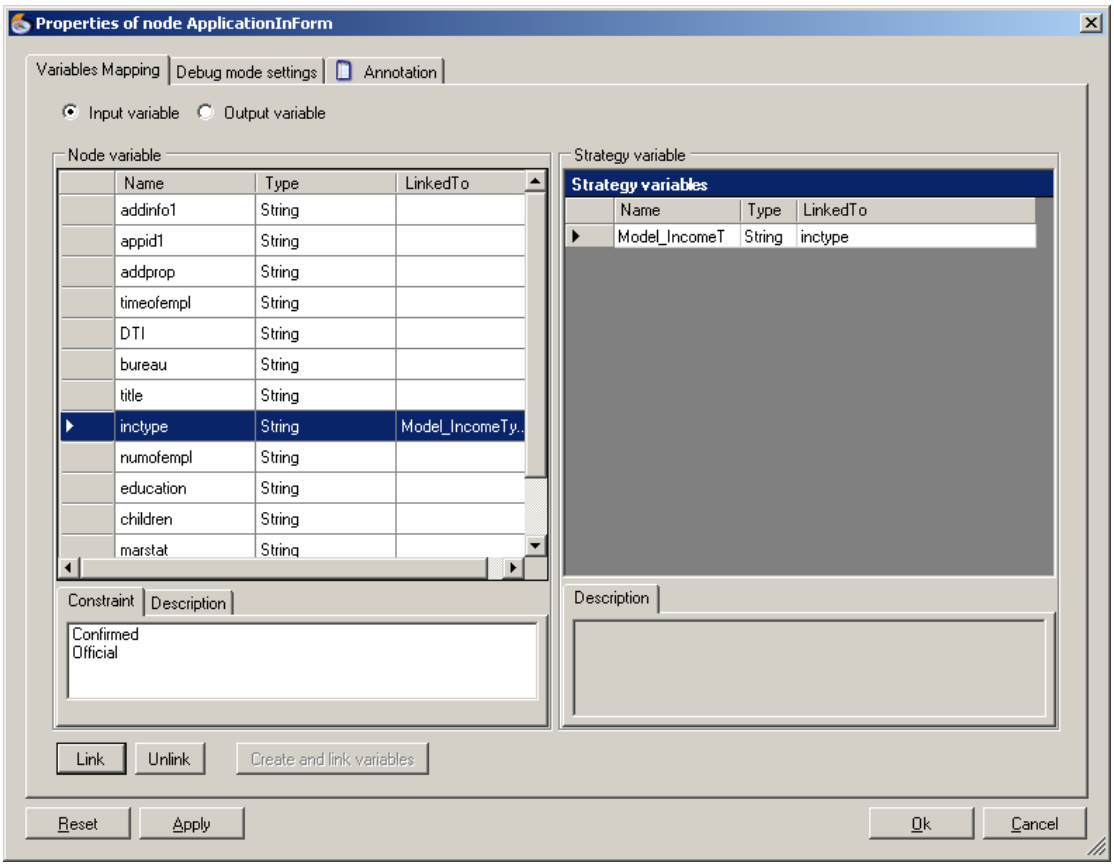


Figure 3-57: Variable link information in the *Properties of Form Input* dialog box

7. Repeat steps 3-6 for the rest of the variables.
8. On the **Variable mapping** tab, select **Output variable**.

The output variables are displayed:

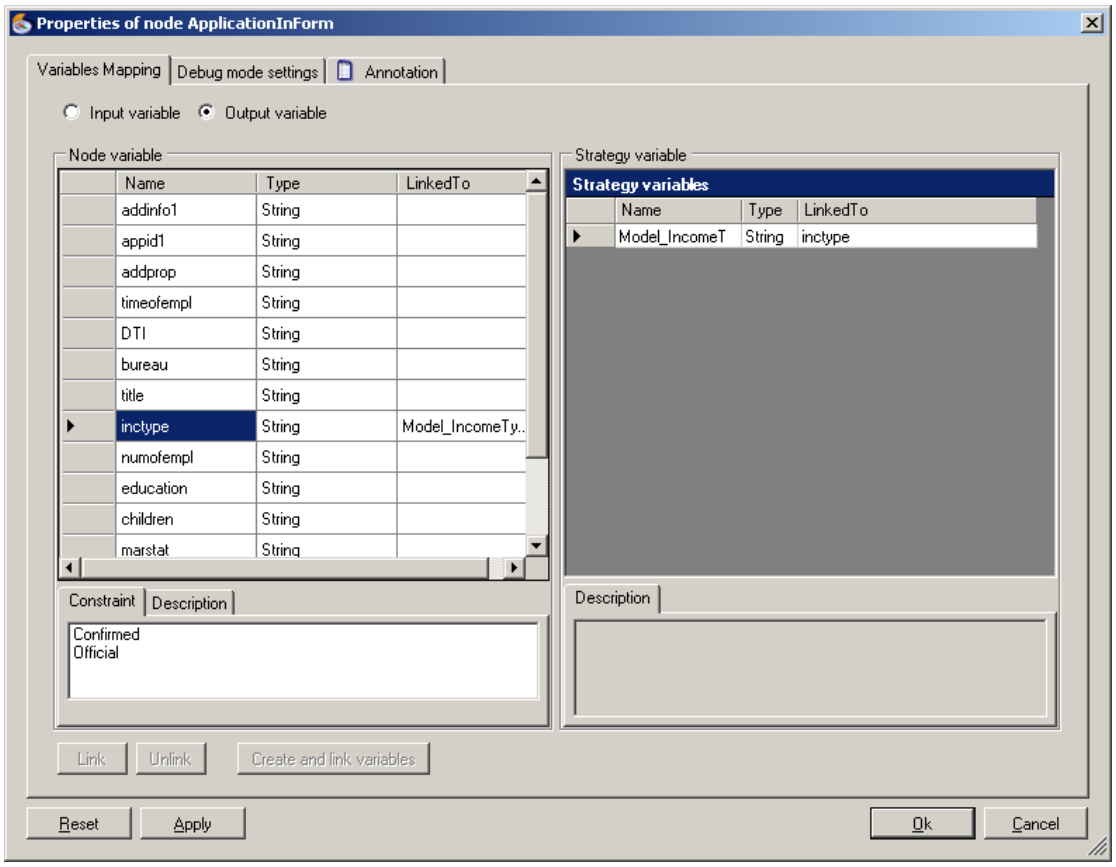


Figure 3-58: Output variables of model execution node

9. To define links for the output variables of the node, perform steps similar to Steps 3-6 of this procedure.

Other Properties

This section explains how to set a custom name for the node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. Right-click the model execution node to view the drop-down menu.

The drop-down menu is displayed:

Figure 3-59: Drop-down menu

2. Select **Properties**.

The **Variable Mapping** tab of the *Properties* dialog box is displayed:

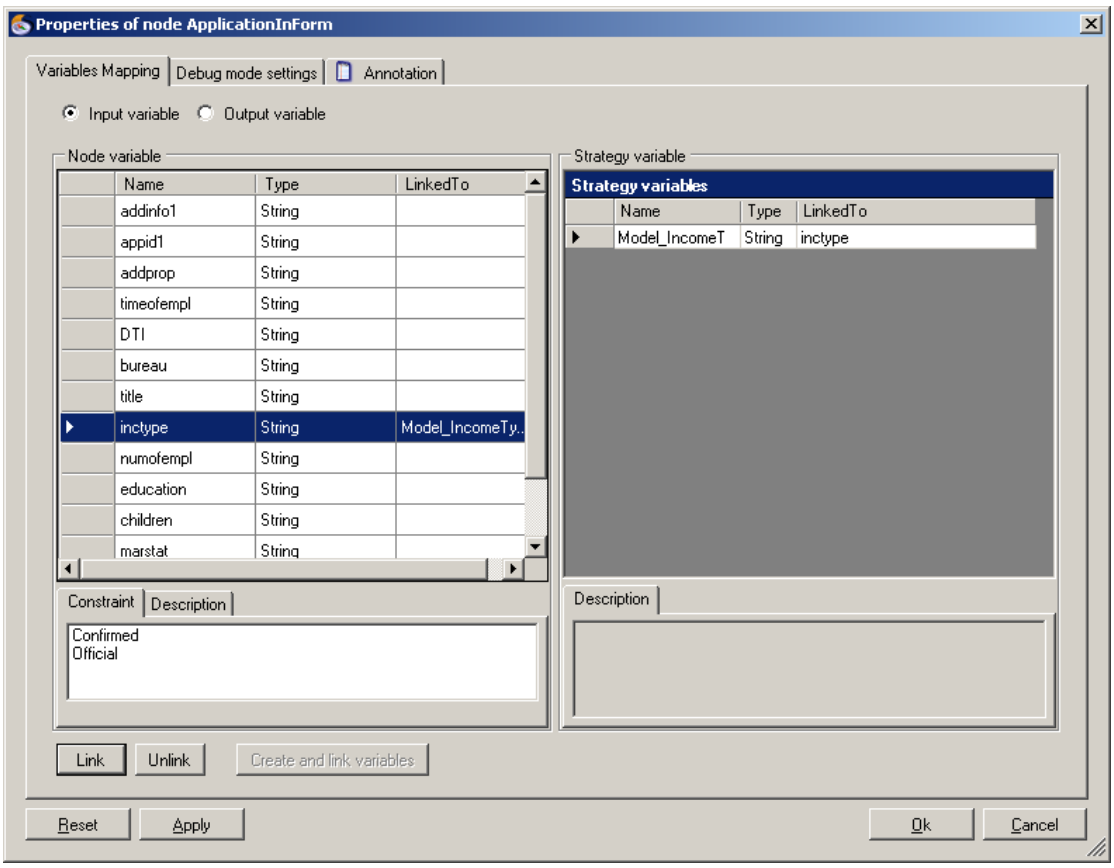


Figure 3-60: Variable Mapping tab in the *Properties* dialog box

3. Select the **Annotation** tab.

The **Annotation** tab is displayed:

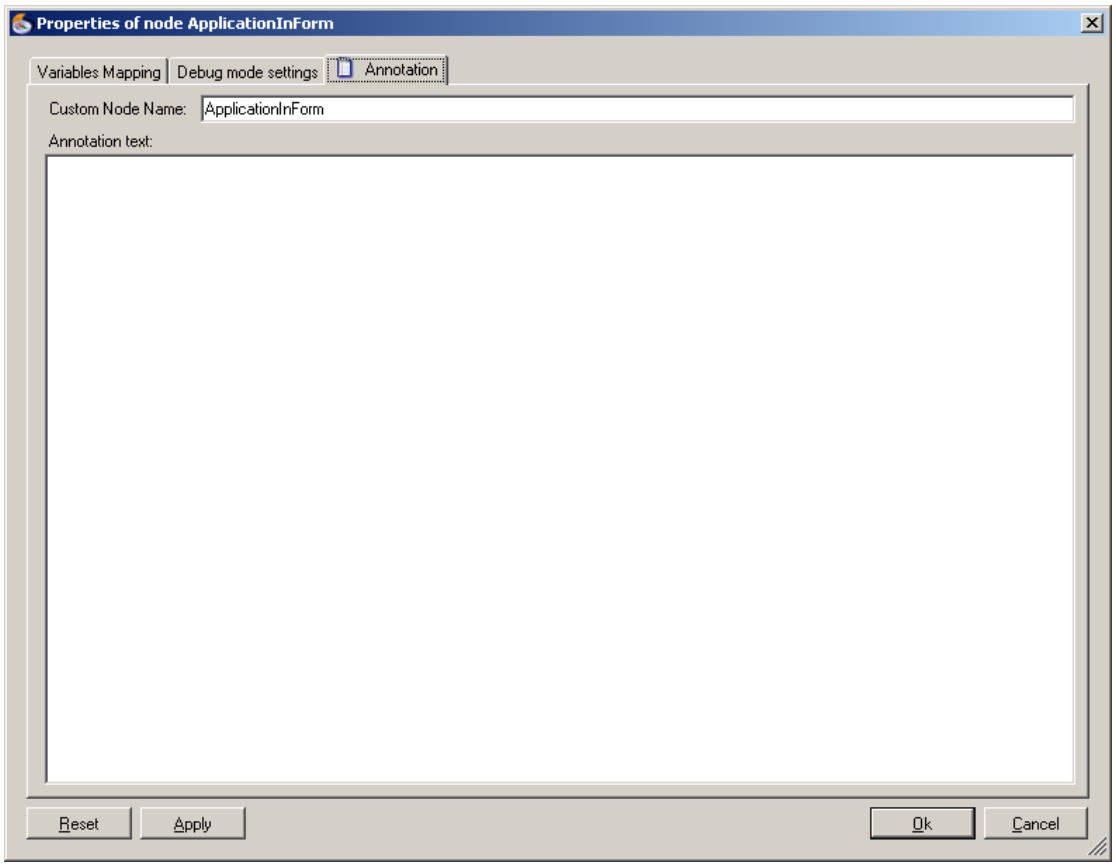


Figure 3-61: Annotation tab

4. In the **Custom Node Name** box, enter a custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

NodeNameOutlet Variable

The **NodeNameOutlet** variable is intended to support the embedded strategy functionality and is used to obtain

values of the none, yes/no, reject, submit type from the linked node of an embedded strategy.

This variable is present in the questionnaire filling node and auto-fill node.

To create and link the NodeNameOutlet variable:

1. In the visual editor area, select the required questionnaire filling node or auto-fill node.
2. Right-click the selected node.

The drop-down menu is displayed:

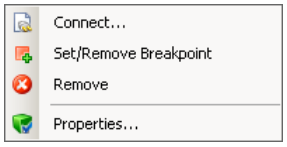


Figure 3-62: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The *Properties* dialog box is displayed:

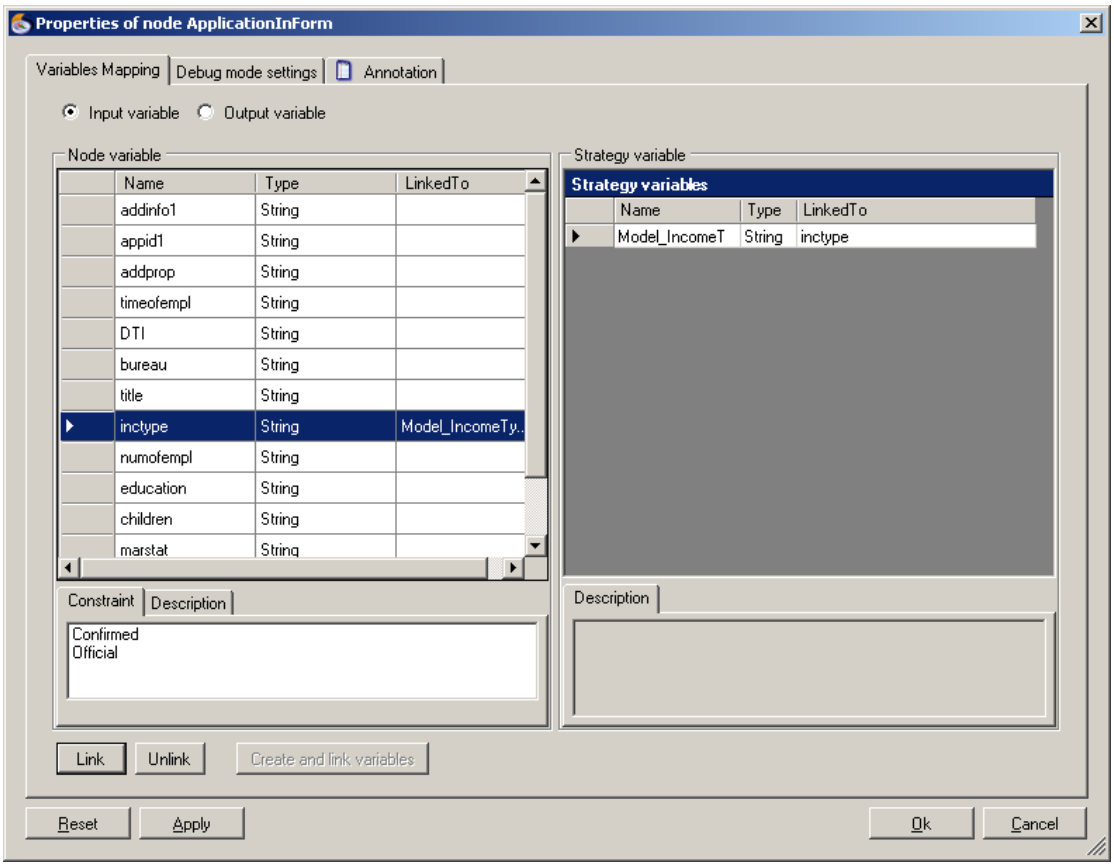


Figure 3-63: *Properties* dialog box

4. On the **Variable Mapping** tab, select **Output variable**.

The list of all output variables is displayed in the *Properties* dialog box:

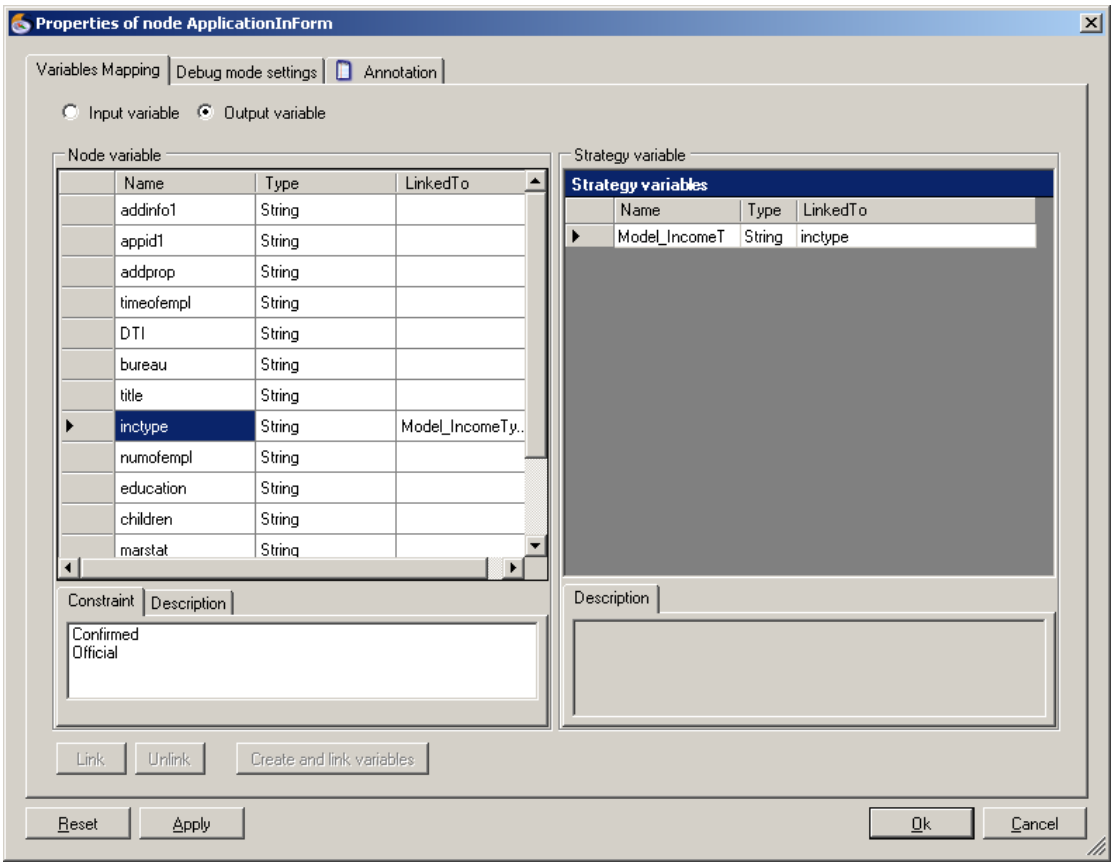


Figure 3-64: List of output variables

5. In the **Node variables** area, select the **NodeOutletName** variable.

The **Strategy variables** table lists all variables that can be linked to the NodeOutletName variable:

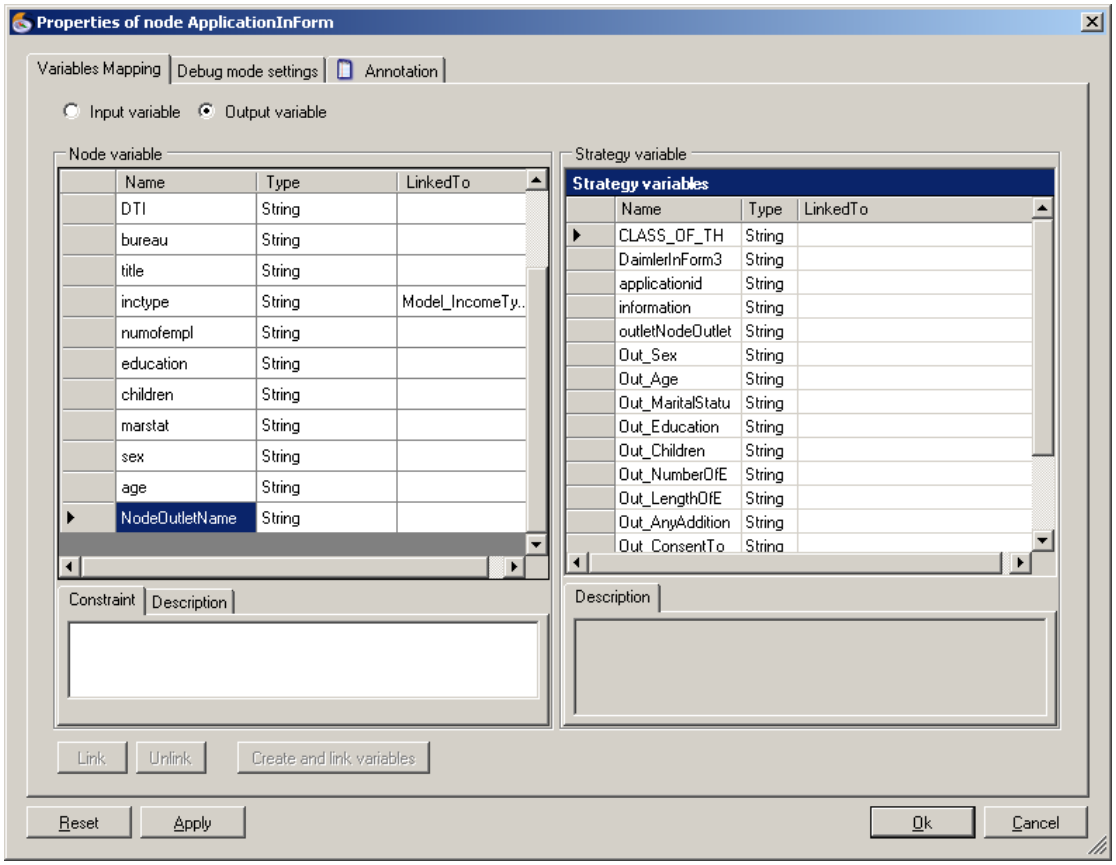


Figure 3-65: Variables that can be linked to the NodeNameOutlet variable

Note: *If the required variable is absent in the **Strategy Variables** area, use the **Create and link variables** button.*

6. In the **Strategy Variables** area, select the required variable.
7. Click **Link**.

The following confirmation is requested:

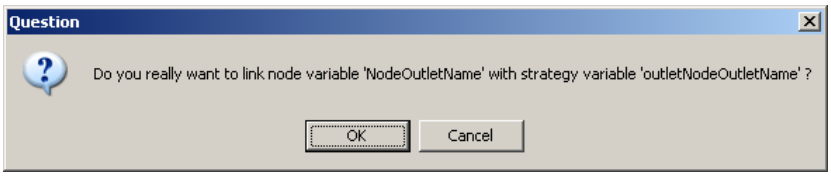


Figure 3-66: Variable linking confirmation

8. Click **OK**.

The NodeNameOutlet variable is successfully linked to the strategy variable:

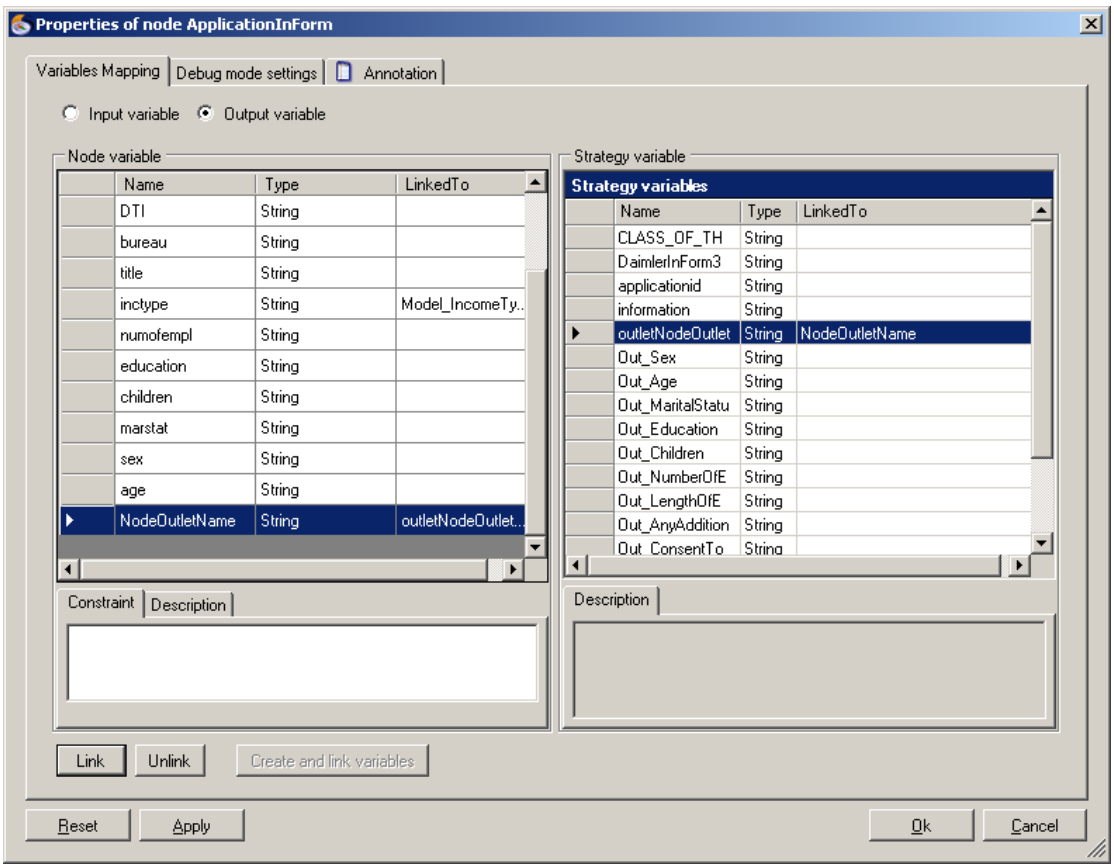


Figure 3-67: Variable NodeNameOutlet linked to the strategy variable

Setting the breakpoint

Setting the breakpoint upon a node makes it possible to stop the simulation of the strategy on that node. To learn more about the step-by-step simulation of strategies, see *Strategy Execution Simulation*, page *190*.

To set the breakpoint:

1. In the visual editor area, select the required node.
2. Right-click the selected node.

The drop-down menu is displayed:

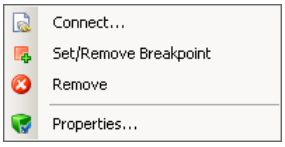


Figure 3-68: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the node with the breakpoint.

Figure 3-69: Breakpoint graphic indication

The breakpoint is successfully set.

Suspend Node

The Suspend node is a node that is included in the standard Scorto Strategy Maven package.

Figure 3-70: Suspend node displayed in the visual editor

Node Description

The Suspend node is intended for pausing the strategy execution for a predefined period of time.

Node Properties

The duration of the pause period in the strategy execution can be set in the following ways:

- Through the use of the strategy variable linked to the variable of the *TimeToSuspend* node.

For that purpose, the user can use a strategy variable of the *String* type; the value of this variable sets the duration of the pause period in seconds, for example, "90".

- The duration can also be set directly in the process of adjusting the node.

The duration of the pause period can be set in seconds in the process of adjusting the node.

Besides, the duration of the pause period for the strategy execution can be set as unlimited.

To set the node properties:

1. Drag and drop the node into the visual editor area.
2. Double-click the node.

The drop-down menu is displayed:

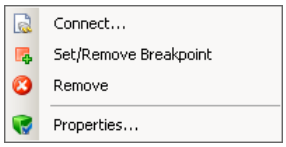


Figure 3-71: Drop-down menu

3. Select **Properties**.

The **Variable Mapping** tab of the *Properties of Suspend Node* dialog box is displayed:

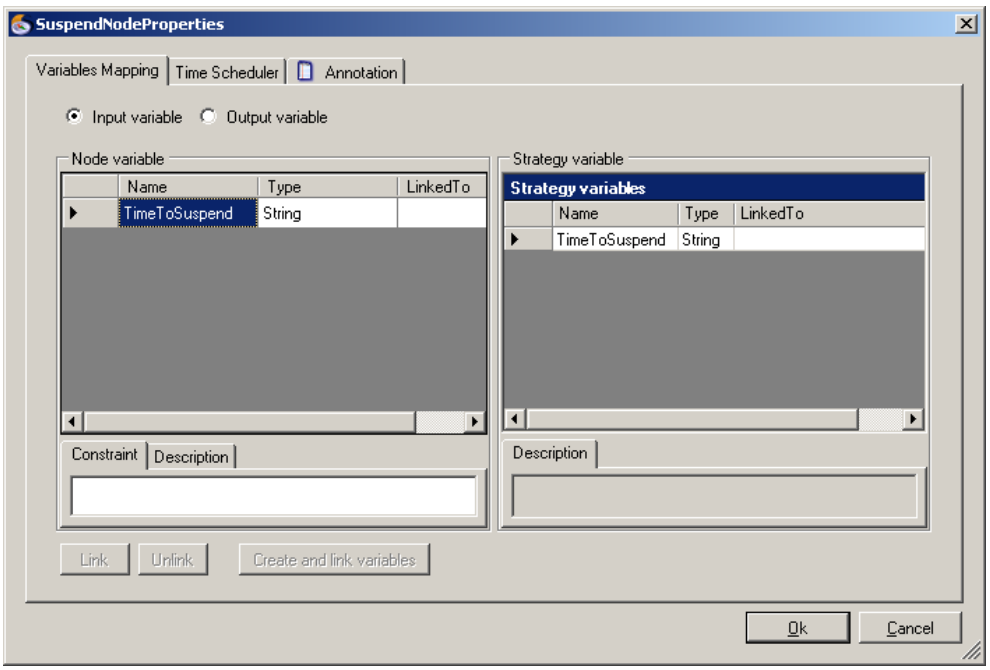


Figure 3-72: The Variable Mapping tab of the *Properties of Suspend Node* dialog box

4. In the **Node variable** area, select the TimeToSuspend variable.
5. In the **Strategy variables** area, select the variable for the linking.

Note: *If the required variable is absent in the* ***Strategy variables***

area, click the ***Create and link variables*** *button.*

6. Click **Link**.

The following confirmation is requested:

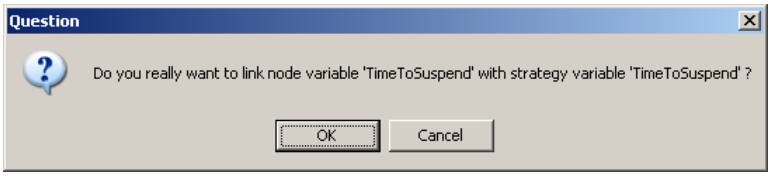


Figure 3-73: Confirmation request

7. Click **OK**.

The two variables are successfully linked:

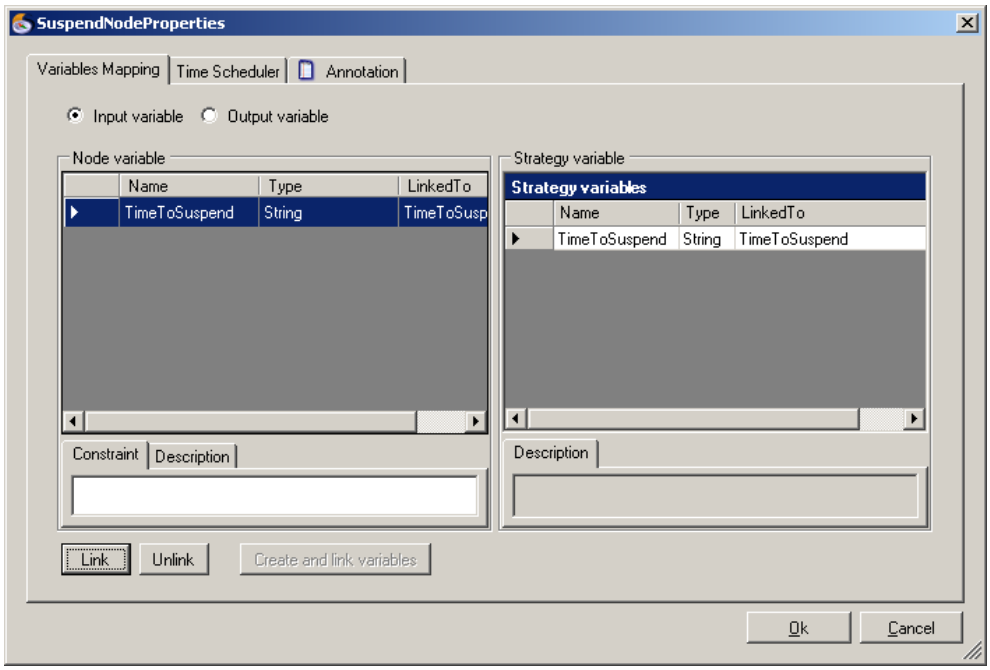


Figure 3-74: Variables are successfully linked

8. Select the *Time Scheduler* tab:

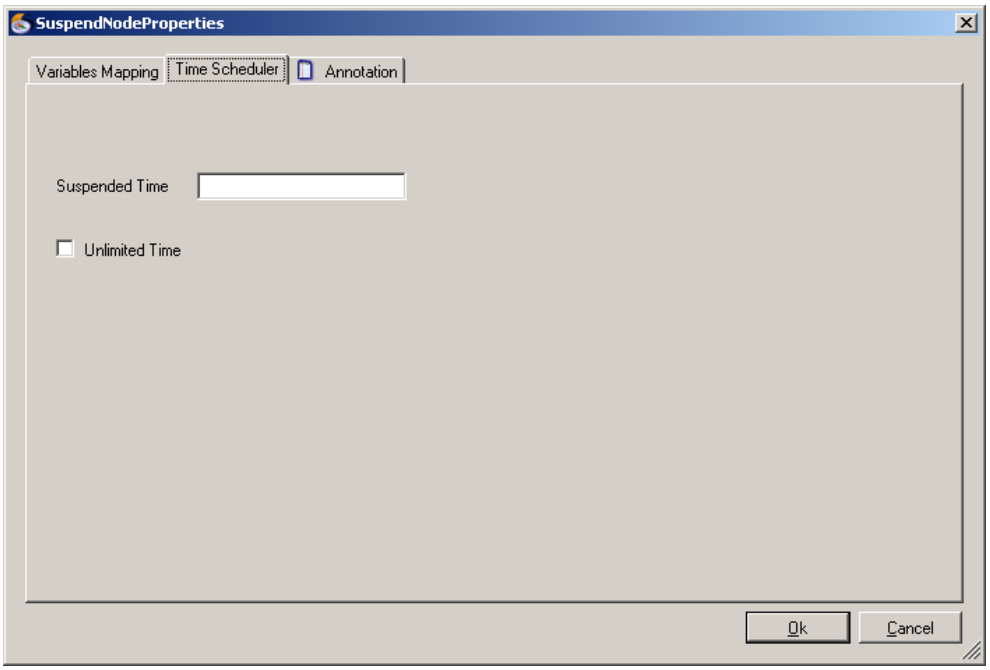
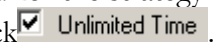


Figure 3-75: The Scheduler tab of the *Properties of Suspend Node* dialog box

9. If the duration of the pause period for the strategy execution is not defined though the use of a strategy variable, enter the required value in seconds into the Suspended Time box.
10. If the duration of the pause period for the strategy execution must be unlimited, check  .
11. Click **OK**.

The properties of the **Suspend** node are successfully set.

Other Properties

This section explains how to set a custom name for the node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. Right-click the model execution node to view the drop-down menu.

The drop-down menu is displayed:

Figure 3-76: Drop-down menu

2. Select **Properties**.

The **Variable Mapping** tab of the *Properties* dialog box is displayed:

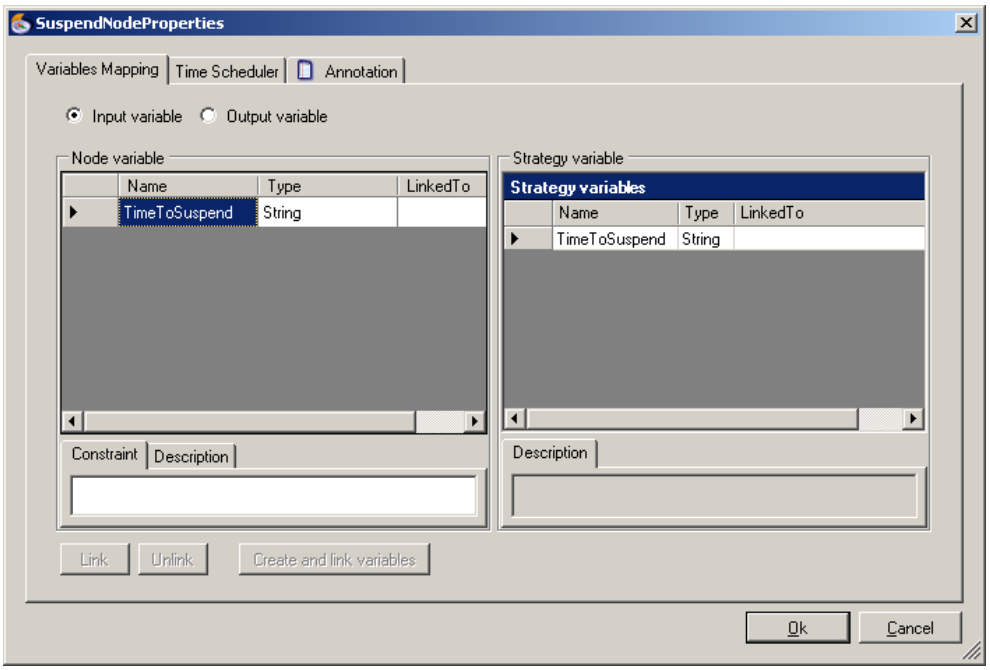


Figure 3-77: The Variable Mapping tab of the *Properties of Suspend Node* dialog box

3. Select the **Annotation** tab.

The **Annotation** tab is displayed:

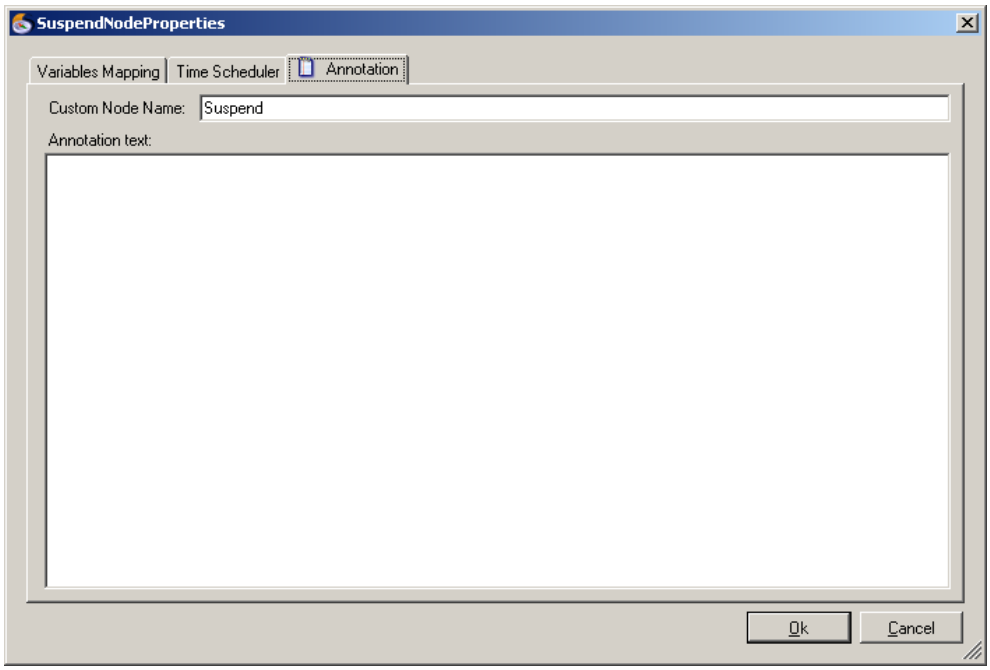


Figure 3-78: Annotation tab

4. In the **Custom Node Name** box, enter a custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

Setting the breakpoint upon a node makes it possible to stop the simulation of the strategy on that node. To learn more about the step-by-step simulation of strategies, see *Strategy Execution Simulation*, page *190*.

To set the breakpoint:

1. In the visual editor area, select the required node.

2. Right-click the selected node.

The drop-down menu is displayed:

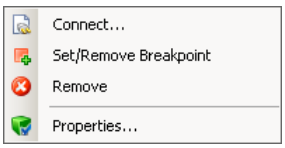


Figure 3-79: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the node with the breakpoint.

Figure 3-80: Breakpoint graphic indication

The breakpoint is successfully set.

Segmentation Node

The Segmentation node is a node that is included in the standard Scorto Strategy Maven package.

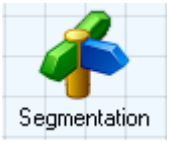


Figure 3-81: Segmentation node in visual editor

Node Description

The Segmentation node is intended for optimizing the process of strategy execution. The segmentation node enables the user to set an unlimited number of conditions; the strategy will be processed according to the first condition that evaluates to TRUE.

Adding Segments

The section describes the procedure of adding segments to the Segmentation node properties.

To add a segment:

1. Drag and drop the node into the visual editor area.
2. In the visual editor area, right-click the added node.

The drop-down menu is displayed:

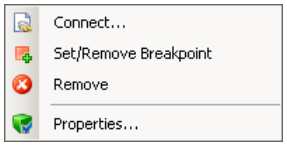


Figure 3-82: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The **Segments** tab of the *Segmentation Properties Form* dialog box is displayed:

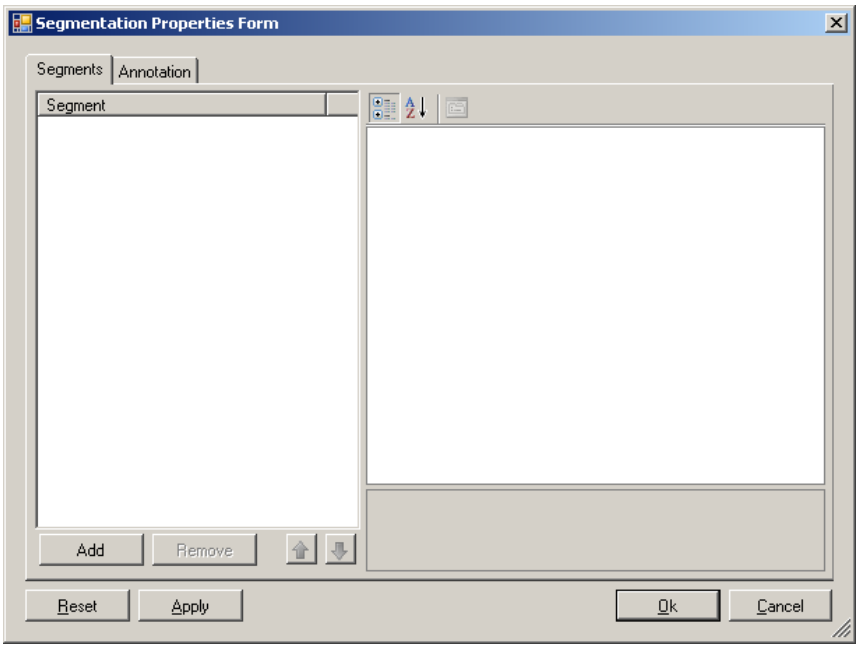


Figure 3-83: The Segments tab of the *Segmentation Properties Form* dialog box

4. On the **Segments** tab, click **Add**.

A new segment is added:

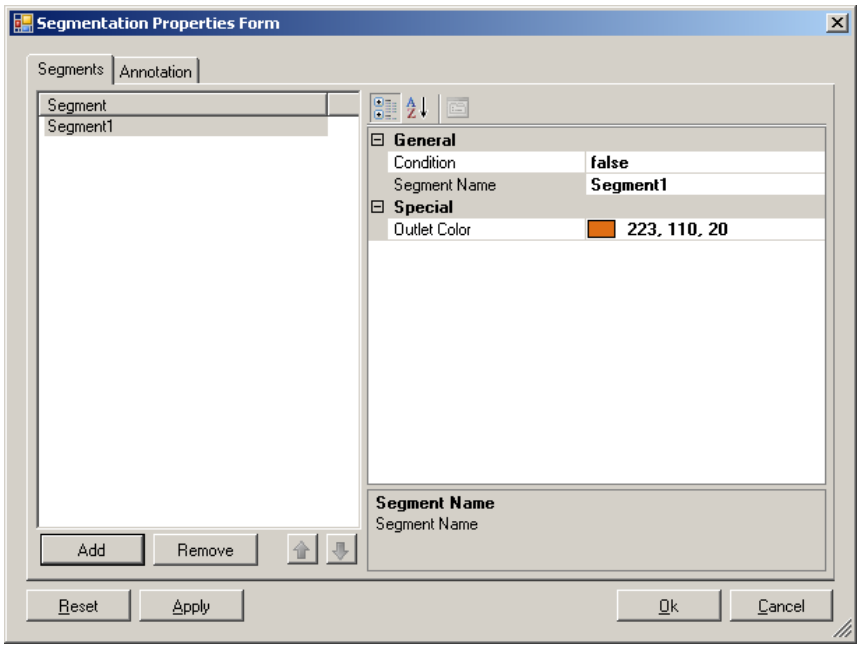


Figure 3-84: Adding a new segment

5. (*Optional*) In the right-hand side of the **Segments** tab, in the **Segment Name** box, enter a name for the segment.

Note: *The name of the segment must meet the following requirements:*

- *The name must contain no more than 50 characters;*
- *The name is not case-sensitive;*
- *The name must not contain special characters;*
- *The first character of the segment name must be a letter;*

- *The segment name must be unique within the node.*

6. (*Optional*) In the **Condition** box, click .

The *Condition Editor* dialog box is displayed:

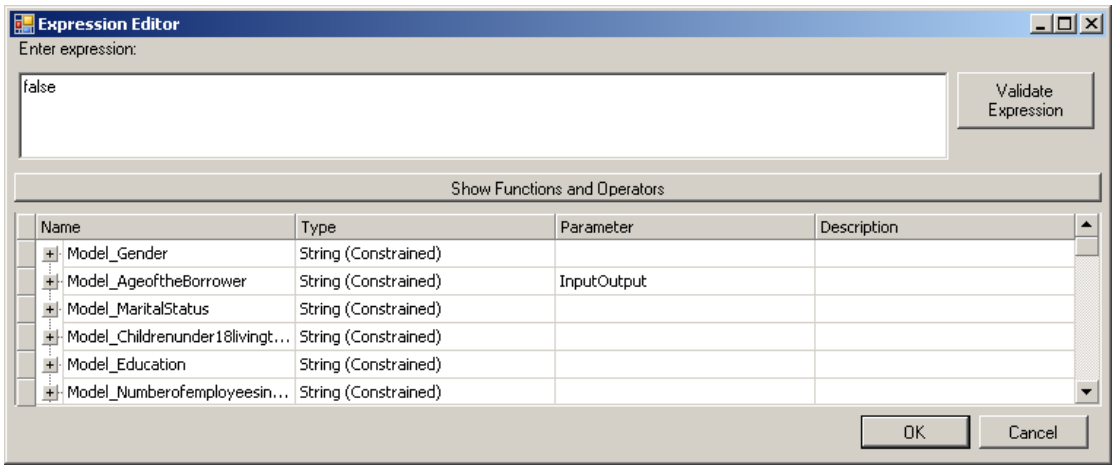


Figure 3-85: *Condition Editor* dialog box

7. (*Optional*) To access mathematical functions and operators, in the *Condition Editor* dialog box, click **Show Functions and Operators**.
8. In the Enter **expression** box, enter a condition for the segment using available variables and, if required, mathematical functions and operators.
9. (*Optional*) To validate the entered condition, click **Validate expression**.

If the entered expression is not correct, the following error message is displayed:

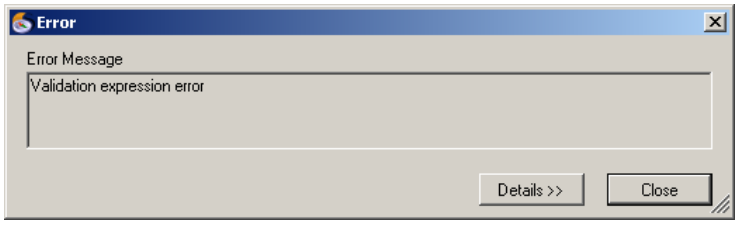


Figure 3-86: Expression validation error message

10. (*Optional*) To view detailed information on the error that occurred during the expression validation, click **Details**.
11. (*Optional*) Correct the condition as appropriate and try again.

If the entered condition is correct, the following confirmation is displayed:

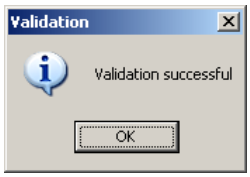


Figure 3-87: Confirmation that the condition is valid

12. In the *Condition Editor* dialog box, click **OK**.

The entered condition is displayed in the **Condition** box in the right-side area of the *Segmentation Properties Form*:

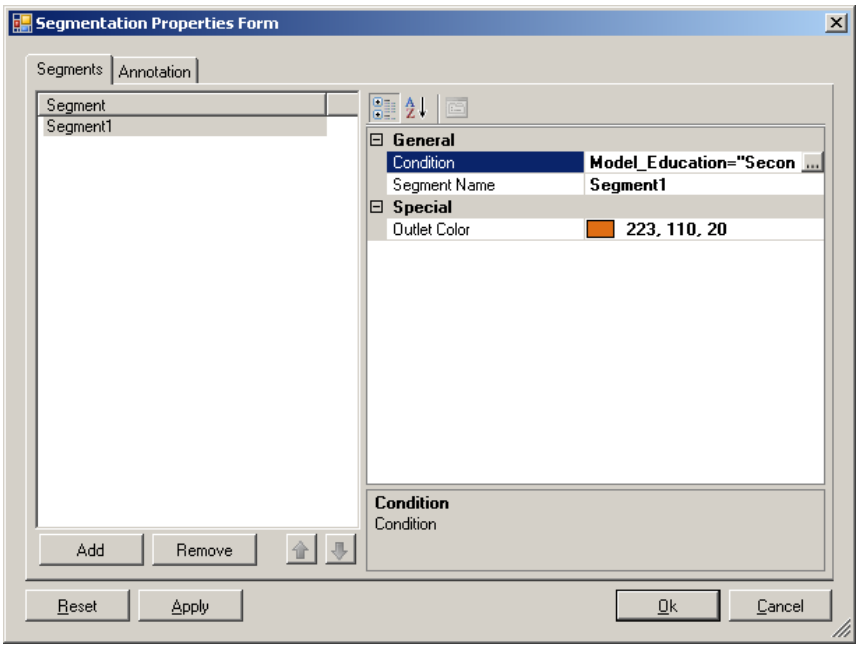


Figure 3-88: Condition for the segment is successfully added

13. (*Optional*) In the **Outlet color** box, from the drop-down menu, select the required outlet color for the added segment.
14. (*Optional*) Repeat the procedure to add other required segments.
15. After all required segments have been added, click **Ready.**

The segment is successfully added to the segmentation node.

Editing Segment Parameters

This section describes the procedure for editing the parameters of segments in the Segmentation node.

To edit the parameters of a segment:

1. In the visual editor area, right-click the node.

The drop-down menu is displayed:

Figure 3-89: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Segments** tab of the *Segmentation Properties Form* dialog box is displayed:

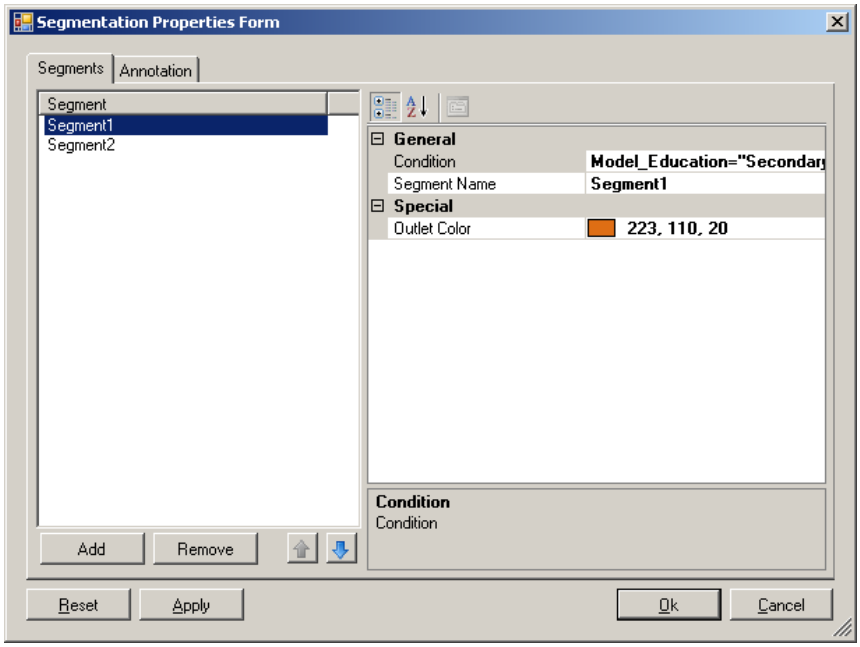


Figure 3-90: *Segmentation Properties Form* dialog box

3. In the **Segment** area, select the segment whose parameters should be edited.
4. Repeat steps 5-13 of the procedure described in section *Adding Segments*, page *76*.

The parameters of the selected segment are successfully changed.

Changing the Order of Condition Checks

This section describes the procedure for changing the order in which conditions in the segmentation node are checked.

The condition check order depends upon the sequence, in which segments are displayed on the **Segments** tab in the **Segment** area.

Conditions that are set for the segments are checked as follows: the condition of the uppermost segment is checked first; the condition of the lowermost segment is checked last.

The strategy will be processed according to the condition that is the first to be met (to be TRUE).

The user can change the order of condition checks by executing the procedure described below.

To change the condition check order:

1. In the visual editor area, right-click the node.

The drop-down menu is displayed:

Figure 3-91: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Segments** tab of the *Segmentation Properties Form* dialog box is displayed:

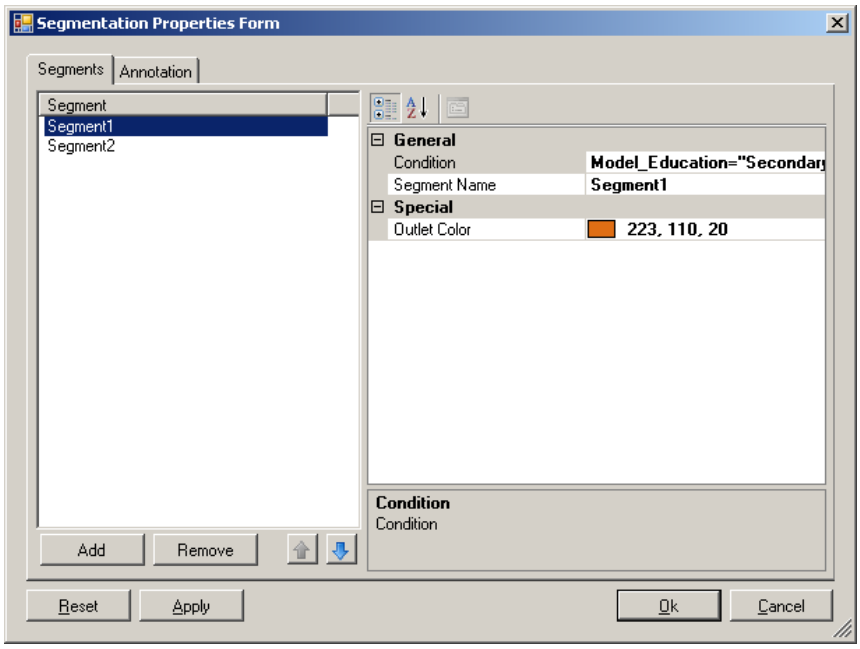


Figure 3-92: *Segmentation Properties Form* dialog box

3. Using the and buttons, change the sequence of the segments in the **Segment** window.
4. Click **OK**.

The condition check order is successfully changed.

Deleting Segments

This section describes the procedure for deleting segments in the Segmentation node.

To delete a segment:

1. In the visual editor area, right-click the node.

The drop-down menu is displayed:

Figure 3-93: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Segments** tab of the *Segmentation Properties Form* dialog box is displayed:

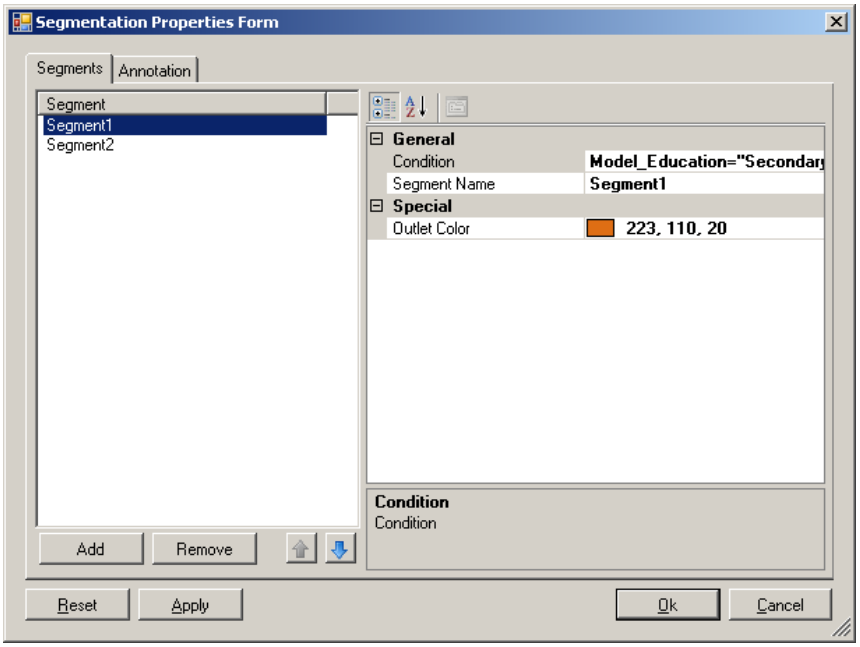


Figure 3-94: *Segmentation Properties Form* dialog box

3. In the **Gradations** area, select the grade that must be deleted.
4. Click **Remove**.

The selected grade is successfully deleted.

Other Properties

This section explains how to set a custom name for the Segmentation node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. In the visual editor area, right-click the node.

The drop-down menu is displayed:

Figure 3-95: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Segments** tab of the *Segmentation Properties Form* dialog box is displayed:

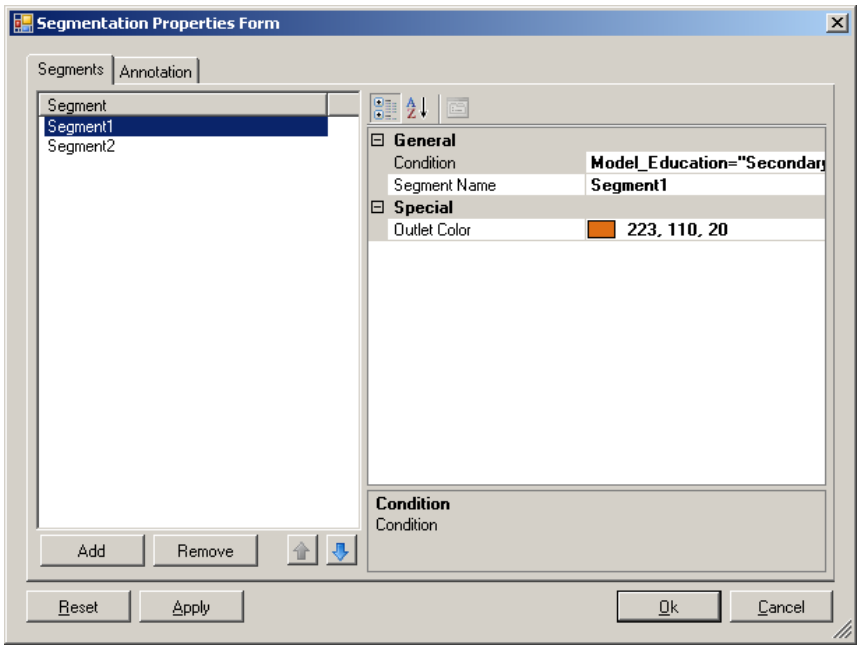


Figure 3-96: *Segmentation Properties Form* dialog box

3. Navigate to the **Annotation** tab.

The **Annotation** tab of the *Segmentation Properties Form* dialog box is displayed:

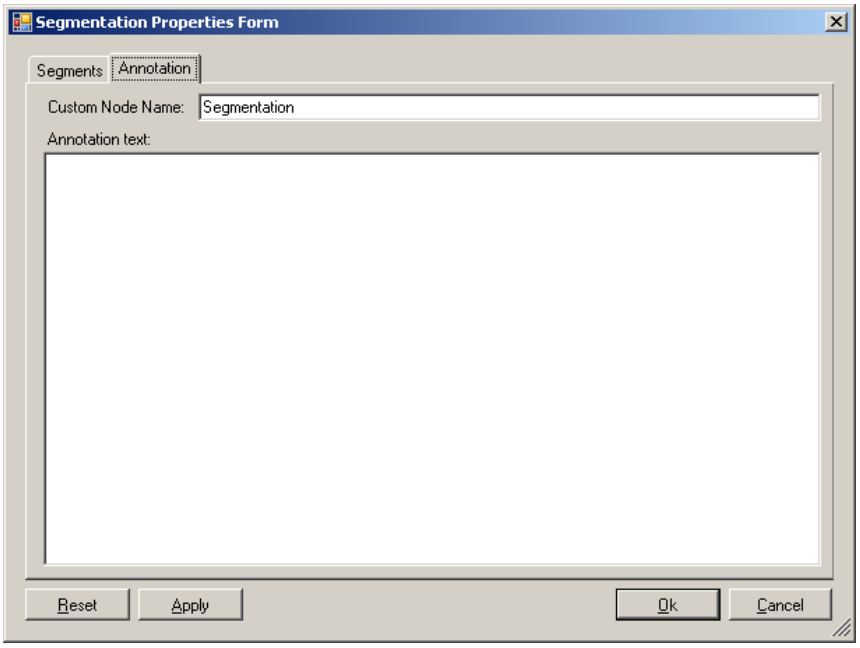


Figure 3-97: The Annotation tab of the *Segmentation Properties Form* dialog box

4. In the **Custom Node Name** box, enter a new custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

To set the breakpoint:

1. In the visual editor area, select the required node.
2. Right-click the selected node.

The drop-down menu is displayed:

Figure 3-98: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the node with the breakpoint.

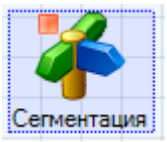


Figure 3-99: Breakpoint graphic indication

The breakpoint is successfully set.

Probability of Default Node

The Probability of Default Node (PD) node is a node that is included in the standard Scorto Strategy Maven package.

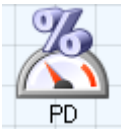


Figure 3-100: PD node in the visual editor

Node Description

The Probability of Default (PD) node is used to calculate the borrower's probability of default using a pre-set formula.

Setting the Expression for Probability of Default Calculation

This section describes the procedure for setting the expression for probability of default calculation in the

Probability of Default node of the Scorto Strategy Maven application.

To set the expression for probability of default calculation:

1. Drag and drop the PD (Probability of Default Node) node into the visual editor area.
2. Right-click the selected node.

The drop-down menu is displayed:

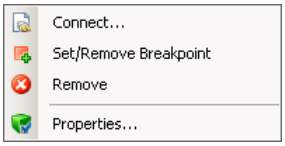


Figure 3-101: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The **Expression** tab of the *Properties of PD* is displayed:

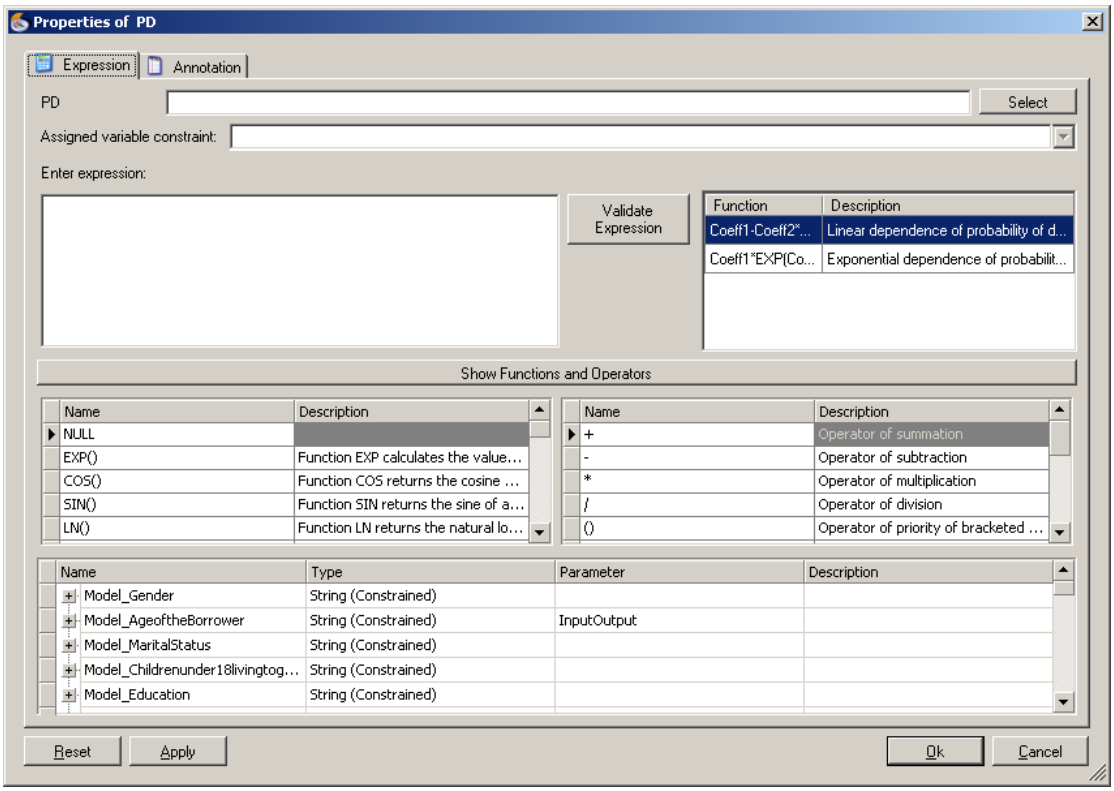


Figure 3-102: *Properties of PD* dialog box

4. On the right of the **PD** box, click **Select**.

The *Strategy variables* dialog box is displayed:

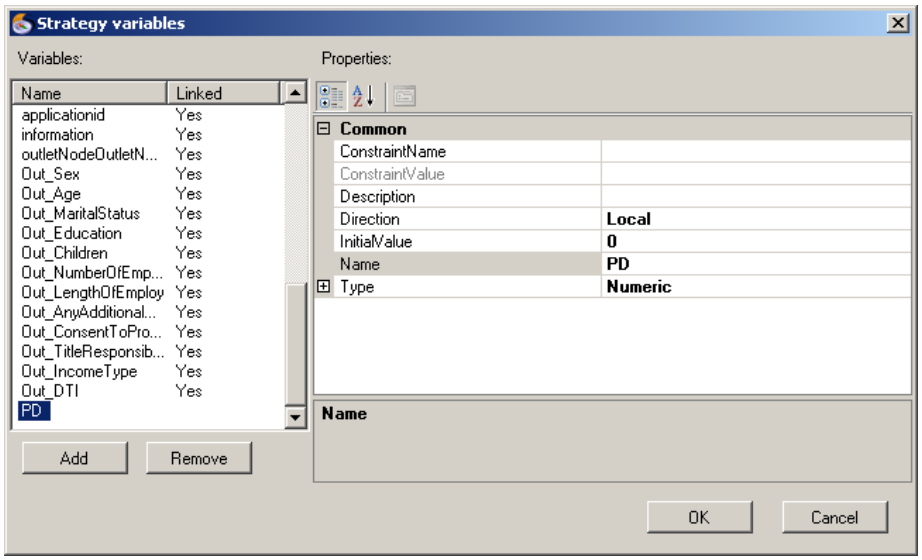


Figure 3-103: Strategy Variables *dialog box*

5. Select the required strategy variable.

Note: *When selecting a variable, make sure that the selected variable is of the numeric type.*

6. Click **OK**.

The selected variable is displayed in the PD box:

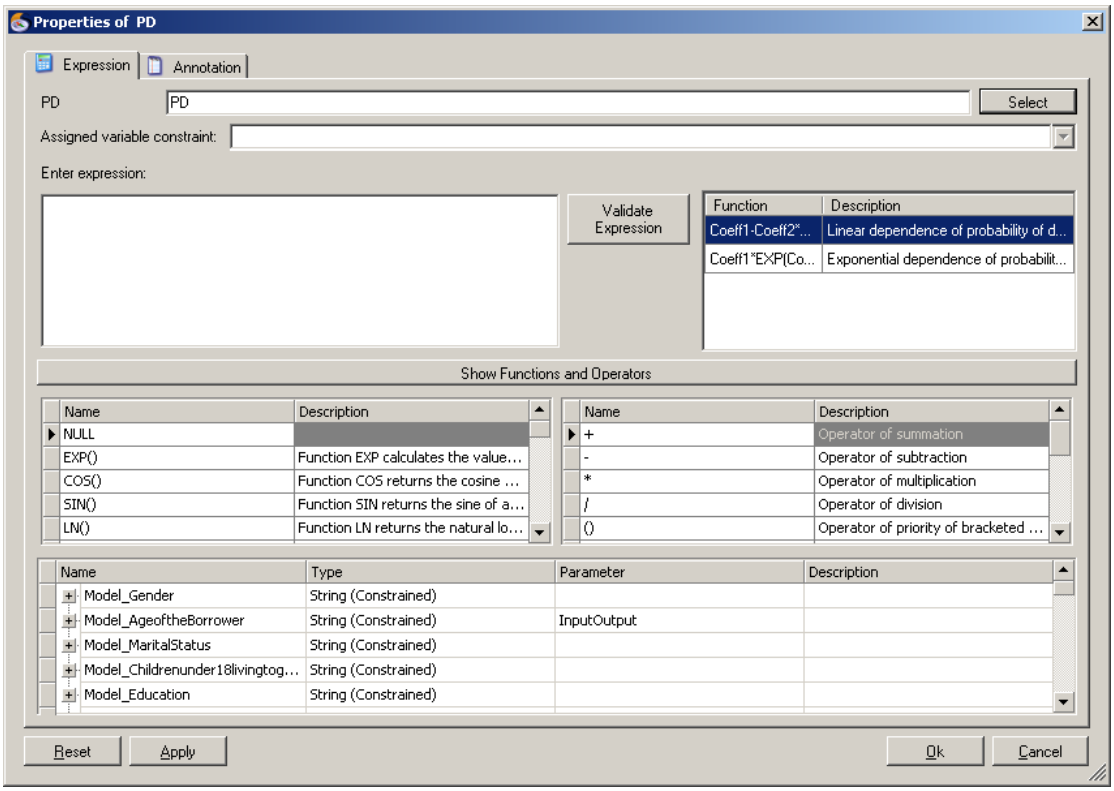


Figure 3-104: Selected variable is displayed in PD box

Note: *If the selected variable has constraints, the values of the constraints are displayed in* ***Assigned variable constraint.***

7. On the right from the **Validate expression** button, double-click to select the required formula for calculation.

The selected formula is displayed in the **Enter expression** box:

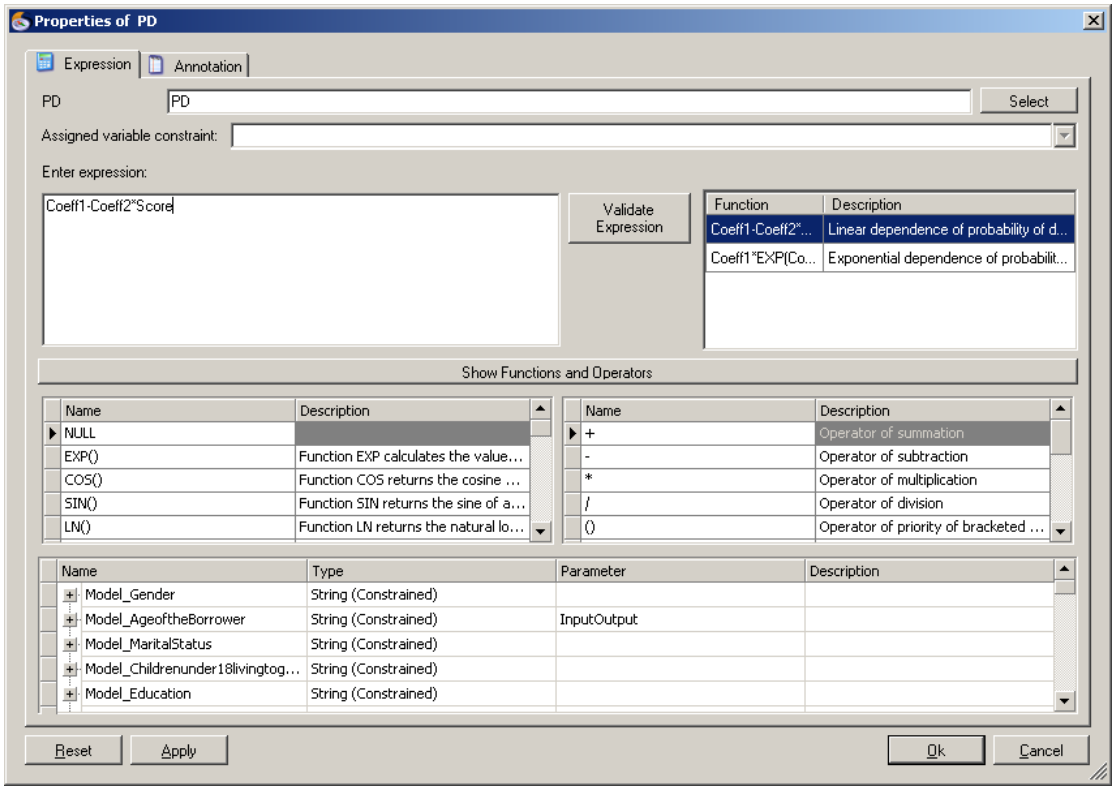


Figure 3-105: Formula selected for calculation

8. (*Optional*) To use additional mathematical functions and/or operators in the expression, click **Show functions and operators** and select the required functions and/or operator.

9. (*Optional*) If the Coeff1, Coeff2 and/or Score variables are not defined in the strategy, define them using the variables that are displayed in the bottom right side of the dialog box. For example, to define the Coeff1 variable, in the **Enter expression** box enter the Coeff1 variable, and then double-click to select the required strategy variable from the variables displayed in the bottom right side of the dialog box.

10. (*Optional*) To validate the entered expression, click **Validate expression**.

If the entered expression is incorrect, the following message is displayed:

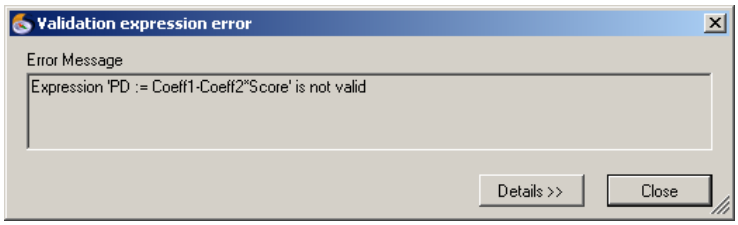


Figure 3-106: Error message

11. (*Optional*) Click **Close** correct the entered expression as appropriate and try again.

If the entered expression is correct, the following confirmation is displayed:

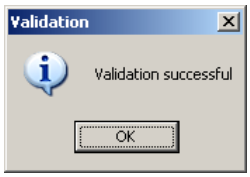


Figure 3-107: Confirmation that the expression is valid

12. (*Optional*) Click **OK**.
13. In the *Properties of PD* dialog box, click **Apply**.
14. Click **OK**.

The expression for probability of default calculation is successfully entered.

Other Properties

This section explains how to set a custom name for the Probability of Default Node (PD) node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. In the visual editor area, right-click the Probability of Default (PD) Node.

The drop-down menu is displayed:

Figure 3-108: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Expression** tab of the *Properties of PD* is displayed:

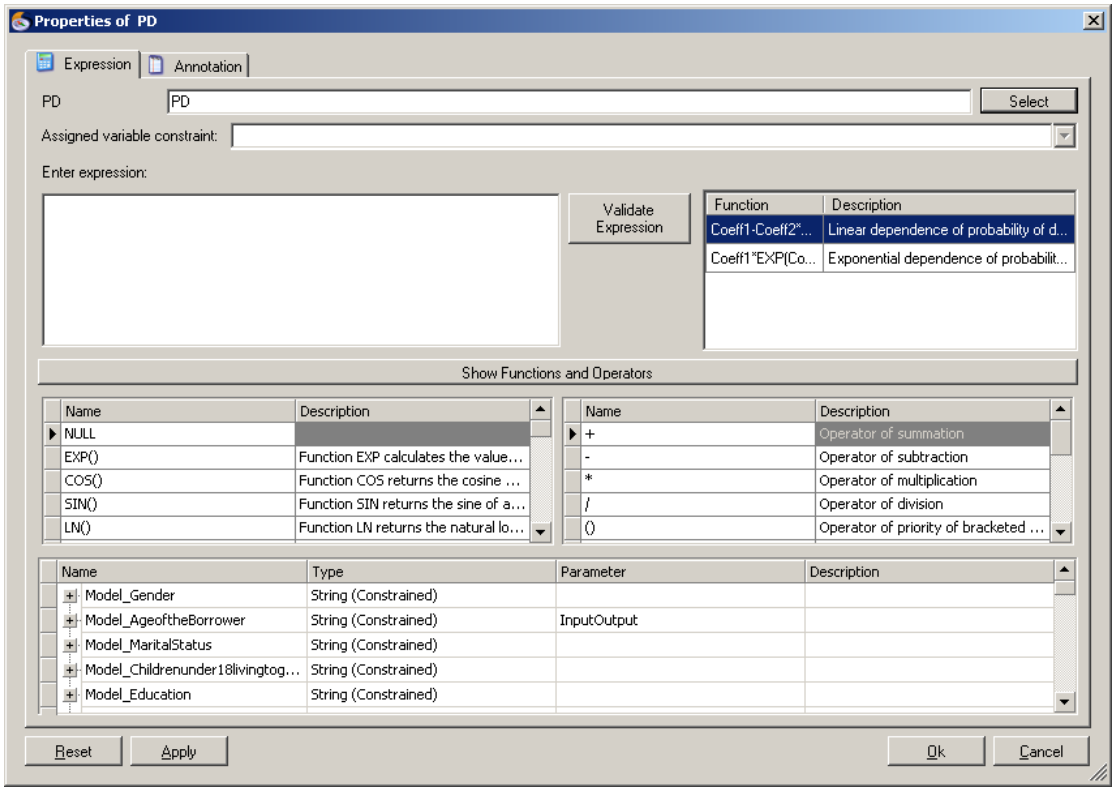


Figure 3-109: *Properties of PD* dialog box

3. Navigate to the **Annotation** tab.

The **Annotation** tab of the *Properties of PD* is displayed:

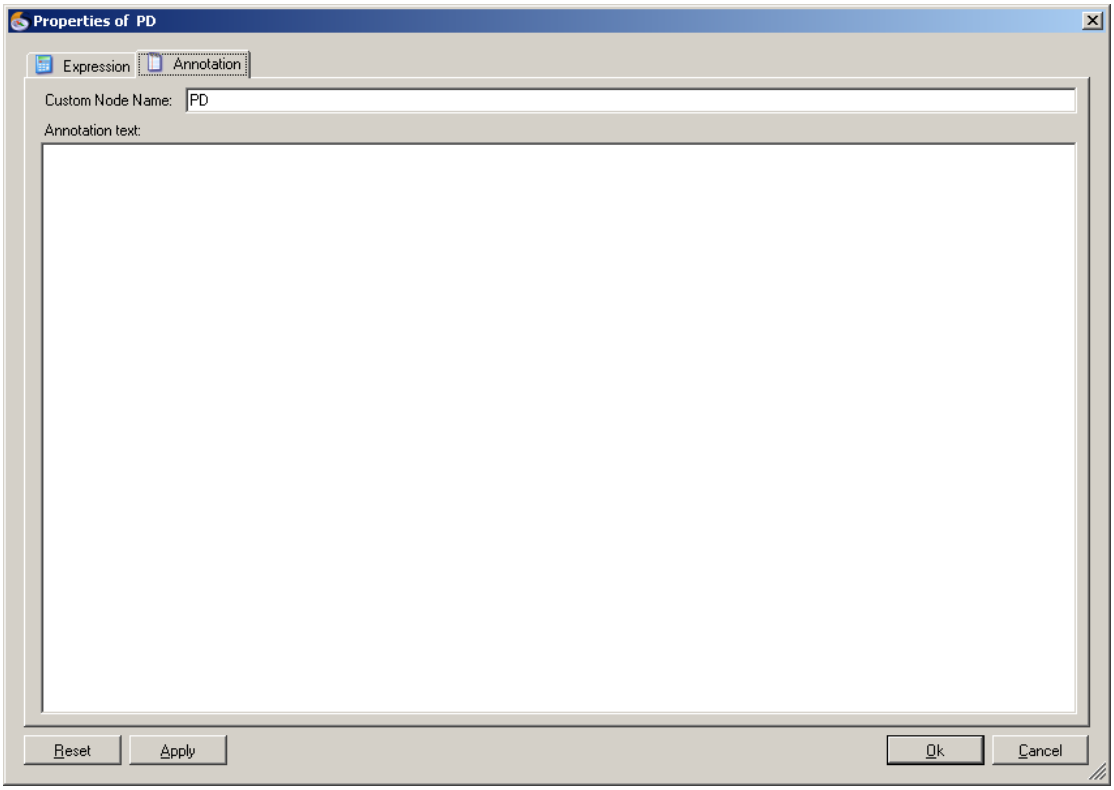


Figure 3-110: Annotation tab

4. In the **Custom Node Name** box, enter a new custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

To set the breakpoint:

1. In the visual editor area, select the Probability of Default (PD) Node.
2. Right-click the selected node.

The drop-down menu is displayed:

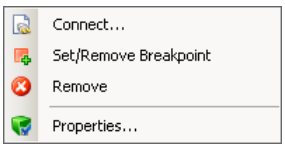


Figure 3-111: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the Probability of Default Node (PD) node with the breakpoint:

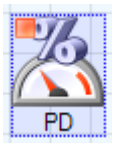


Figure 3-112: Breakpoint graphic indication

The breakpoint is successfully set.

Profit Node

The Profit node is a node that is included in the standard Scorto Strategy Maven package.

Node Description

The Profit node is used to calculate the profitability of a loan deal using a set of pre-defined formulas.

Figure 3-113: Profit node in the visual editor

Setting the Expression for Loan Deal Profitability Calculation

This section describes the procedure for setting the expression for loan deal profitability calculation in the Profit node of the Scorto Strategy Maven application.

To set the expression for loan deal profitability calculation:

1. Drag and drop the Profit node into the visual editor area.
2. Right-click the selected node.

The drop-down menu is displayed:

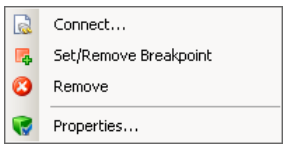


Figure 3-114: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The **Expression** tab of the *Properties of Profit* is displayed:

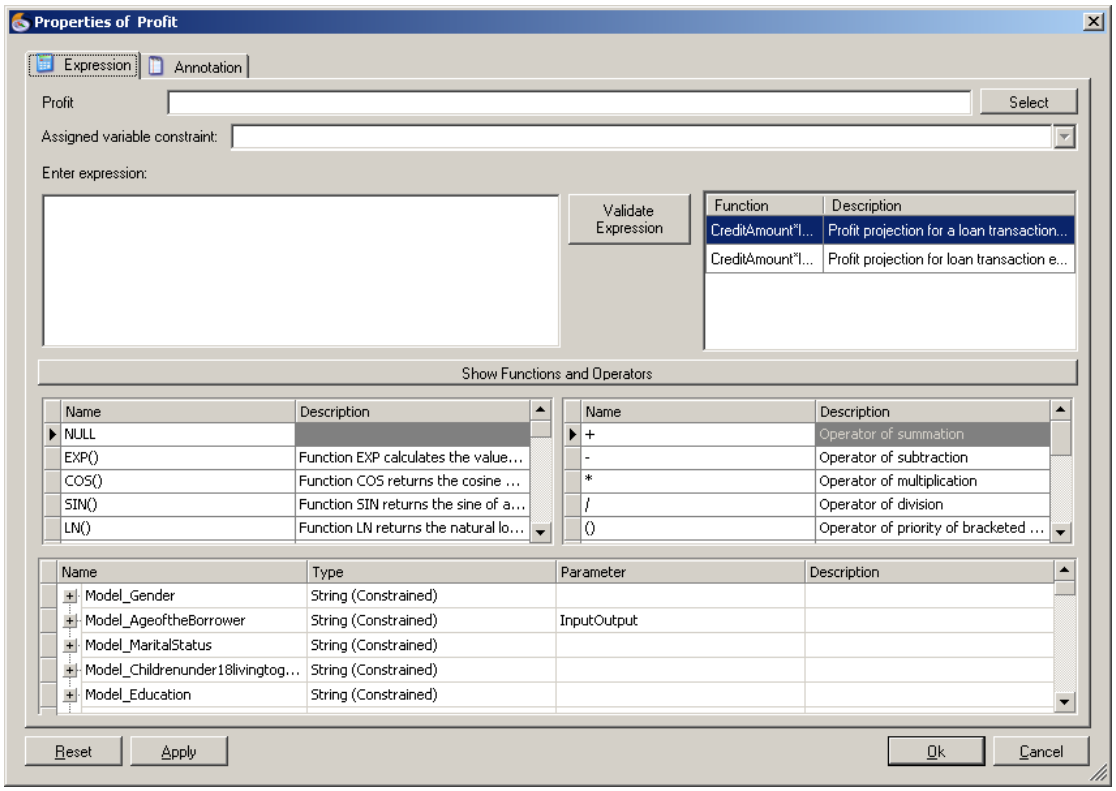


Figure 3-115: ***Properties of Profit dialog box***

4. On the right of the **Profit** box, click **Select**.

The *Strategy variables* dialog box is displayed:

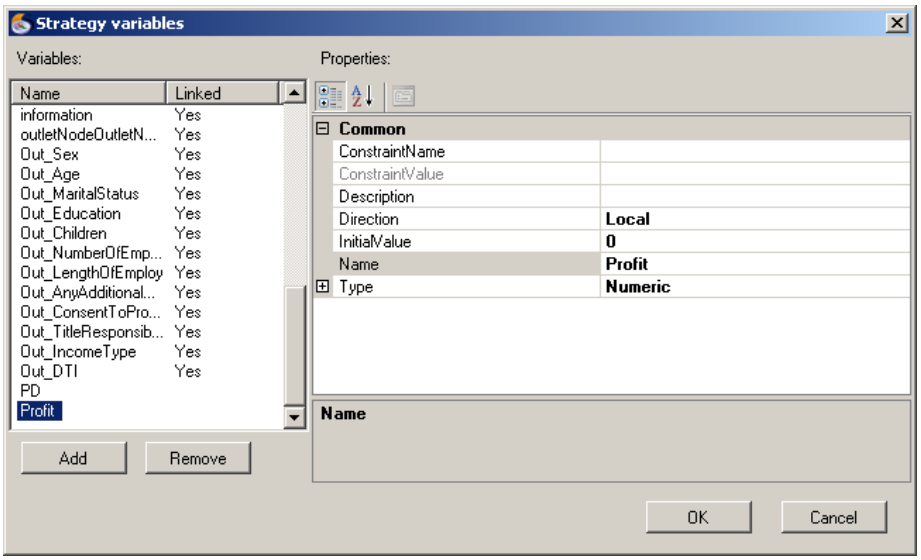


Figure 3-116: Strategy Variables *dialog box*

5. Select the required strategy variable.

Note: *When selecting a variable, make sure that the selected variable is of the numeric type.*

6. Click **OK**.

The selected variable is displayed in the Profit box:

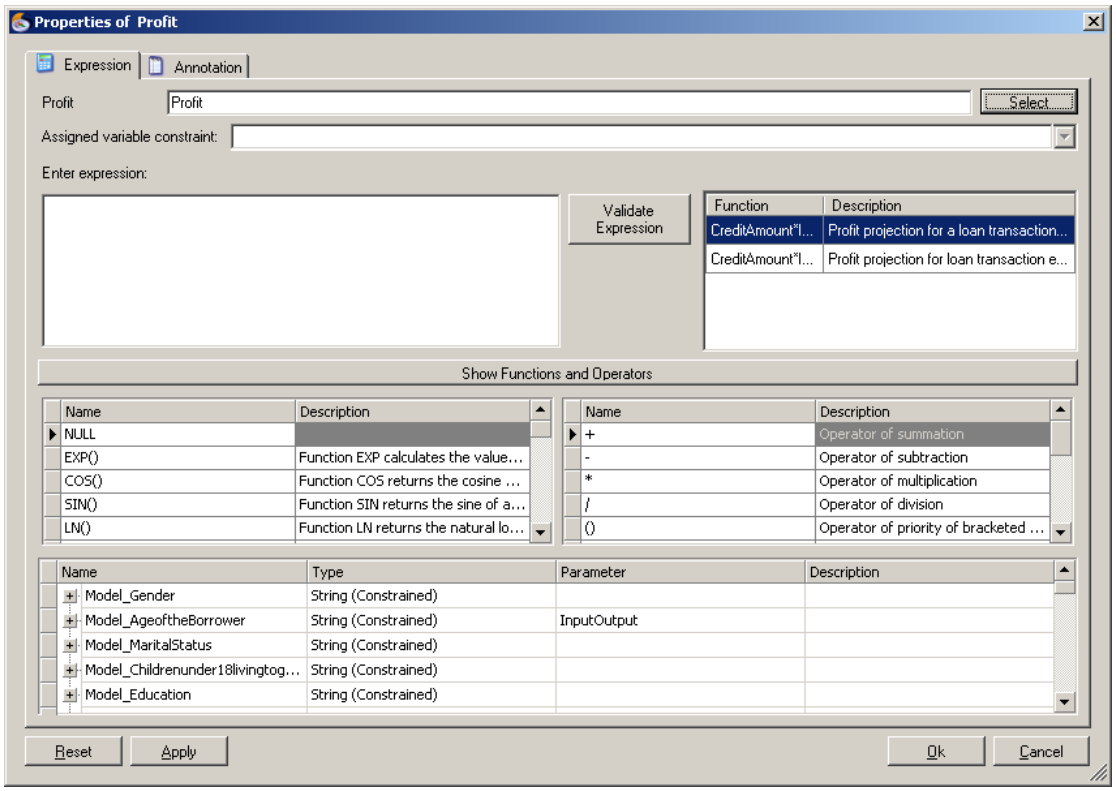


Figure 3-117: Selected variable is displayed in Profit box

Note: *If the selected variable has constraints, the values of the constraints are displayed in* ***Assigned variable constraint.***

7. On the right from the **Validate expression** button, double-click to select the required formula for calculation.

The selected formula is displayed in the **Enter expression** box:

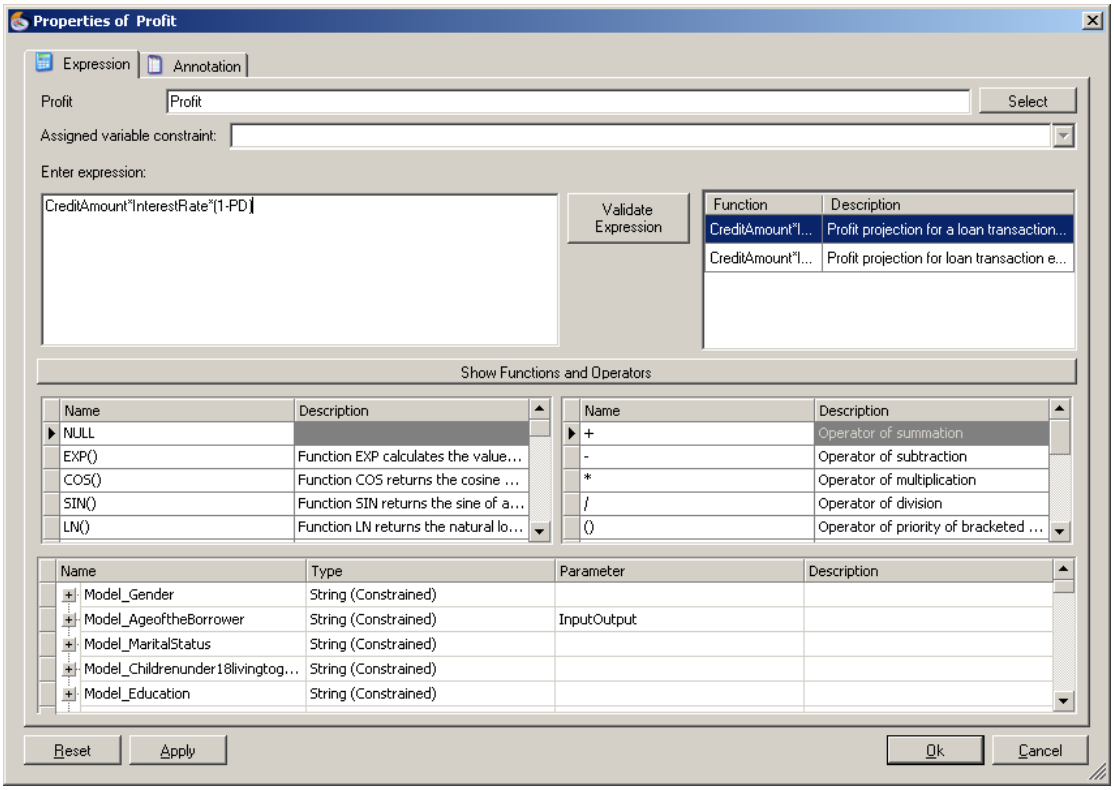


Figure 3-118: Formula selected for calculation

8. (*Optional*) To use additional mathematical functions and/or operators in the expression, click **Show functions and operators** and select the required functions and/or operator.

9. (*Optional*) If the formula variables are not defined in the strategy, define them using the variables that are displayed in the bottom right side of the dialog box. For example, to define the CreditAmount variable, in the **Enter expression** box enter the CreditAmount variable, and then double-click to select the required strategy variable from the variables displayed in the bottom right side of the dialog box.

10. (*Optional*) To validate the entered expression, click **Validate expression**.

If the entered expression is incorrect, the following message is displayed:

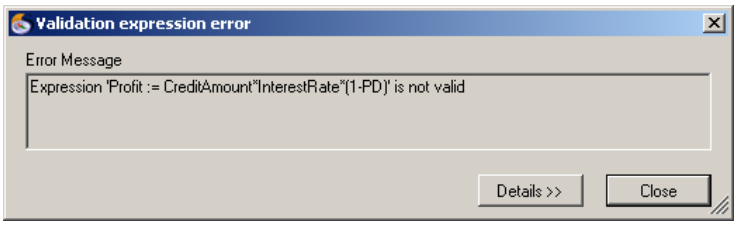


Figure 3-119: Error message

11. (*Optional*) Click **Close** to correct the entered expression as appropriate and try again.

If the entered expression is correct, the following confirmation is displayed:

Figure 3-120: Confirmation that the expression is valid

12. (*Optional*) Click **OK**.
13. In the *Properties of Profit* dialog box, click **Apply**.
14. Click **OK**.

The expression for loan unprofitability calculation is successfully set.

Other Properties

This section explains how to set a custom name for the Profit node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. In the visual editor area, right-click the Profit node.

The drop-down menu is displayed:

Figure 3-121: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Expression** tab of the *Properties of Profit* is displayed:

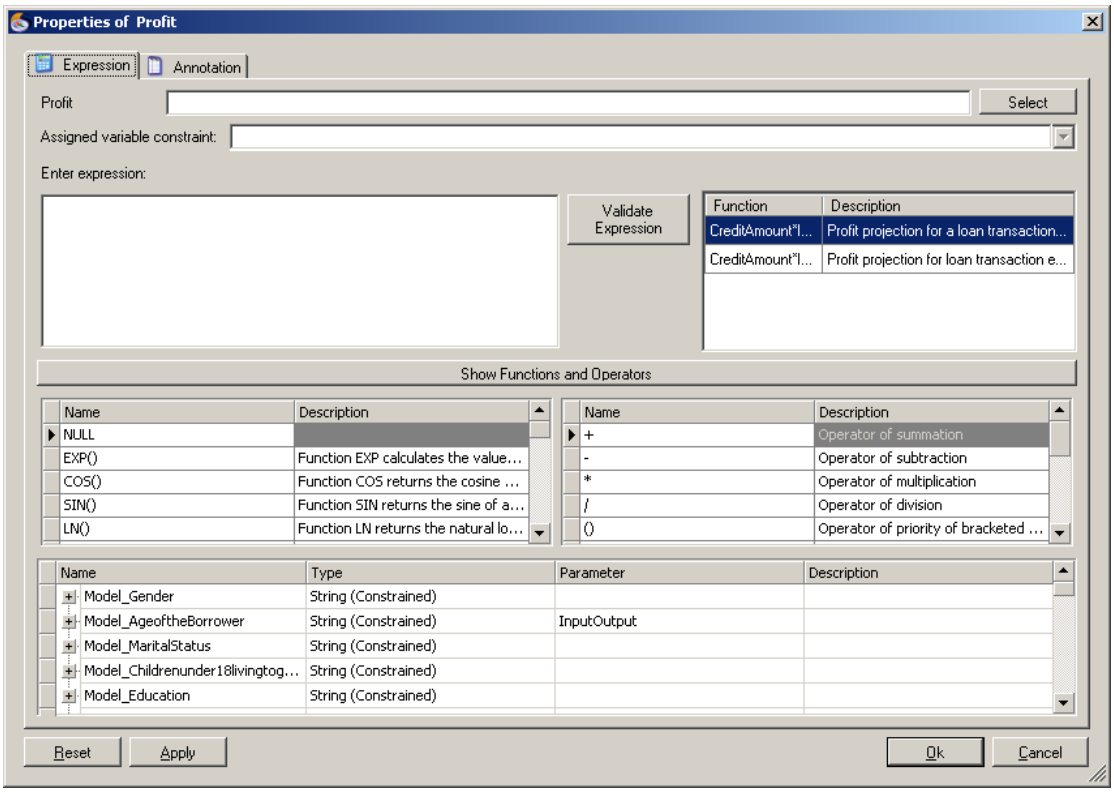


Figure 3-122: *Properties of Profit* dialog box

3. Navigate to the **Annotation** tab.

The **Annotation** tab of the *Properties of Profit* is displayed:

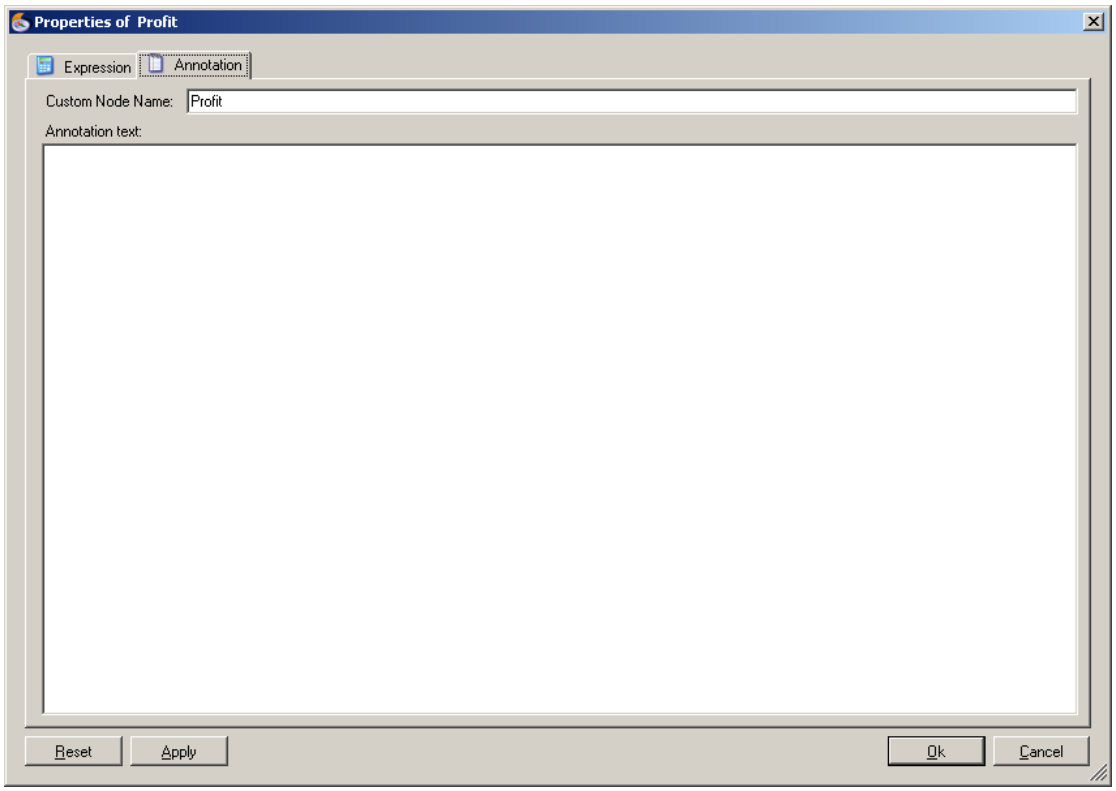


Figure 3-123: Annotation tab

4. In the **Custom Node Name** box, enter a new custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

To set the breakpoint:

1. In the visual editor area, select the Profit node.
2. Right-click the selected node.

The drop-down menu is displayed:

Figure 3-124: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the Profit node with the breakpoint.

Figure 3-125: Breakpoint graphic indication

The breakpoint is successfully set.

Loss Node

The Loss node is a node that is included in the standard Scorto Strategy Maven package.

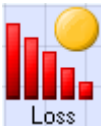


Figure 3-126: Loss node in the visual editor

Node Description

The Loss node is used to calculate the unprofitability of a loan deal using a set of pre-defined formulas.

Setting the Expression for Loan Deal Unprofitability Calculation

This section describes the procedure for setting the expression for loan deal unprofitability calculation in the Loss node of the Scorto Strategy Maven application.

To set the expression for loan deal unprofitability calculation:

1. Drag and drop the Loss node into the visual editor area.
2. Right-click the selected node.

The drop-down menu is displayed:

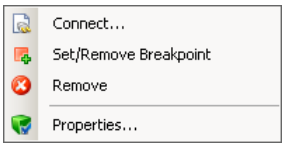


Figure 3-127: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The **Expression** tab of the *Properties of Loss* is displayed:

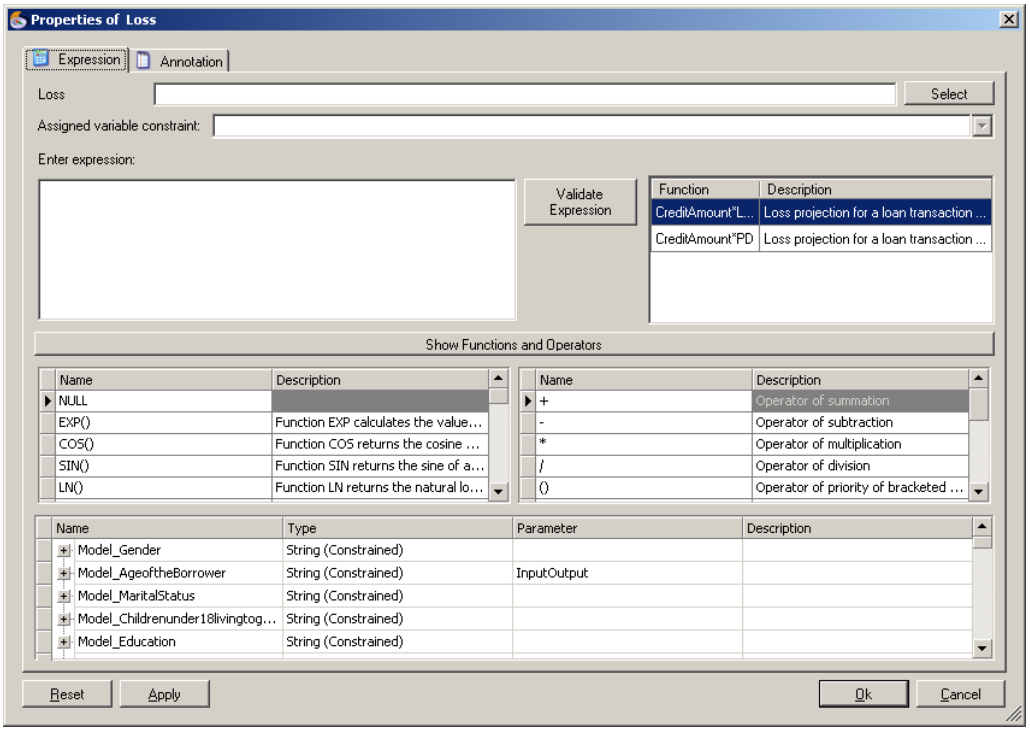


Figure 3-128: ***Properties of Loss dialog box***

4. On the right of the **Loss** box, click **Select**.

The *Strategy variables* dialog box is displayed:

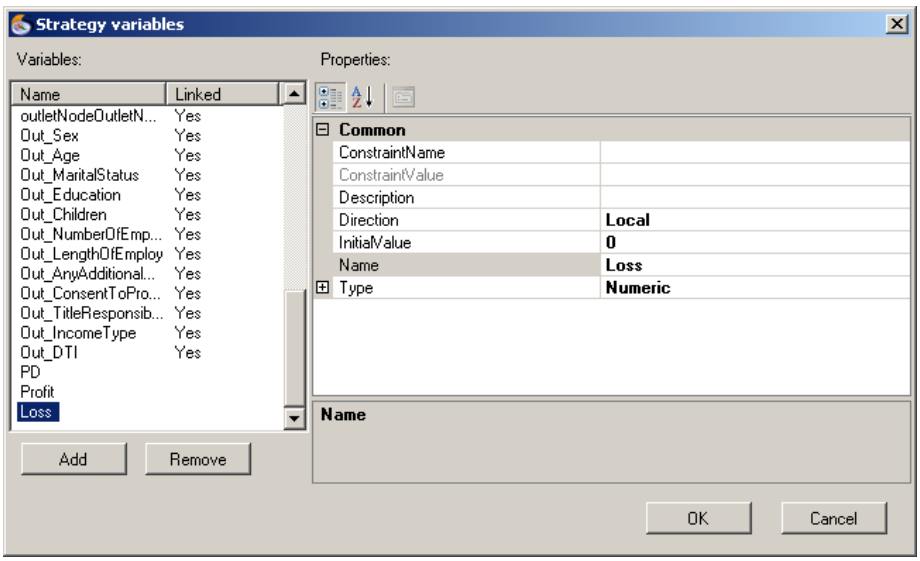


Figure 3-129: Strategy Variables *dialog box*

5. Select the required strategy variable.

Note: *When selecting a variable, make sure that the selected variable is of the numeric type.*

6. Click **OK**.

The selected variable is displayed in the Loss box:

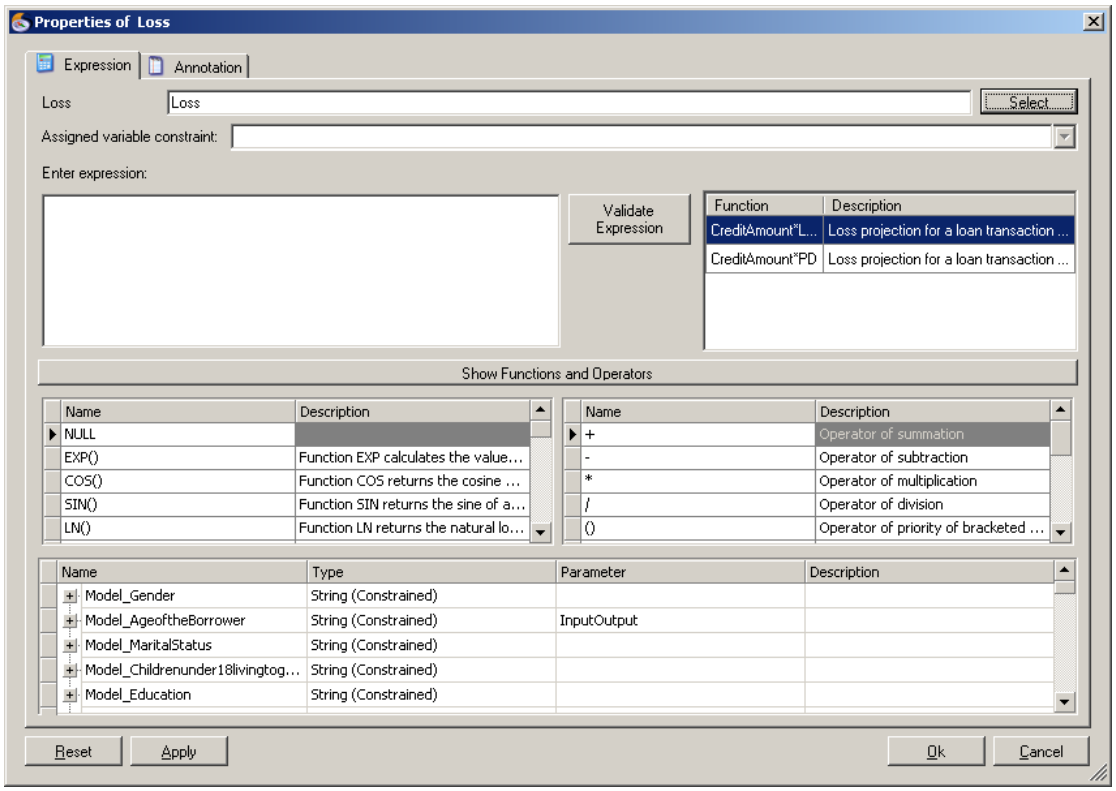


Figure 3-130: Selected variable is displayed in Loss box

Note: *If the selected variable has constraints, the values of the constraints are displayed in* ***Assigned variable constraint.***

7. On the right from the **Validate expression** button, double-click to select the required formula for calculation.

The selected formula is displayed in the **Enter expression** box:

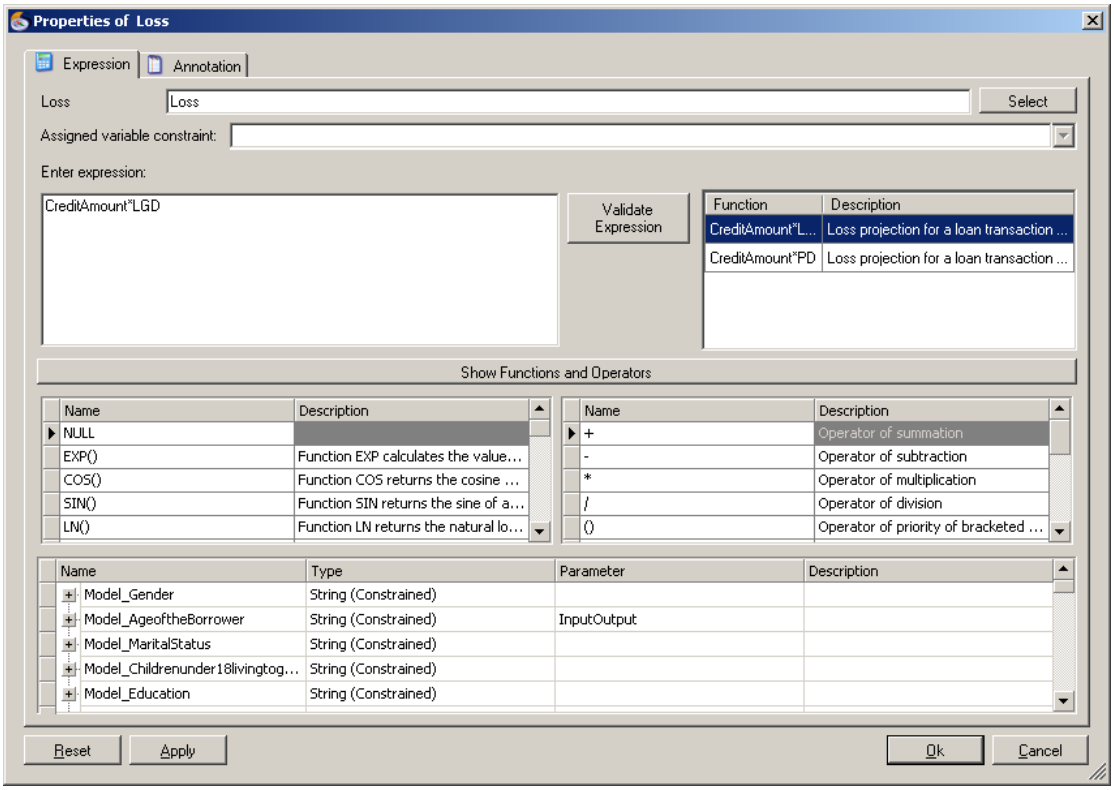


Figure 3-131: Formula selected for calculation

8. (*Optional*) To use additional mathematical functions and/or operators in the expression, click **Show functions and operators** and select the required functions and/or operator.

9. (*Optional*) If the formula variables are not defined in the strategy, define them using the variables that are displayed in the bottom right side of the dialog box. For example, to define the CreditAmount variable, in the **Enter expression** box enter the CreditAmount variable, and then double-click to select the required strategy variable from the variables displayed in the bottom right side of the dialog box.

10. (*Optional*) To validate the entered expression, click **Validate expression**.

If the entered expression is incorrect, the following message is displayed:

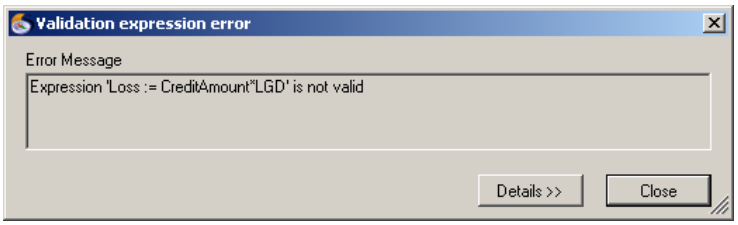


Figure 3-132: Error message

11. (*Optional*) Click **Close** to correct the entered expression as appropriate and try again.

If the entered expression is correct, the following confirmation is displayed:

Figure 3-133: Confirmation that the expression is valid

12. (*Optional*) Click **OK**.
13. In the *Properties of Loss* dialog box, click **Apply**.
14. Click **OK**.

The expression for loan unprofitability calculation is successfully set.

Other Properties

This section explains how to set a custom name for the Loss node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. In the visual editor area, right-click the Loss node.

The drop-down menu is displayed:

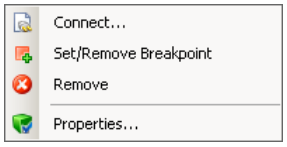


Figure 3-134: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Expression** tab of the *Properties of Loss* is displayed:

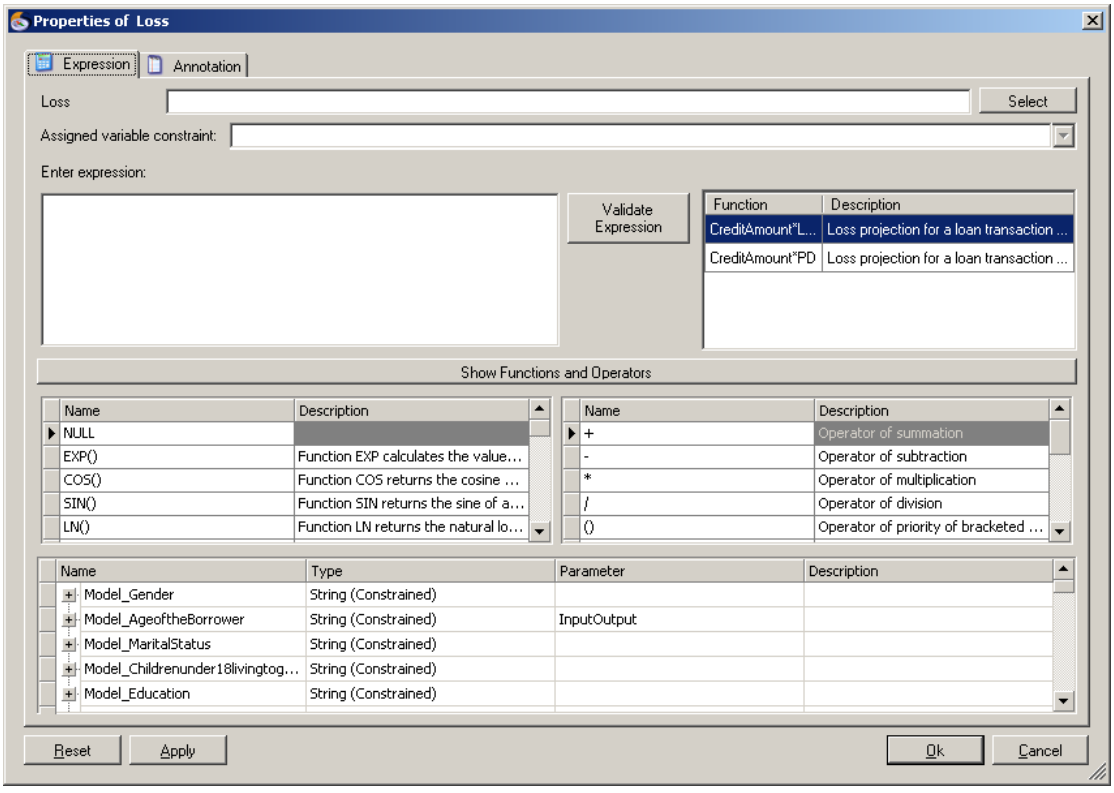


Figure 3-135: *Properties of Loss* dialog box

3. Navigate to the **Annotation** tab.

The **Annotation** tab of the *Properties of Loss* is displayed:

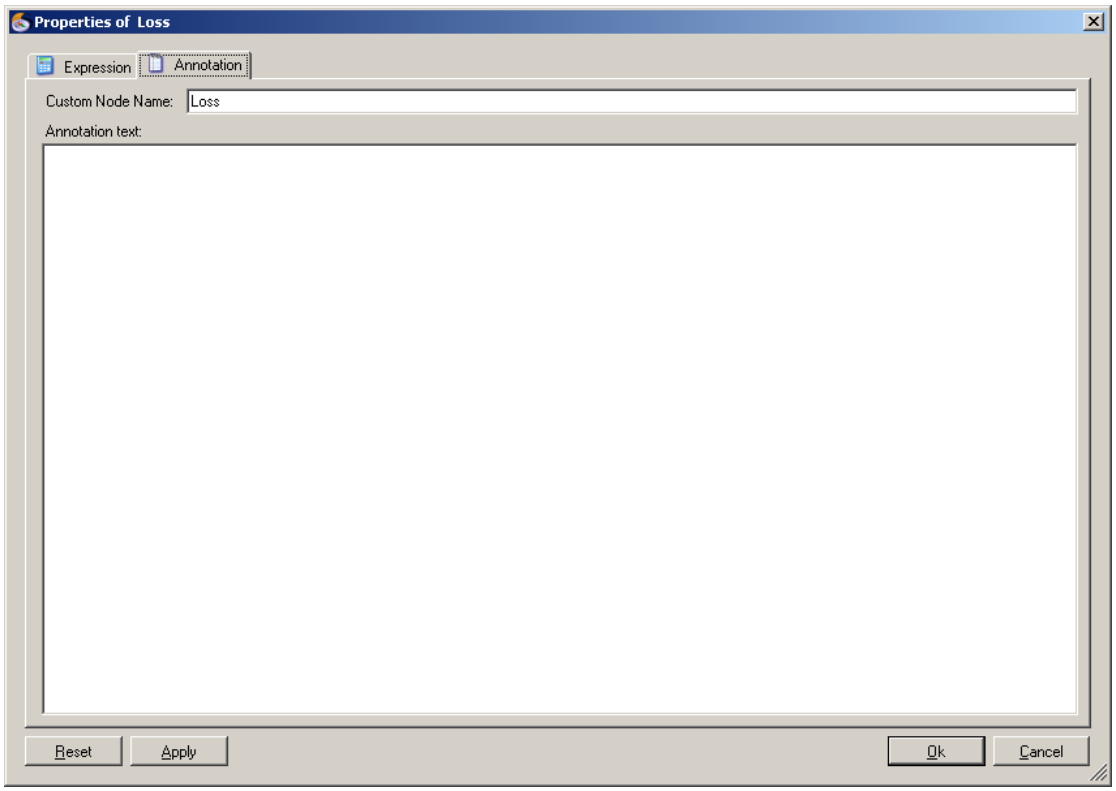


Figure 3-136: Annotation tab

4. In the **Custom Node Name** box, enter a new custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

To set the breakpoint:

4. In the visual editor area, select the Loss node.
5. Right-click the selected node.

The drop-down menu is displayed:

Figure 3-137: Drop-down menu

6. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the Loss node with the breakpoint.

Figure 3-138: Breakpoint graphic indication

The breakpoint is successfully set.

Discrete Value Node

The Discrete Value node is a node that is included in the standard Scorto Strategy Maven package.

Figure 3-139: Discrete Value node in the visual editor

Node Description

The Discrete Value node is used to transform the values of numeric variables into the values of string variables.

Adding Gradations

This section describes the procedure for adding gradations in the Discrete Value node.

To add a gradation:

1. Drag and drop the node into the visual editor area.
2. In the visual editor area, right-click the added node.

The drop-down menu is displayed:

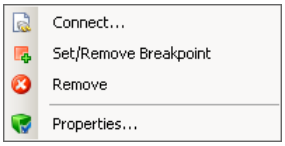


Figure 3-140: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The *Discrete Value Properties* dialog box is displayed:

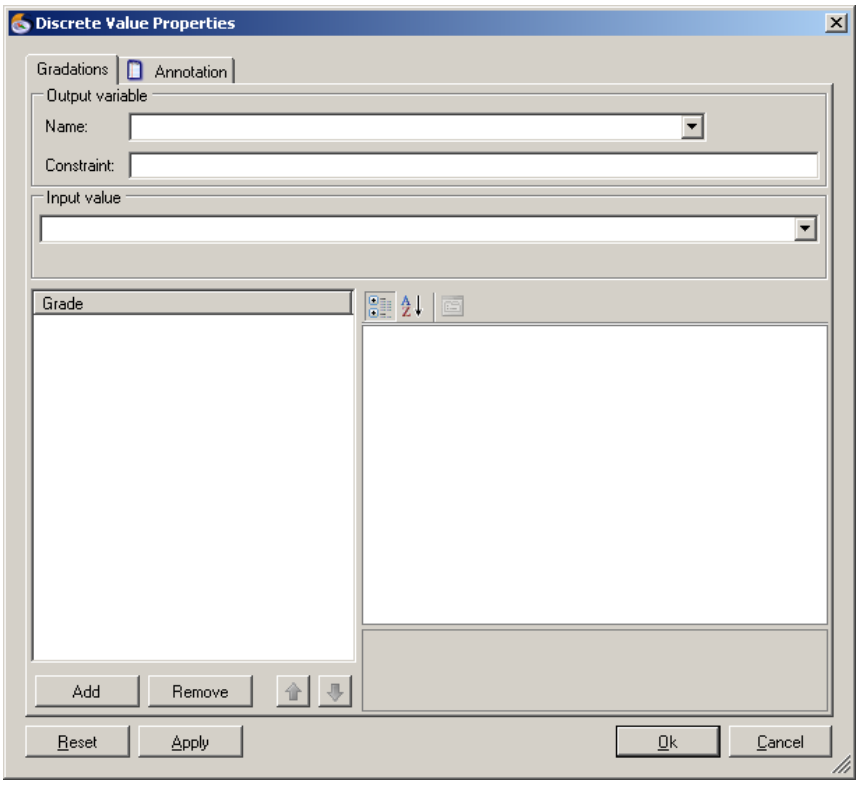


Figure 3-141: *Discrete Value Properties* dialog box

4. On the **Gradations** tab of the *Discrete Value Properties* dialog box, from the **Name** drop-down menu select the variable.

The selected string variable and its constraints are displayed:

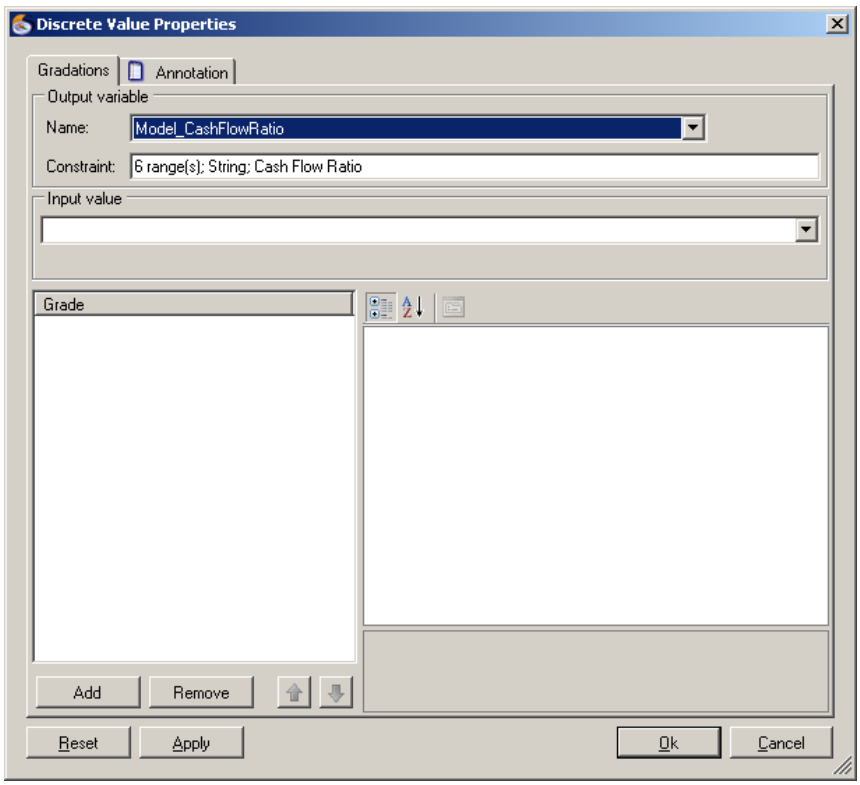


Figure 3-142: Output variable is added

5. From the **Output value** drop-down menu, select the required numeric variable, whose value must be converted into a string value.
6. In the **Grade** area, click **Add**.

The following boxes are displayed for grade parameters:

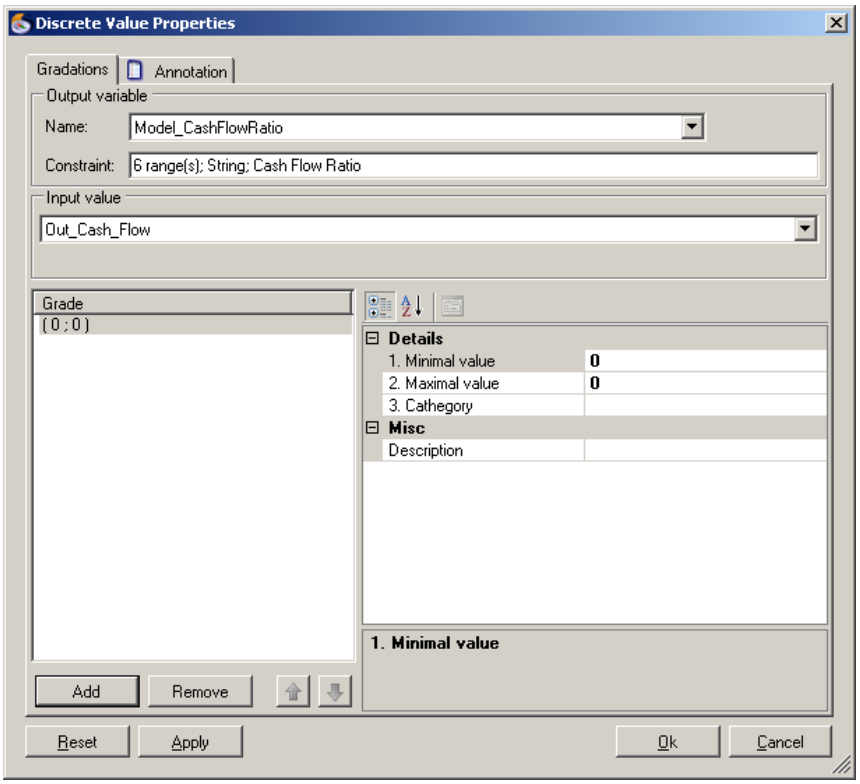


Figure 3-143: Boxes for grade parameters

7. In the **Minimal value** box enter the minimum value of the grade.
8. In the **Maximal value** box enter the maximum value of the grade.
9. From the drop-down menu in the Category box, select the variable constraint that corresponds to the given grade.
10. (*Optional*) In the **Description** box, enter the name for the current grade.
11. Repeat Steps 9-13 of this procedure to add all other required grades.
12. After all required grades have been added, click **Apply**

13. Click **OK**.

Grades for converting numeric values of the input variable into string values of the output variable are successfully set.

Editing Grade Parameters

This section describes the procedure for editing grade parameters in the Discrete Value node.

To edit grade parameters:

1. In the visual editor area, right-click the Discrete Value node.

The drop-down menu is displayed:

Figure 3-144: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Gradations** tab of the *Discrete Value Properties* is displayed:

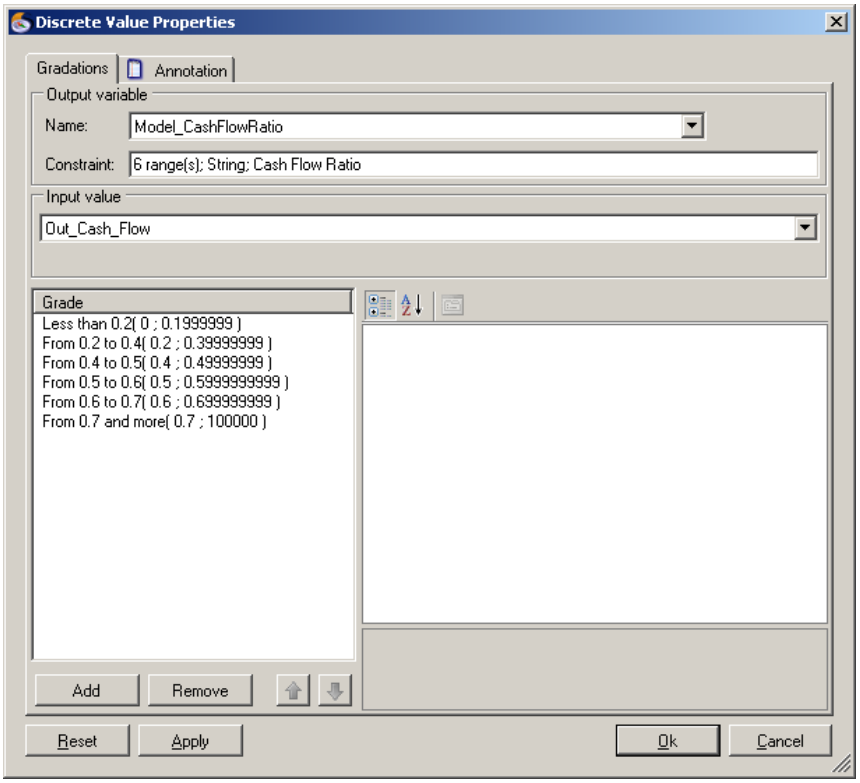


Figure 3-145: *Discrete Value Properties* dialog box

3. In the **Gradations** area, select the grade whose parameters should be edited.
4. Execute Steps 4-13 of the previous procedure.

The parameters of the selected grade are successfully changed.

Changing the Grade Application Order

This section describes the procedure for changing the order in which grades in the Discrete Value node are checked.

The order, in which grades are applied in the discrete value node, depends on the sequences, in which grades are displayed on the **Gradations** tab.

The uppermost grade is applied first; the lowermost grade is applied last.

The numeric value of the input variable is converted into the string value of the output variable in accordance with the first applicable grade, to which this variable belongs.

The user can change the order, in which grades are applied, by executing the procedure described below.

Note: *Prior to executing the procedure for changing the grade application order, execute the procedure described in section* Adding Gradations*, page* 114.

To change the grade application order:

1. In the visual editor area, right-click the Discrete Value node.

The drop-down menu is displayed:

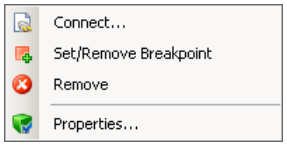


Figure 3-146: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Gradations** tab of the *Discrete Value Properties* is displayed:

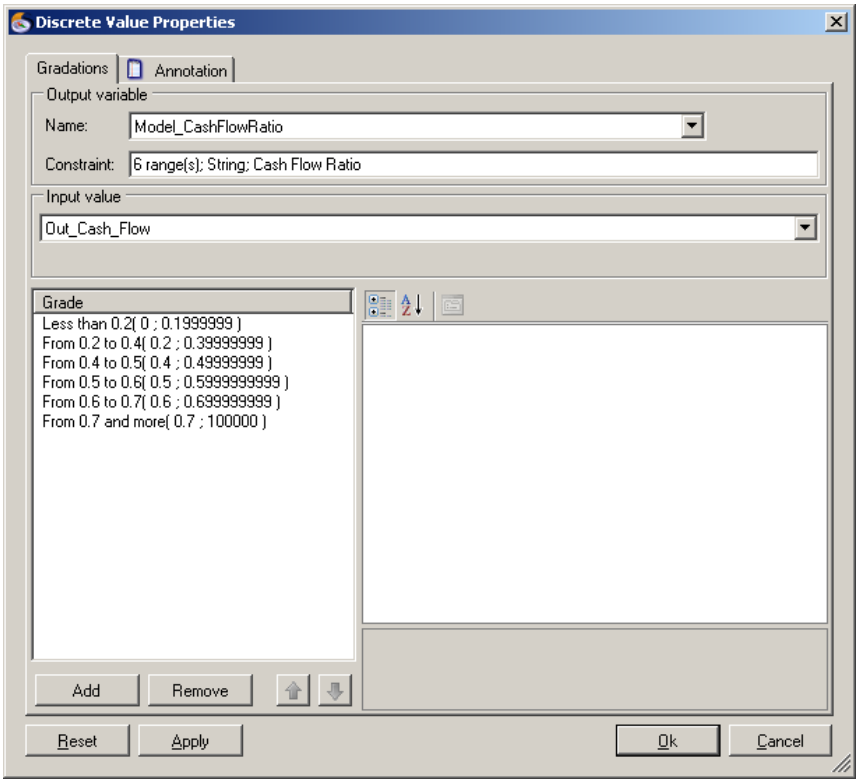


Figure 3-147: *Discrete Value Properties* dialog box

3. Using the and buttons, change the sequence of the grades in the **Grade** window.
4. Click **OK**.

The grade application order is successfully changed.

Deleting Grades

This section describes the procedure for deleting grades in the Discrete Value node.

To delete a grade:

1. In the visual editor area, right-click the Discrete Value node.

The drop-down menu is displayed:

Figure 3-148: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Gradations** tab of the *Discrete Value Properties* is displayed:

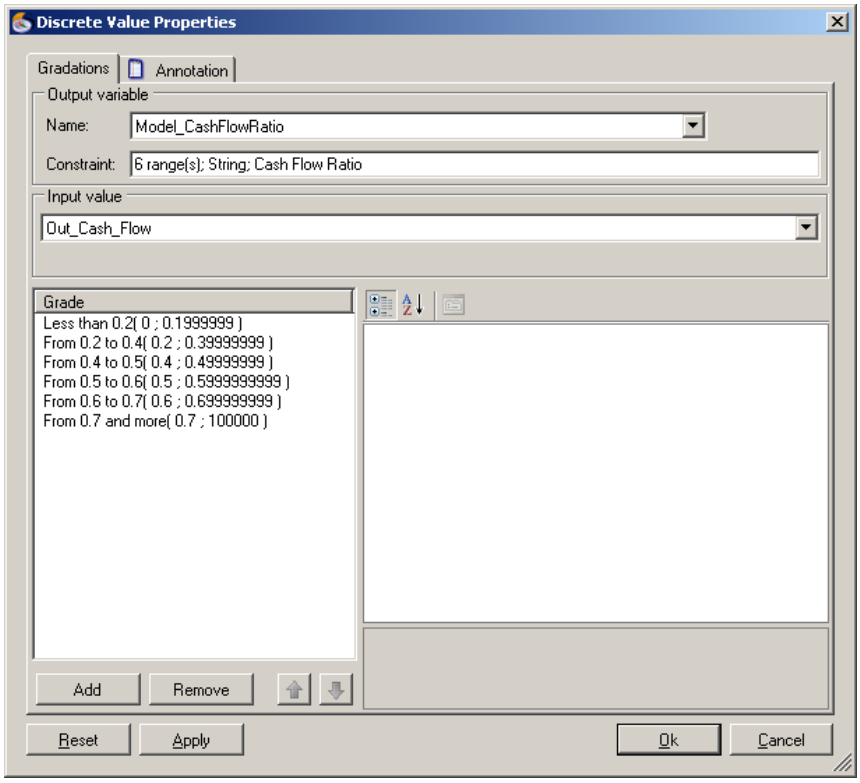


Figure 3-149: *Discrete Value Properties* dialog box

3. In the **Gradations** area, select the grade that must be deleted.
4. Click **Remove**.

The selected grade is successfully deleted.

Other Properties

This sections explains how to set a custom name for the Discrete Value node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. In the visual editor area, right-click the Discrete Value node.

The drop-down menu is displayed:

Figure 3-150: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Expression** tab of the *Discrete Value Properties* is displayed:

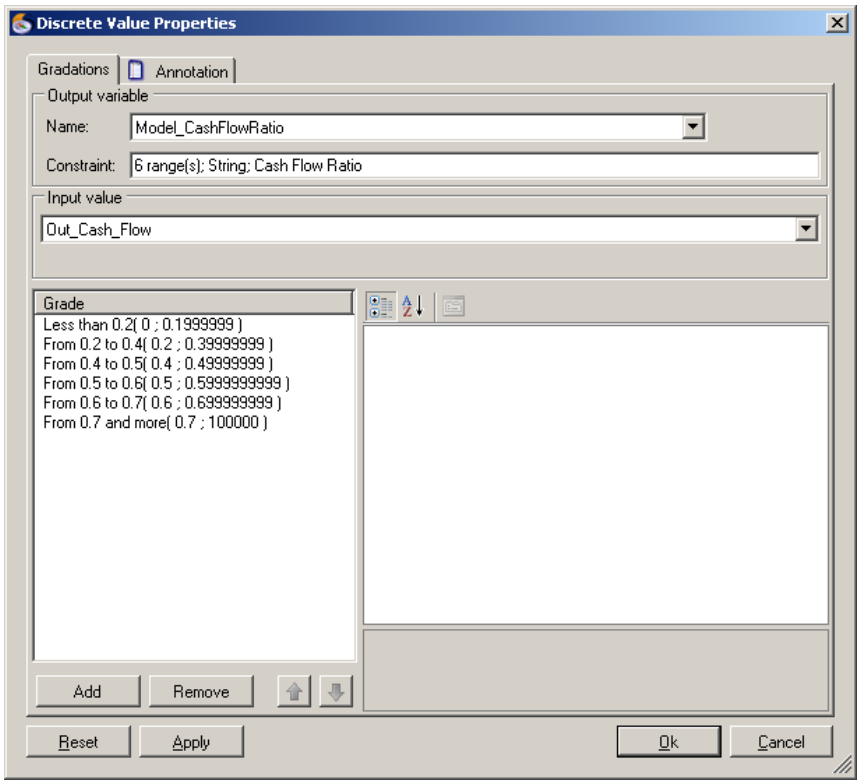


Figure 3-151: *Discrete Value Properties* dialog box

3. Navigate to the **Annotation** tab.

The **Annotation** tab of the *Discrete Value Properties* is displayed:

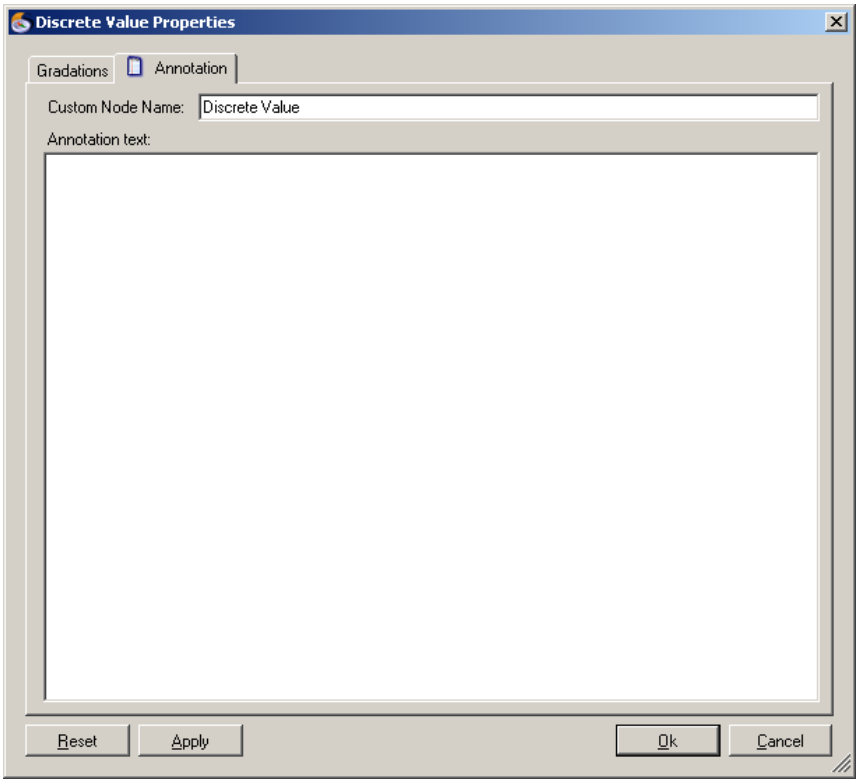


Figure 3-152: Annotation tab

4. In the **Custom Node Name** box, enter a new custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

To set the breakpoint:

1. In the visual editor area, select the Discrete Value node.

2. Right-click the selected node.

The drop-down menu is displayed:

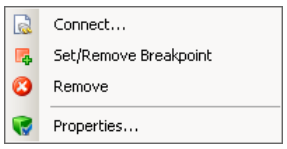


Figure 3-153: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the Discrete Value node with the breakpoint.

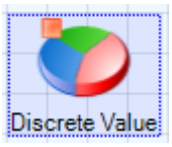


Figure 3-154: Breakpoint graphic indication

The breakpoint is successfully set.

Conditional Assignment Node

The conditional assignment node is a node that is included in the standard Scorto Strategy Maven package.

Figure 3-155: Conditional assignment in the visual editor

Node Description

The conditional assignment node is used to assign a value to variable depending upon the set condition being true or false.

Adding a Condition

This section describes the procedure for adding a condition in the conditional assignment node.

To add a condition:

1. Drag and drop the conditional assignment node into the visual editor area.
2. In the visual editor area, right-click the added node.

The drop-down menu is displayed:

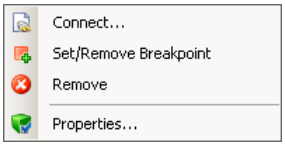


Figure 3-156: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The *Conditional Assignment Properties* dialog box is displayed:

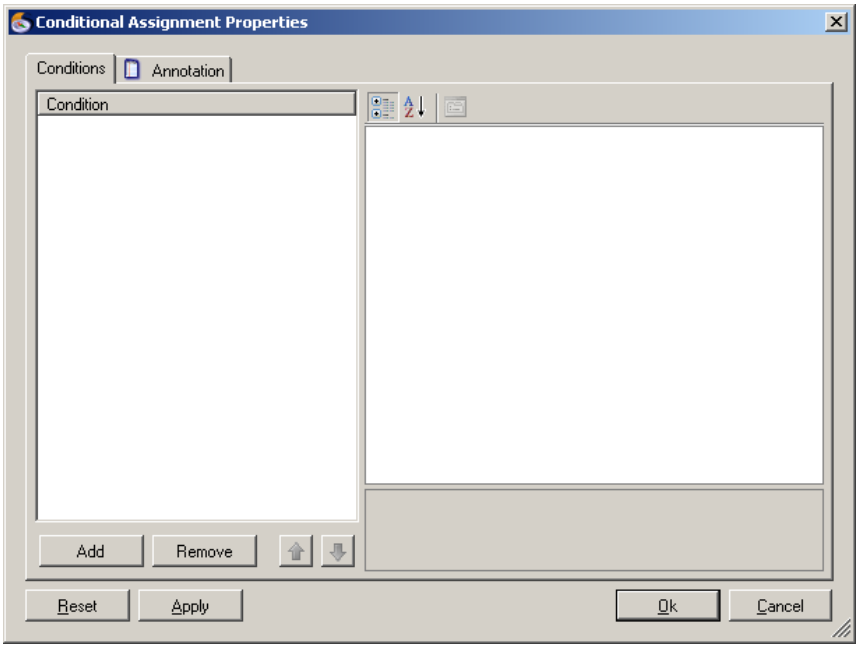


Figure 3-157: *Conditional Assignment Properties* dialog box

4. On the **Conditions** tab of the *Conditional Assignment Properties* dialog box, click **Add**.

A new condition is added:

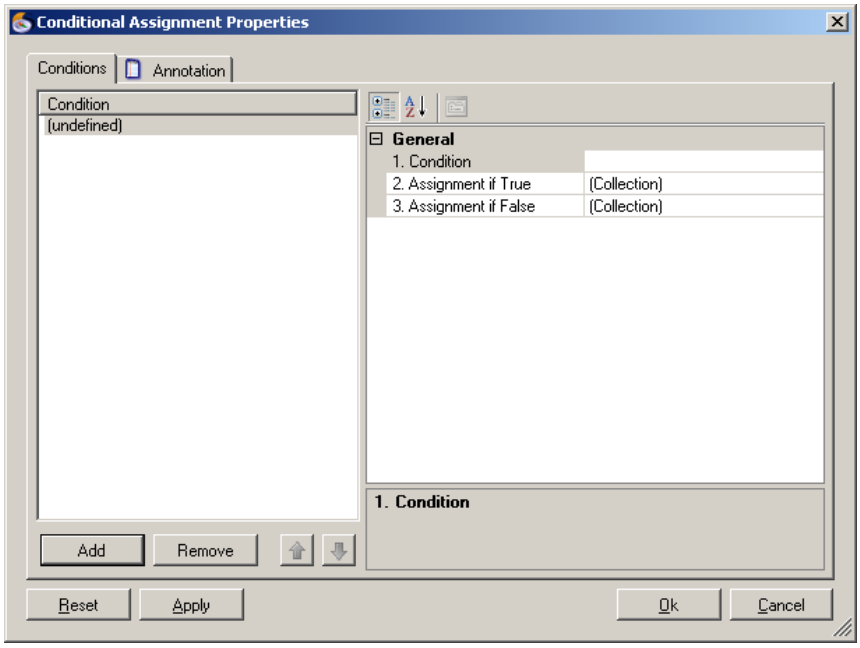


Figure 3-158: New condition is added

5. In the **Condition** box in the right-hand side of the dialog box click .

The *Condition Editor* dialog box is displayed:

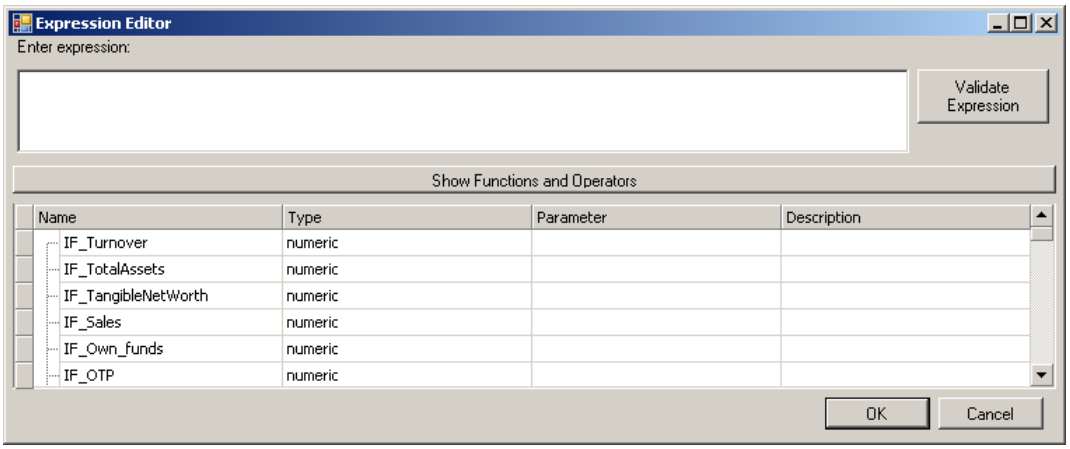


Figure 3-159: *Condition Editor* dialog box

6. In the **Enter expression** box, enter the condition using variables that are available in the lower part of the dialog box.

Note: *Additional mathematical and logical operators are available; to see them, click the* ***Show Functions and Operators*** *button. For more information, refer to Chapter «Functions in Use (*Reference*)», p. 197.*

7. To validate the condition, click **Validate expression**.

If the entered condition is not correct, the following error message is displayed:

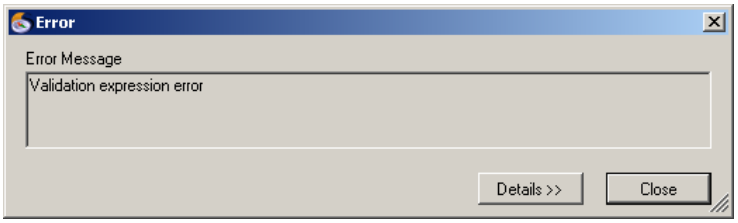


Figure 3-160: Condition error message

8. Click **Close**.

9. Correct the entered condition appropriately and click **Validate expression** again.

If the entered expression is correct, the following confirmation is displayed:

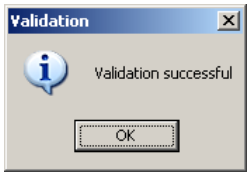


Figure 3-161: Confirmation that the expression is valid

10. Click **OK**.
11. In the *Variable Assignment Editor* dialog box, click **OK**.

The entered condition is displayed in the *Conditional Assignment Properties*:

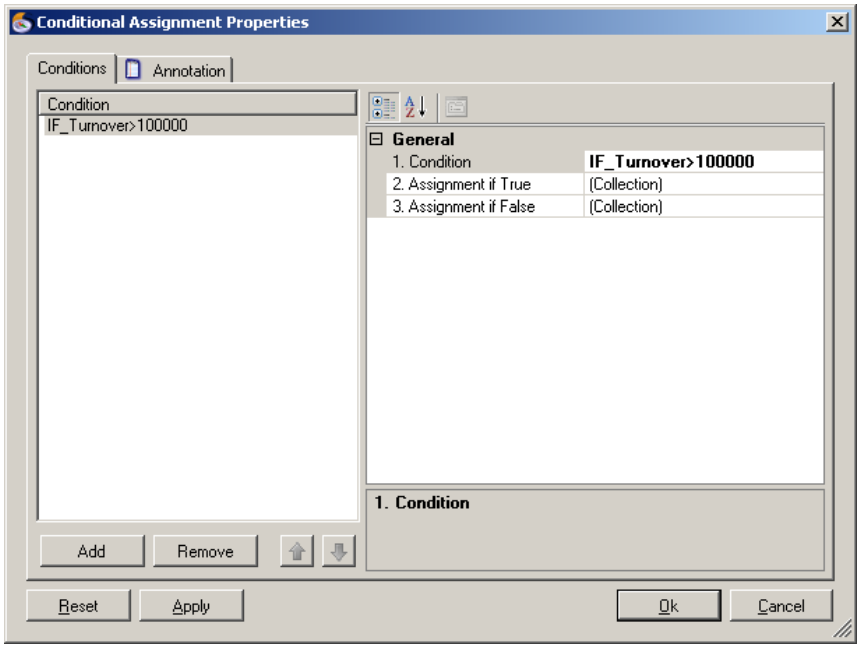


Figure 3-162: Condition is set

12. In the **Assignment if true** box, click ....

The *Variable Assignment Editor* dialog box is displayed:

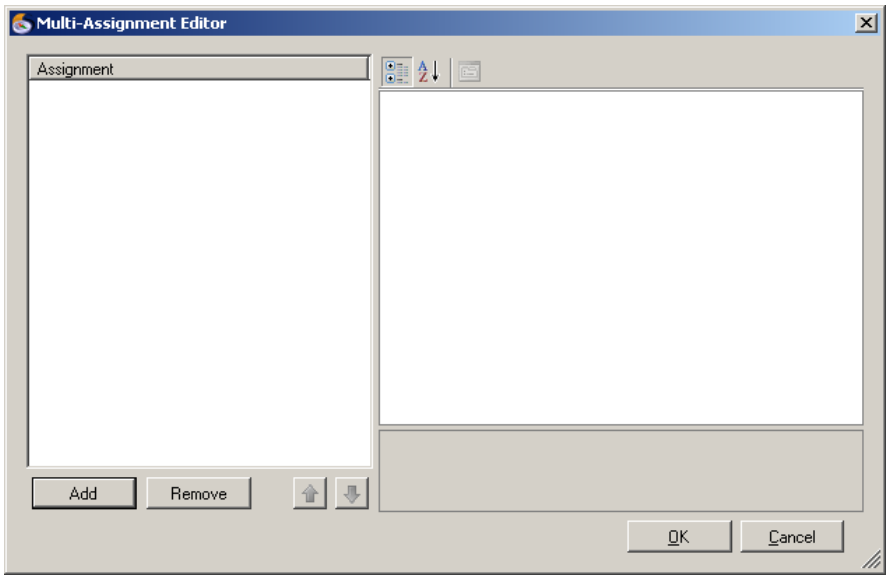


Figure 3-163: Variable Assignment Editor *dialog box*

13. Click **Add**.

A new assignment is added:

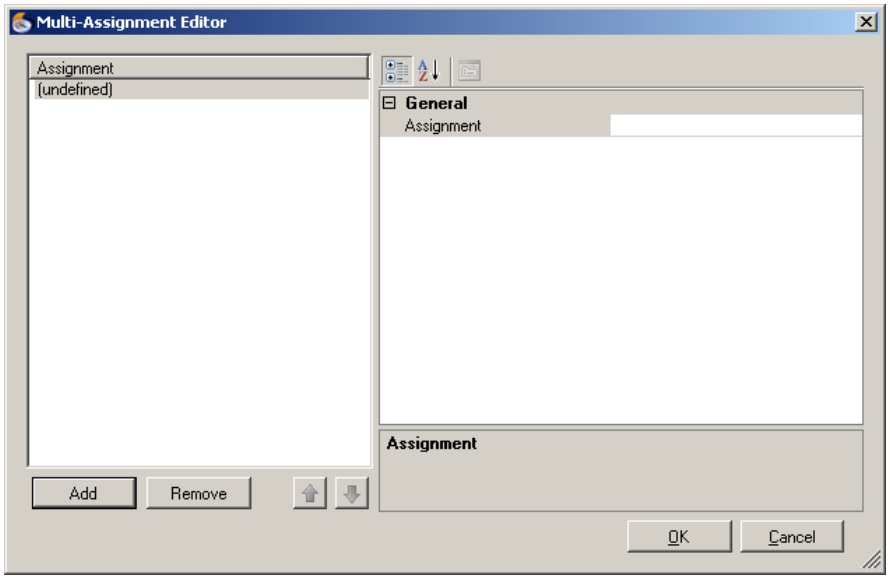


Figure 3-164: Adding a new condition

14. In the **Assignment** box in the right-hand side of the dialog box click ....

The *Variable Assignment Editor* dialog box is displayed:

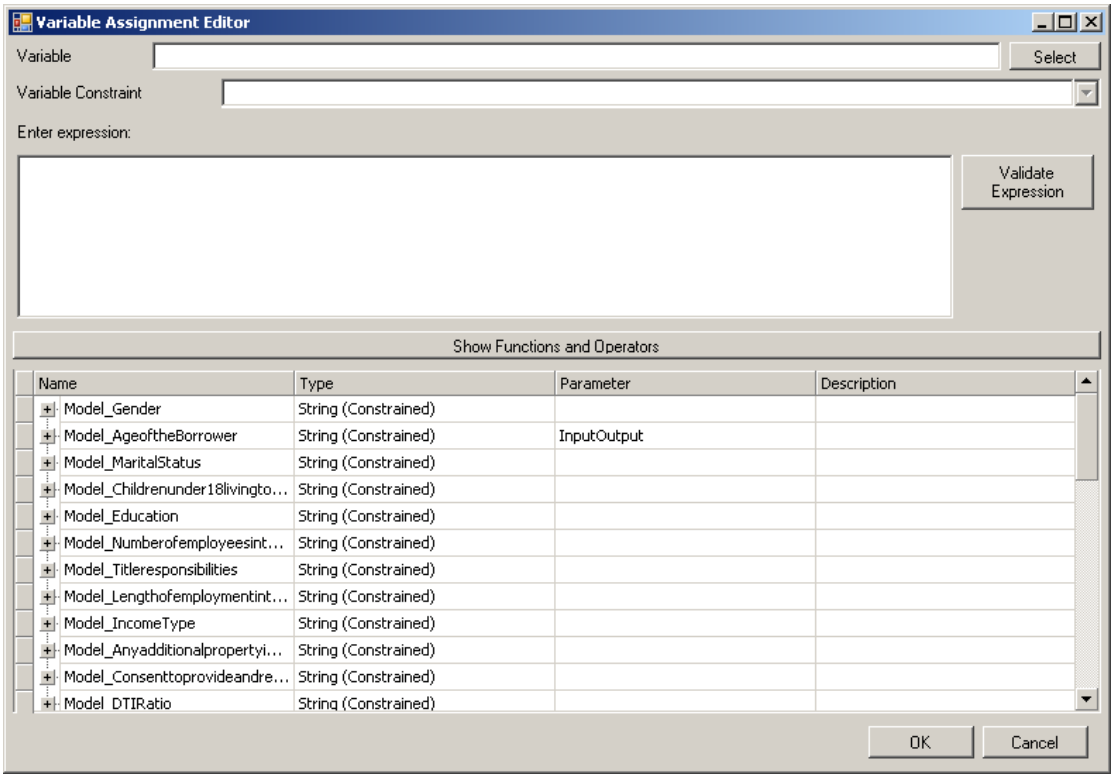


Figure 3-165: *Variable Assignment Editor* dialog box

15. On the right of the **Variable** box, click **Select**.

The **Variables** table is displayed:

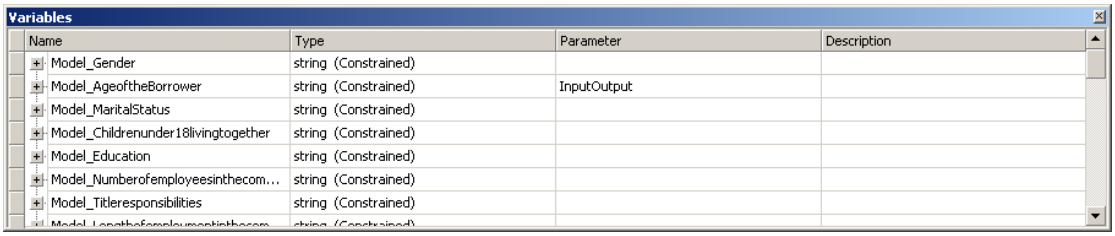


Figure 3-166: Variables table

16. Select the required variable by double-clicking.

The selected variable is displayed in the **Variable** box (its constraints, if there are any, are displayed in the **Variable Constraint** box):

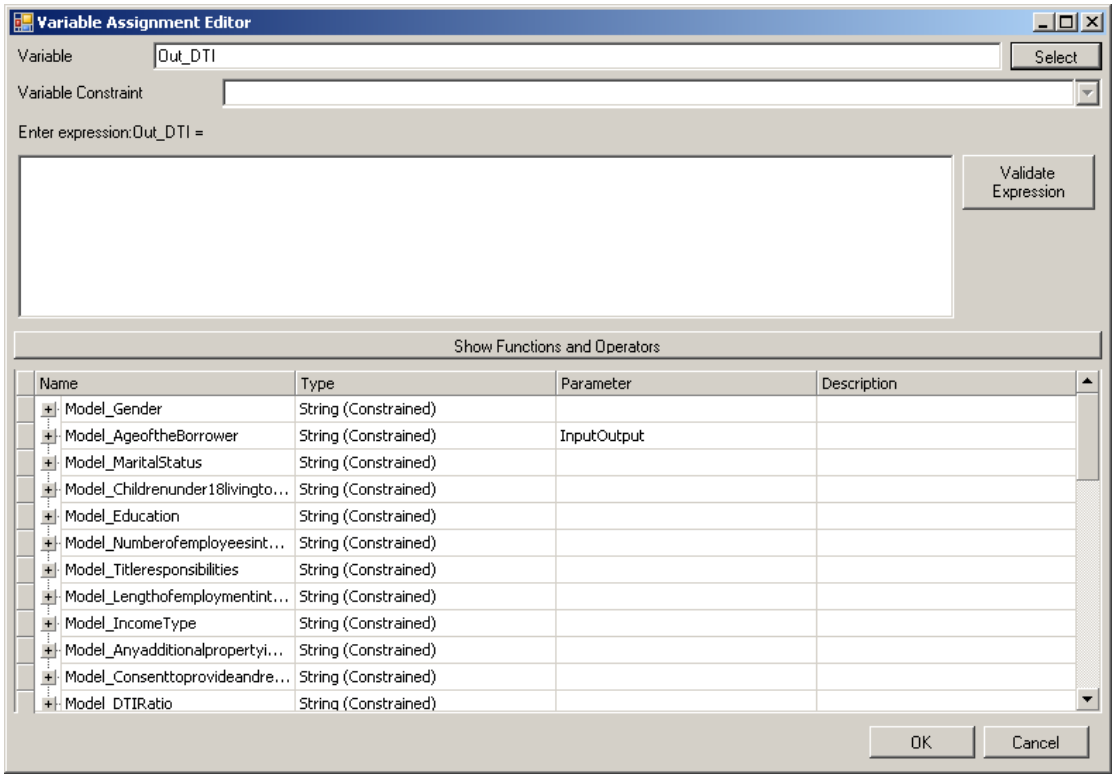


Figure 3-167: Selecting a variable

17. In the **Enter expression** box, enter an expression for the selected variable that is to be used to make the assignment.
18. Click **Validate Expression**.

If the entered expression is incorrect, the following message is displayed:

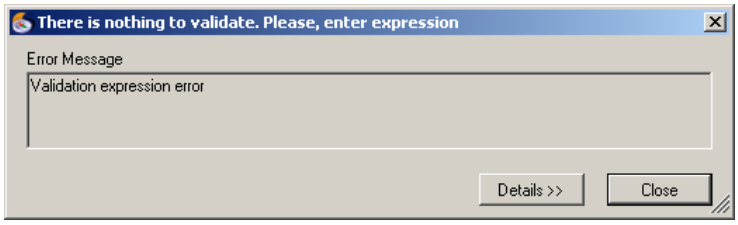


Figure 3-168: Error message

19. Correct the entered expression appropriately and click **Validate expression** again.

If the entered expression is correct, the following confirmation is displayed:

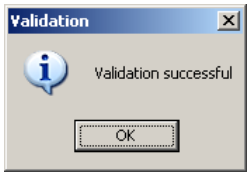


Figure 3-169: Confirmation that the expression is valid

20. Click **OK**.

The defined assignment expression is displayed in the *Multi-Assignment Editor* dialog box:

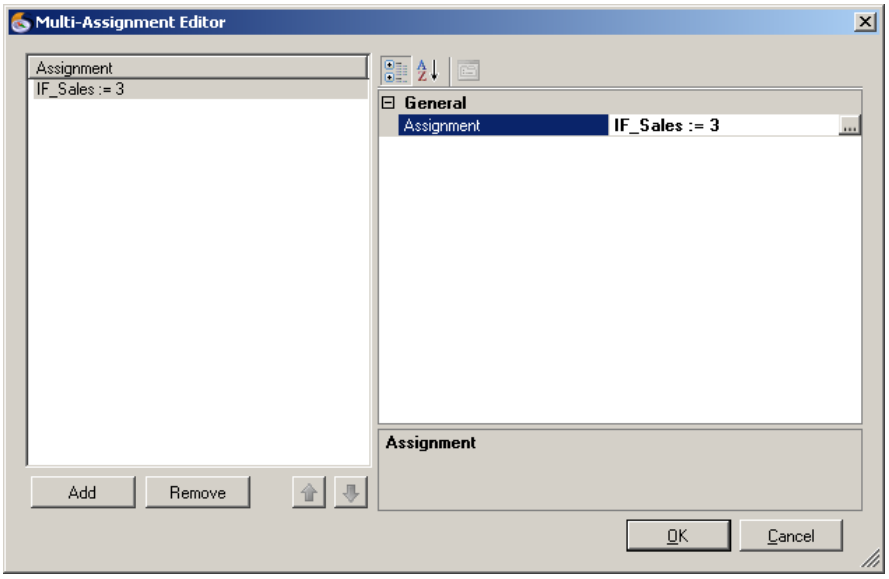


Figure 3-170: Assigning a variable value

21. Click **OK**.

The entered condition is displayed in the *Conditional Assignment Properties*:

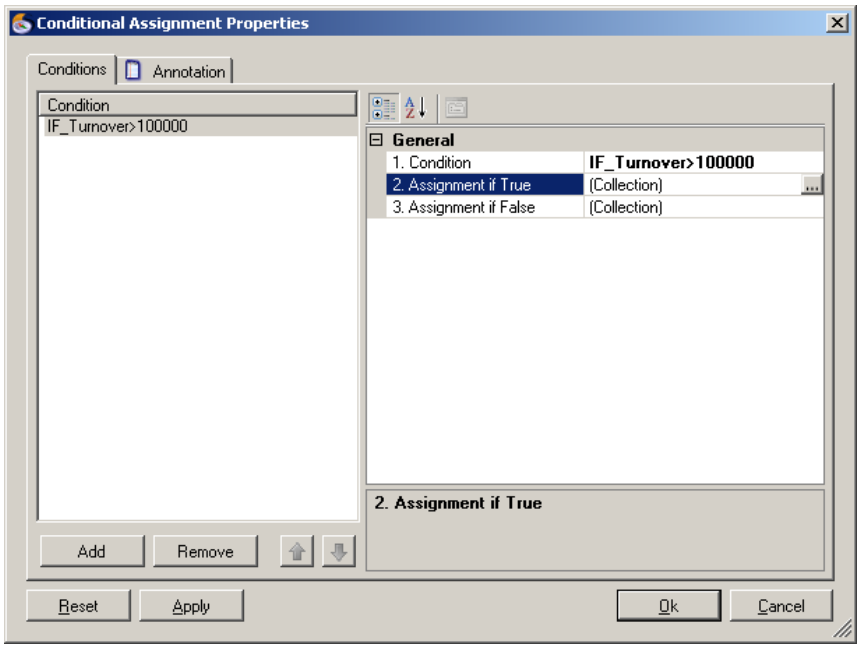


Figure 3-171: Condition is set

22. If necessary, perform actions similar to Steps 12-21 of this procedure to set the value to be assigned if the condition is false.
23. Repeat Steps 4-22 of this procedure to add other conditions of value assignment.
24. Click **OK**.

The conditions required for value assignment are successfully set.

Editing condition parameters

This section describes the procedure for editing condition parameters in the conditional assignment node.

To edit condition parameters:

1. In the visual editor area, right-click the conditional assignment node.

The drop-down menu is displayed:

Figure 3-172: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Conditions** tab of the *Conditional Assignment Properties* is displayed:

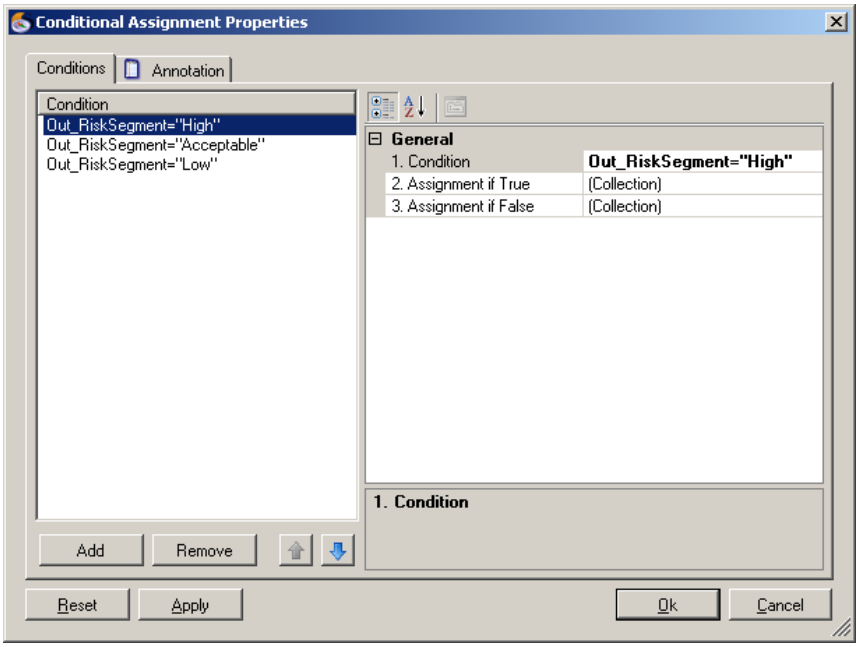


Figure 3-173: *Conditional Assignment Properties dialog box*

3. In the **Conditions** area, select the condition whose parameters should be edited.
4. Execute Steps 4-22 of the previous procedure.

The parameters of the selected condition are successfully edited.

Changing the Order of Condition Checks

This section describes the procedure for changing the order in which conditions in the conditional assignment node are checked.

The condition change order in the conditional assignment node depends on the sequence, in which the conditions are displayed on the **Conditions** tab of the *Conditional Assignment Properties* dialog box.

The conditions are checked in the following way: the condition of the uppermost segment is checked first; the condition of the lowermost segment is checked last.

The value will be assigned according to the condition that is the first to be met (to be TRUE).

The user can change the order of condition checks by executing the procedure described below.

Note: *Prior to executing the procedure for changing the condition check order, execute the procedure described in section* Adding a *Condition, page* 127.

To change the condition check order:

1. In the visual editor area, right-click the conditional assignment node.

The drop-down menu is displayed:

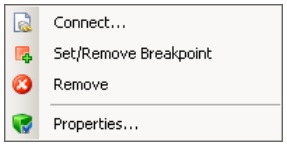


Figure 3-174: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Conditions** tab of the *Conditional Assignment Properties* is displayed:

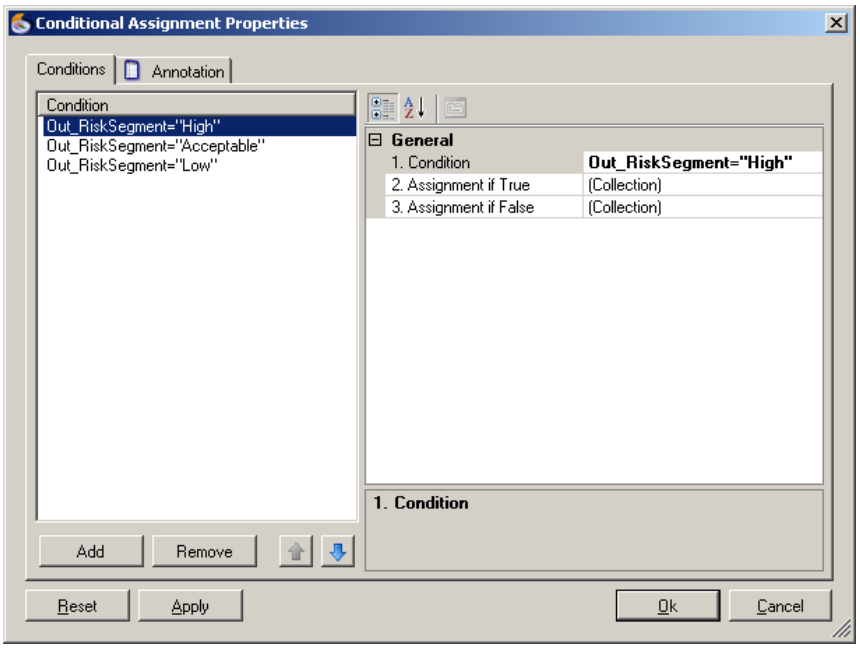


Figure 3-175: *Conditional Assignment Properties* dialog box

3. Using the and buttons, change the sequence of the conditions in the **Conditions** window.
4. Click **OK**.

The condition check order is successfully changed.

Deleting Conditions

This section describes the procedure for deleting conditions in the conditional assignment node.

To delete a condition:

1. In the visual editor area, right-click the conditional assignment node.

The drop-down menu is displayed:

Figure 3-176: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Conditions** tab of the *Conditional Assignment Properties* is displayed:

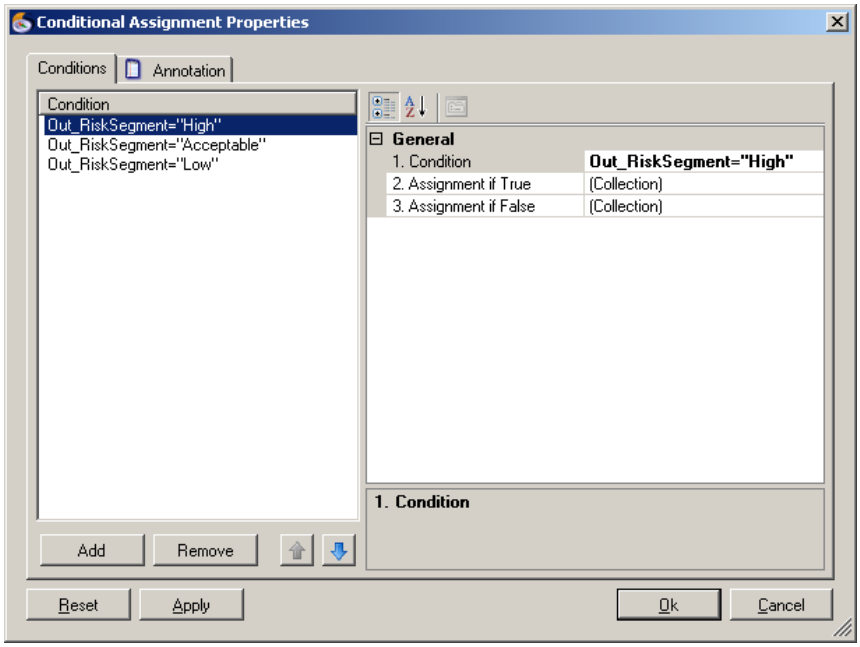


Figure 3-177: *Conditional Assignment Properties* dialog box

3. In the **Conditions** area, select the condition that must be deleted.
4. Click **Remove**.

The selected condition has been successfully deleted.

Other Properties

This sections explains how to set a custom name for the conditional assignment node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. In the visual editor area, right-click the conditional assignment node.

The drop-down menu is displayed:

Figure 3-178: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Conditions** tab of the *Conditional Assignment Properties* is displayed:

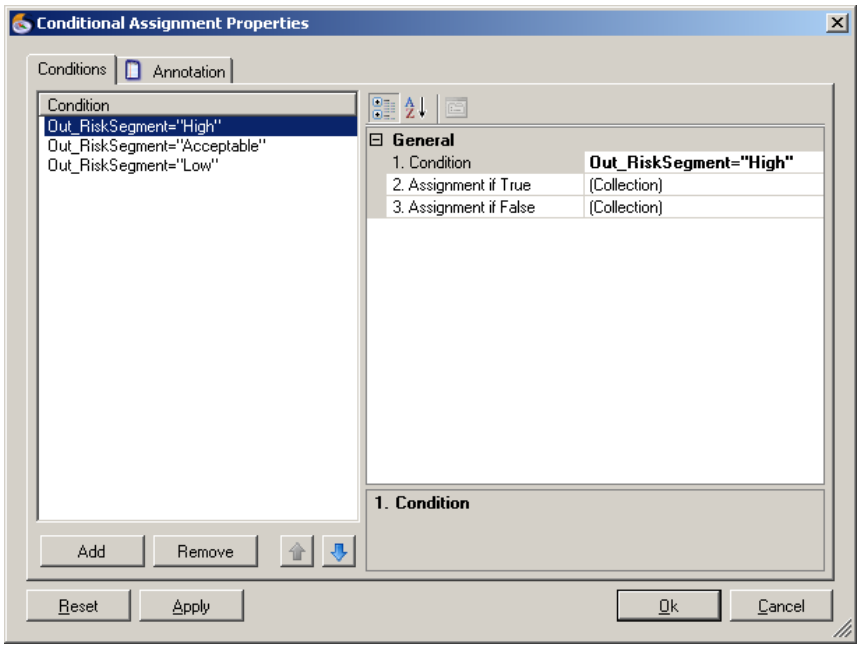


Figure 3-179: *Conditional Assignment Properties* dialog box

3. Navigate to the **Annotation** tab.

The **Annotation** tab of the *Conditional Assignment Properties* is displayed:

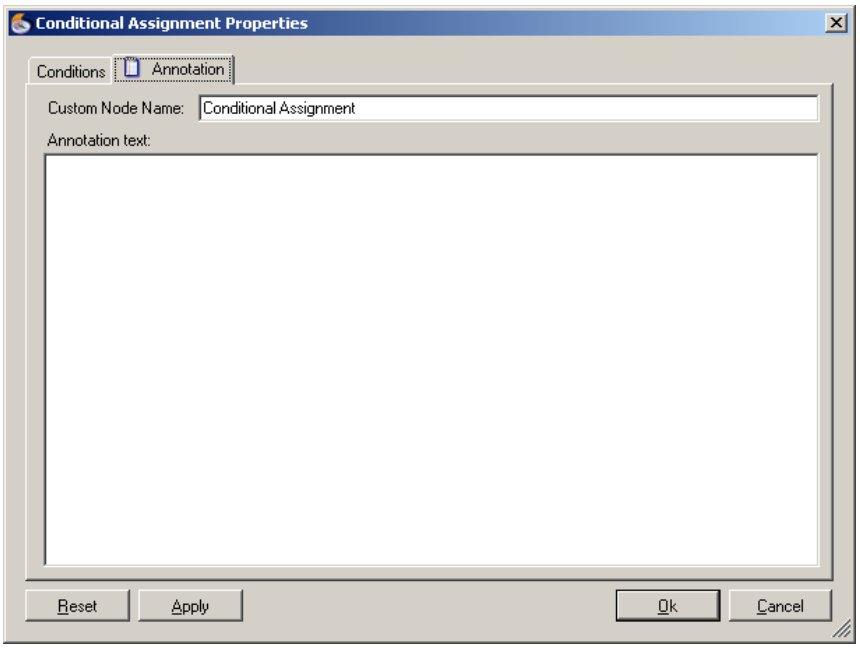


Figure 3-180: Annotation tab

4. In the **Custom Node Name** box, enter a new custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

To set the breakpoint:

1. In the visual editor area, select the conditional assignment node.
2. Right-click the selected node.

The drop-down menu is displayed:

Figure 3-181: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the conditional assignment node with the breakpoint.

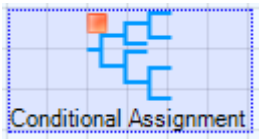


Figure 3-182: Breakpoint graphic indication

The breakpoint is successfully set.

Multi-Assignment Node

The multi-assignment node is a node that is included in the standard Scorto Strategy Maven package.

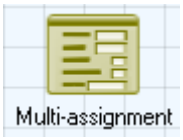


Figure 3-183: Multi-assignment node in the visual editor

Node Description

The multi-assignment node is intended for optimization of strategy performance; this node enables assigning several values to variables, thus simplifying the structure of the strategy and speeding up its processing.

Adding Assignments

This section describes the procedure for adding an assignment in the multi-assignment node.

To add an assignment:

1. Drag and drop the multi-assignment node into the visual editor area.
2. In the visual editor area, right-click the added node.

The drop-down menu is displayed:

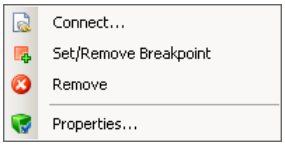


Figure 3-184: Drop-down menu

3. From the drop-down menu, select the **Properties** command.

The *Multi-Assignment Properties* dialog box is displayed:

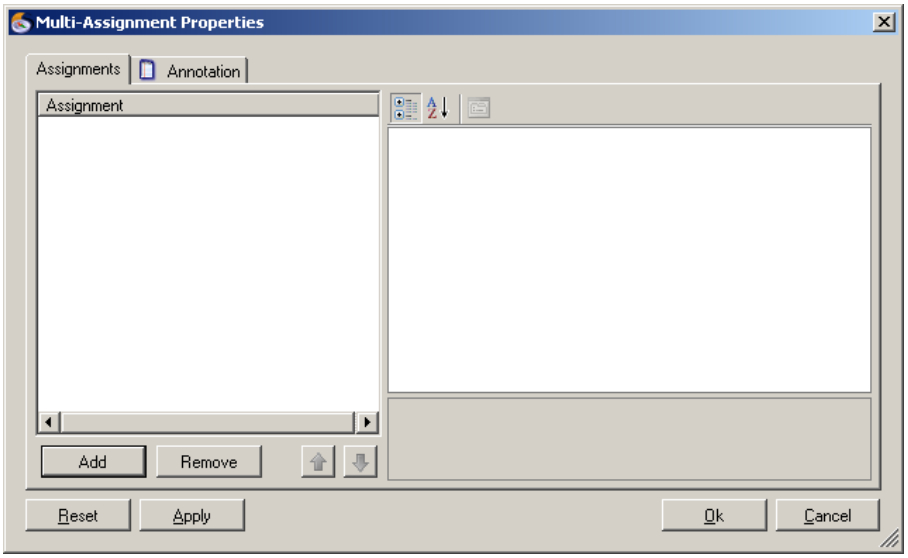


Figure 3-185: *Multi-Assignment Properties* dialog box

4. Click **Add**.

A new assignment is created:

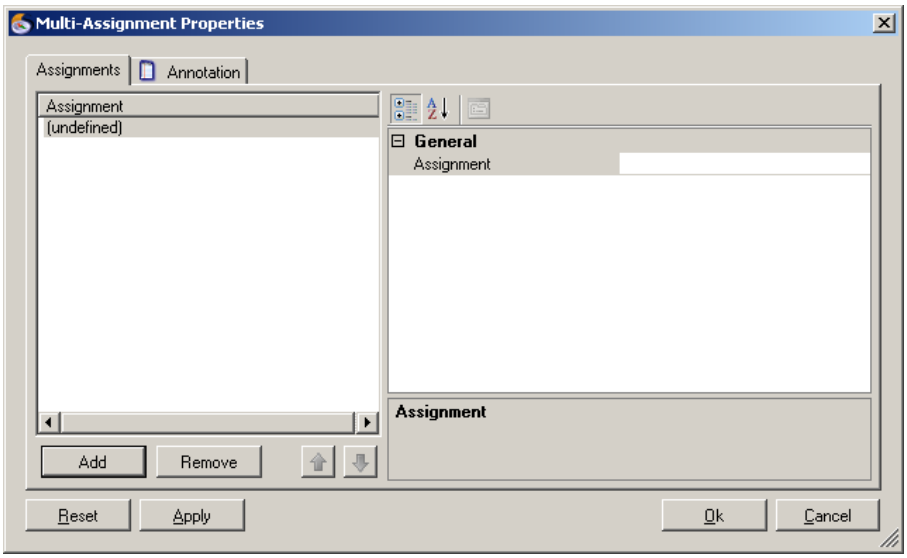


Figure 3-186: New assignment created

5. In the **Assignment** box, click ....

The *Variable Assignment Editor* dialog box is displayed:

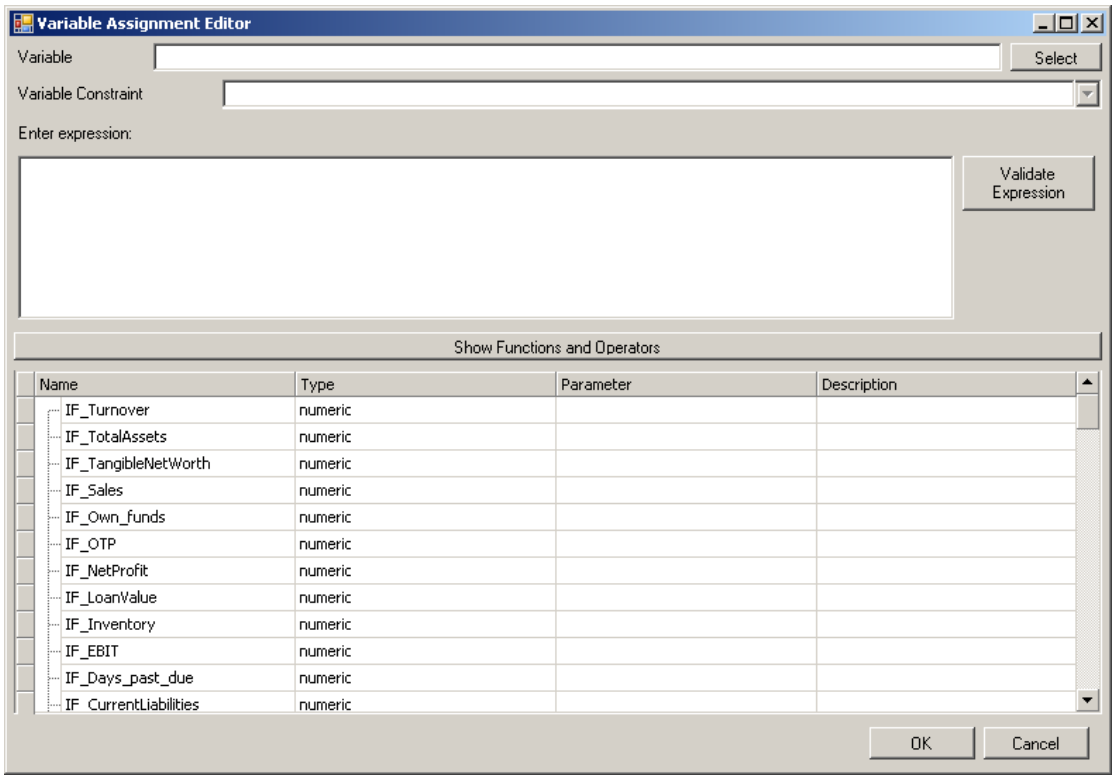


Figure 3-187: Variable Assignment Editor *dialog box*

6. Click **Select**.

The Variables table is displayed:

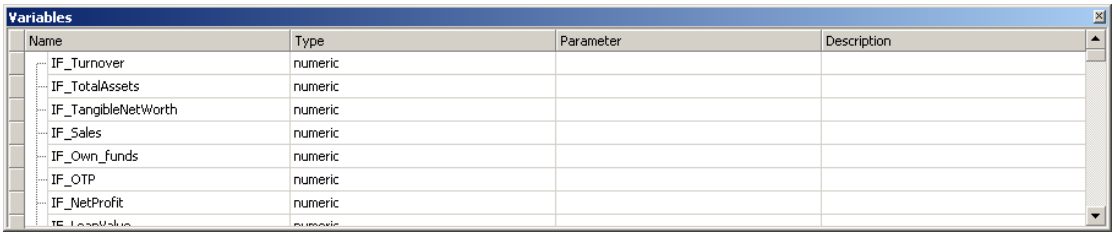


Figure 3-188: Variables table

7. In the variables table double-click to select the required variable.

The selected variable is displayed in the *Variable Assignment Editor* dialog box:

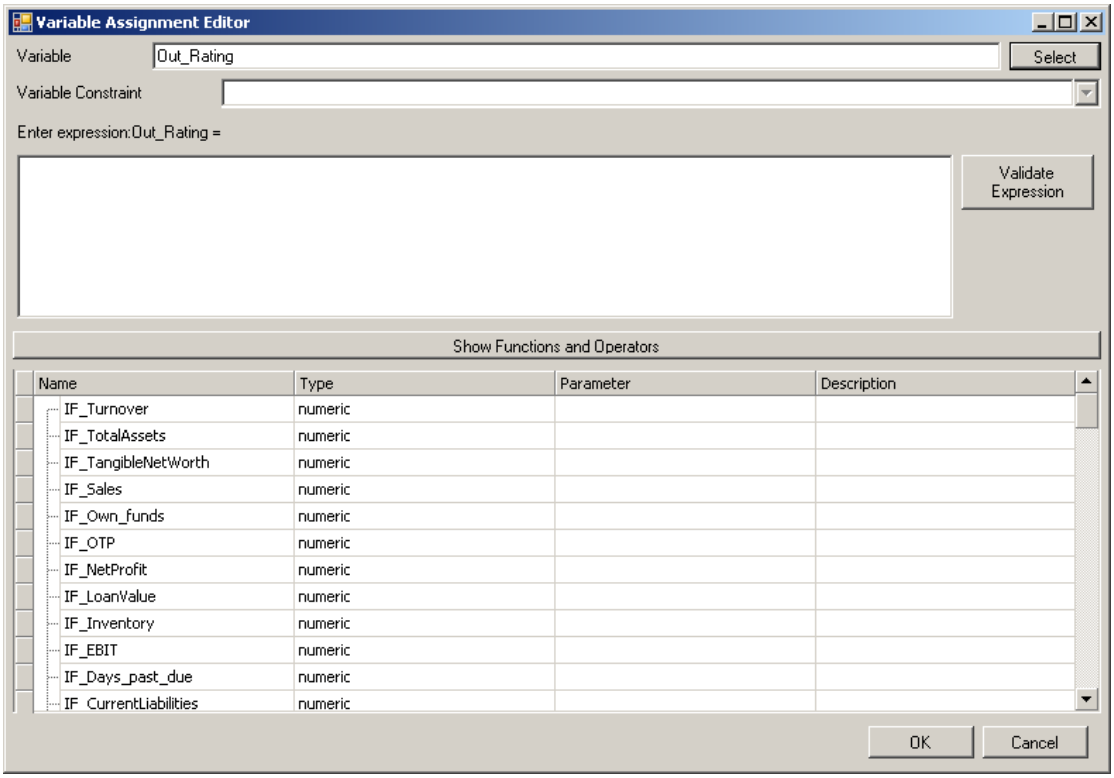


Figure 3-189: Variable for value assignment is selected

8. In the **Enter expression** box, enter the condition using variables that are available in the lower part of the dialog box.

Note: *Additional mathematical and logical operators are available; to see them, click the* ***Show Functions and Operators*** *button. For more information, refer to Chapter «Functions in Use (*Reference*)», p. 197.*

9. To validate the condition, click **Validate expression**.

If the entered condition is not correct, the following error message is displayed:

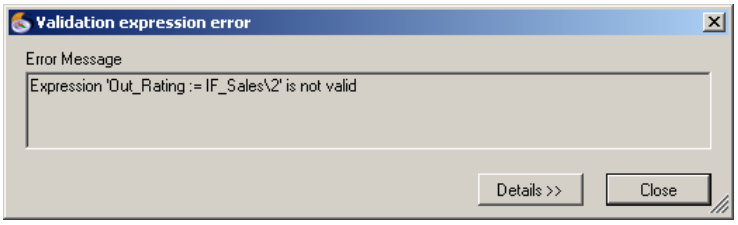


Figure 3-190: Condition error message

10. Click **Close**.
11. Correct the entered condition appropriately and click **Validate expression** again.

If the entered expression is correct, the following confirmation is displayed:

Figure 3-191: Confirmation that the expression is valid

12. Click **OK**.

The new assignment is added:

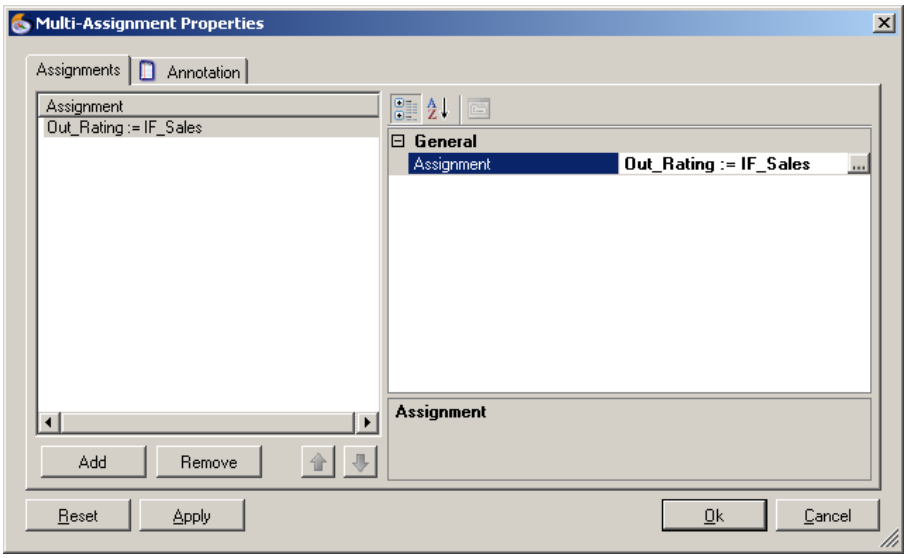


Figure 3-192: Assignment is added

13. Repeat Steps 4-12 of this procedure to add assignments for other required variables.

The value assignments for the variables are successfully added.

Editing Assignment Parameters

This section describes the procedure for editing assignment parameters in the multi-assignment node.

To edit the parameters of an assignment:

1. In the visual editor area, right-click the multi-assignment node.

The drop-down menu is displayed:

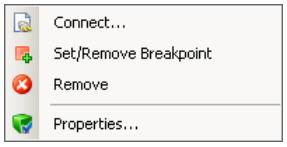


Figure 3-193: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Assignments** tab of the *Multi-Assignment Properties* is displayed:

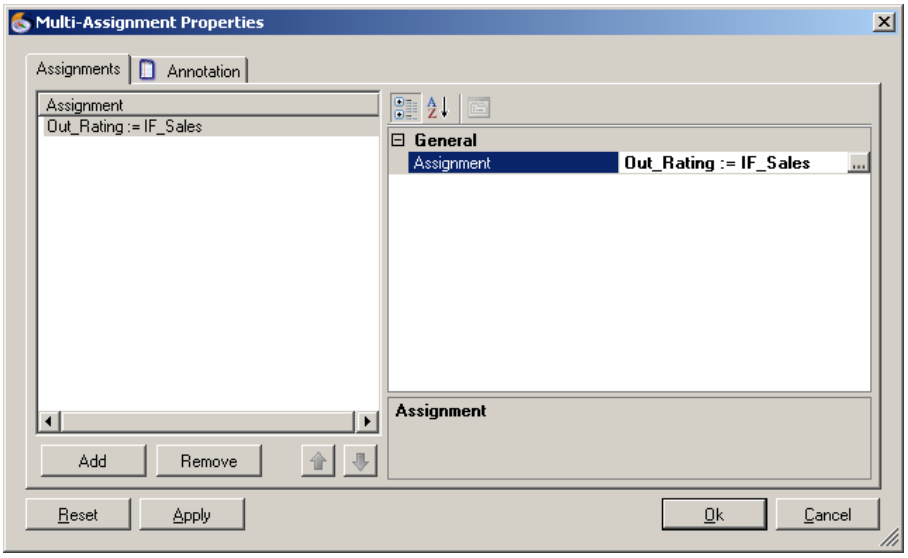


Figure 3-194: ***Multi-Assignment Properties dialog box***

3. In the **Assignments** area, select the assignment, whose parameters should be edited.
4. Execute Steps 4-12 of the previous procedure.

The parameters of the selected assignment are successfully changed.

Changing Assignment Order

This section describes the procedure for changing the order in which assignments in the multi-assignment node are applied.

Assignments are applied in the following sequence: the uppermost assignment is applied first; the lowermost assignment is applied last.

The user can change the order, in which assignments are applied, by executing the procedure described below.

Note: *Prior to executing the procedure for changing the assignment application order, execute the procedure described in section* Adding Assignments, *page* 145.

To change the assignment application order:

1. In the visual editor area, right-click the multi-assignment node.

The drop-down menu is displayed:

Figure 3-195: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Assignments** tab of the Multi-Assignment Properties is displayed:

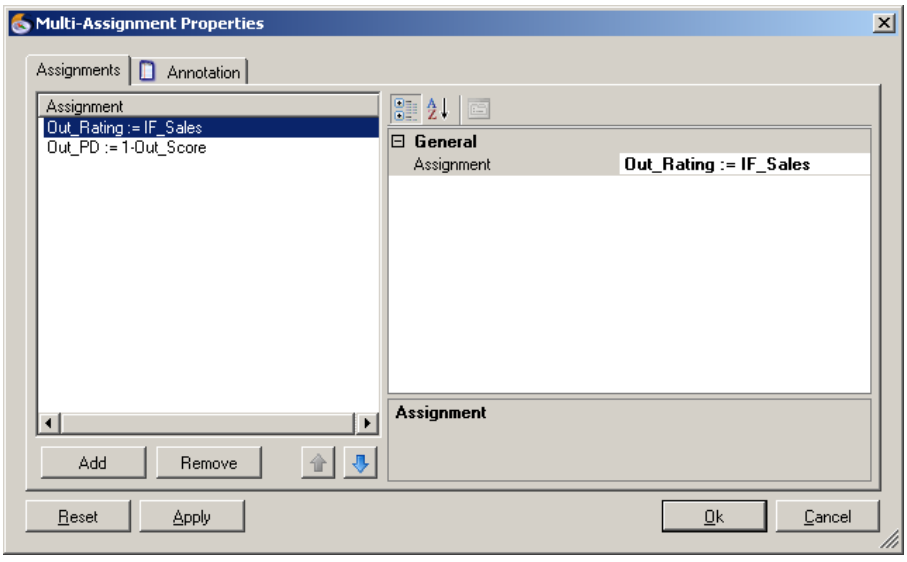


Figure 3-196: Multi-Assignment Properties dialog box

3. Using the and buttons, change the sequence of the conditions in the **Assignments** window.
4. Click **OK**.

The assignment application order is successfully changed.

Deleting Assignments

This section describes the procedure for deleting assignments in the multi-assignment node.

To delete an assignment:

1. In the visual editor area, right-click the multi-assignment node.

The drop-down menu is displayed:

Figure 3-197: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Assignments** tab of the Multi-Assignment Properties is displayed:

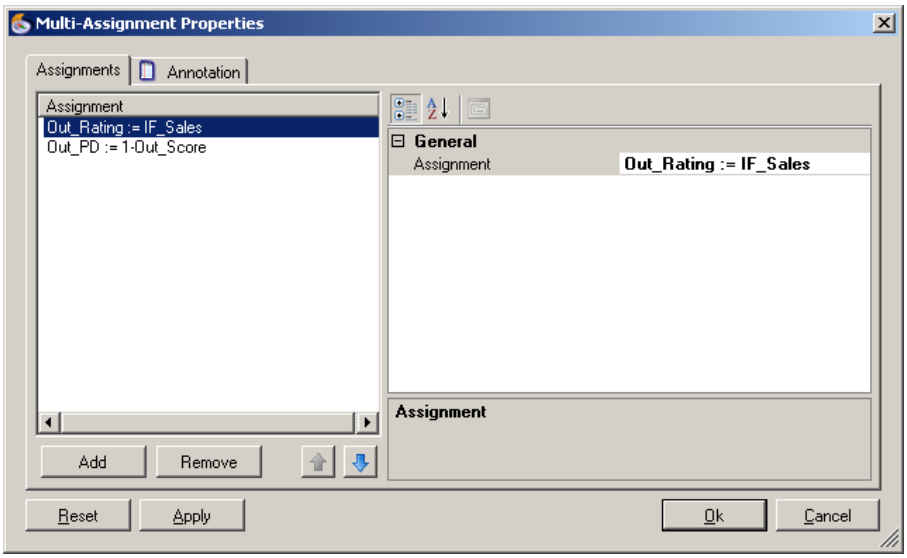


Figure 3-198: Multi-Assignment Properties dialog box

3. In the **Assignments** area, select the assignment that must be deleted.
4. Click **Remove**.

The selected assignment is successfully deleted.

Other Properties

This sections explains how to set a custom name for the multi-assignment node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. In the visual editor area, right-click the multi-assignment node.

The drop-down menu is displayed:

Figure 3-199: Drop-down menu

2. From the drop-down menu, select the **Properties** command.

The **Assignments** tab of the Multi-Assignment Properties is displayed:

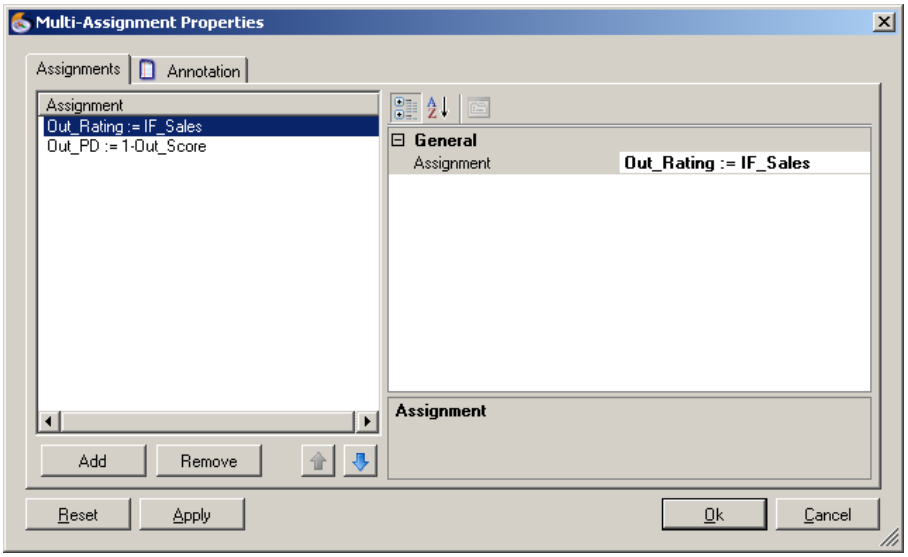


Figure 3-200: Conditional Assignment Properties dialog box

3. Navigate to the **Annotation** tab.

The **Annotation** tab of the Multi-Assignment Properties is displayed:

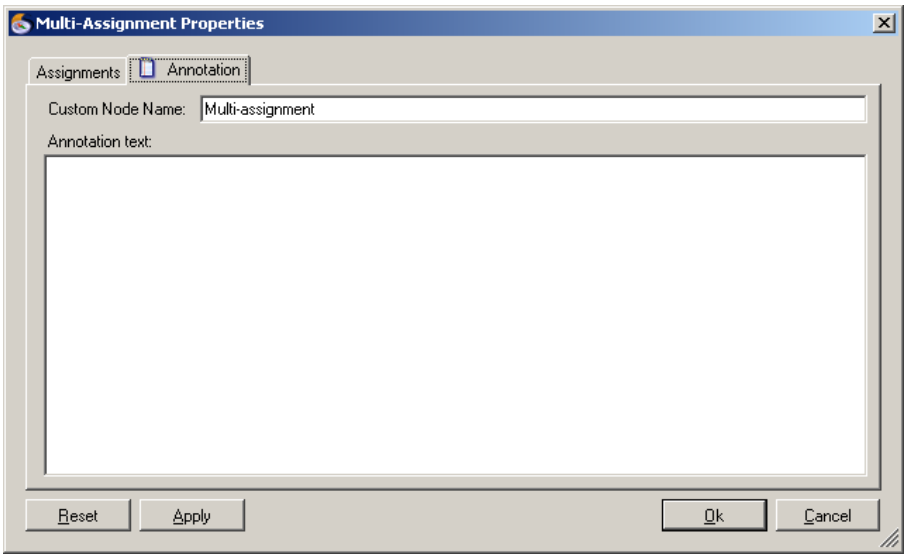


Figure 3-201: Annotation tab

4. In the **Custom Node Name** box, enter a new custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

To set the breakpoint:

1. In the visual editor area, select the multi-assignment node.
2. Right-click the selected node.

The drop-down menu is displayed:

Figure 3-202: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the multi-assignment node with the breakpoint.

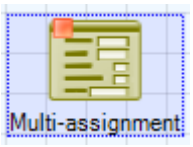


Figure 3-203: Breakpoint graphic indication

The breakpoint is successfully set.

Print Node

The Print node is a node that is included in the standard Scorto Strategy Maven package.

Figure 3-204: Print node in the visual editor

Node Description

The Print node is used to print documents attached to the borrower's application.

Selecting Document Templates for Printing

This section describes how to select document templates for printing.

To select document templates for printing:

1. Drag and drop the node into the visual editor area.

The Print Wizard dialog box is displayed:

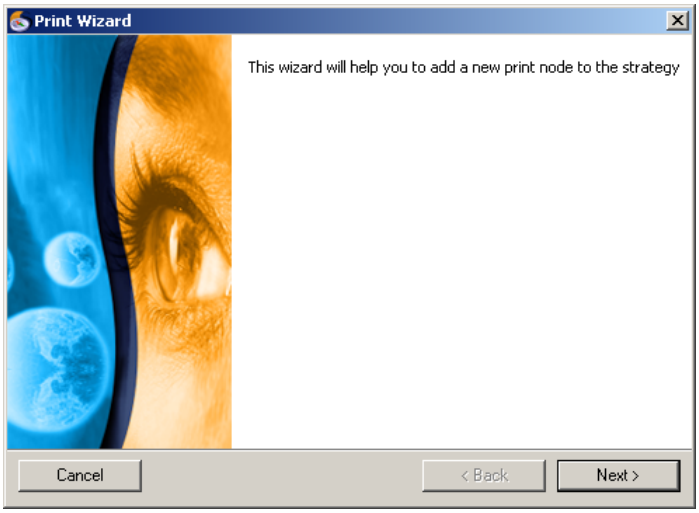


Figure 3-205: Print Wizard dialog box

2. Click **Next**.

A document template selection dialog box is displayed:

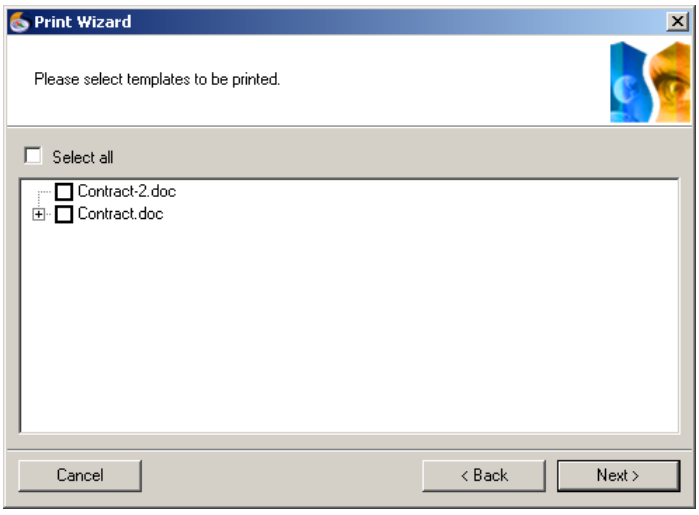


Figure 3-206: Document template selection dialog box

3. Using the checkboxes, select one or more document templates for printing.

Note: To select all the available templates, check **Select all.**

4. Click **Next**.

The Print Wizard final page is displayed:

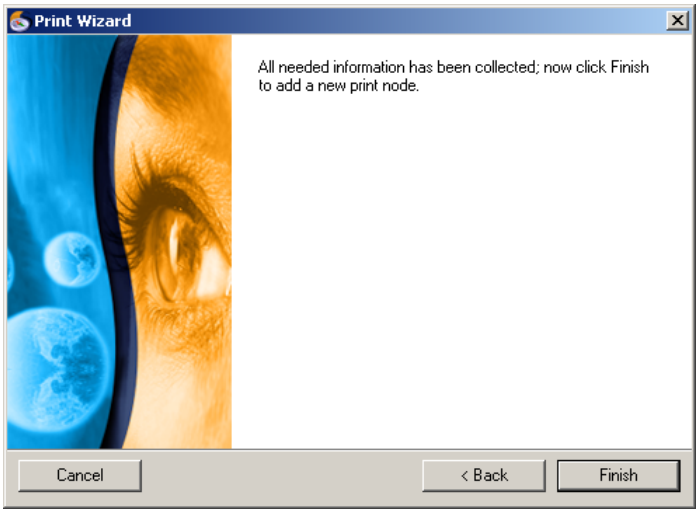


Figure 3-207: Print Wizard final page

5. Click **Finish**.

The print node is displayed in the working area Scorto Strategy Maven:

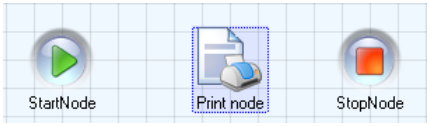


Figure 3-208: Print node is displayed in the working area

Linking variables

To link variables:

1. Right-click the model execution node to view the drop-down menu.

The drop-down menu is displayed:

Figure 3-209: Drop-down menu

2. Select **Properties**.

The **Variable Mapping** tab of the Properties of Print Node is displayed:

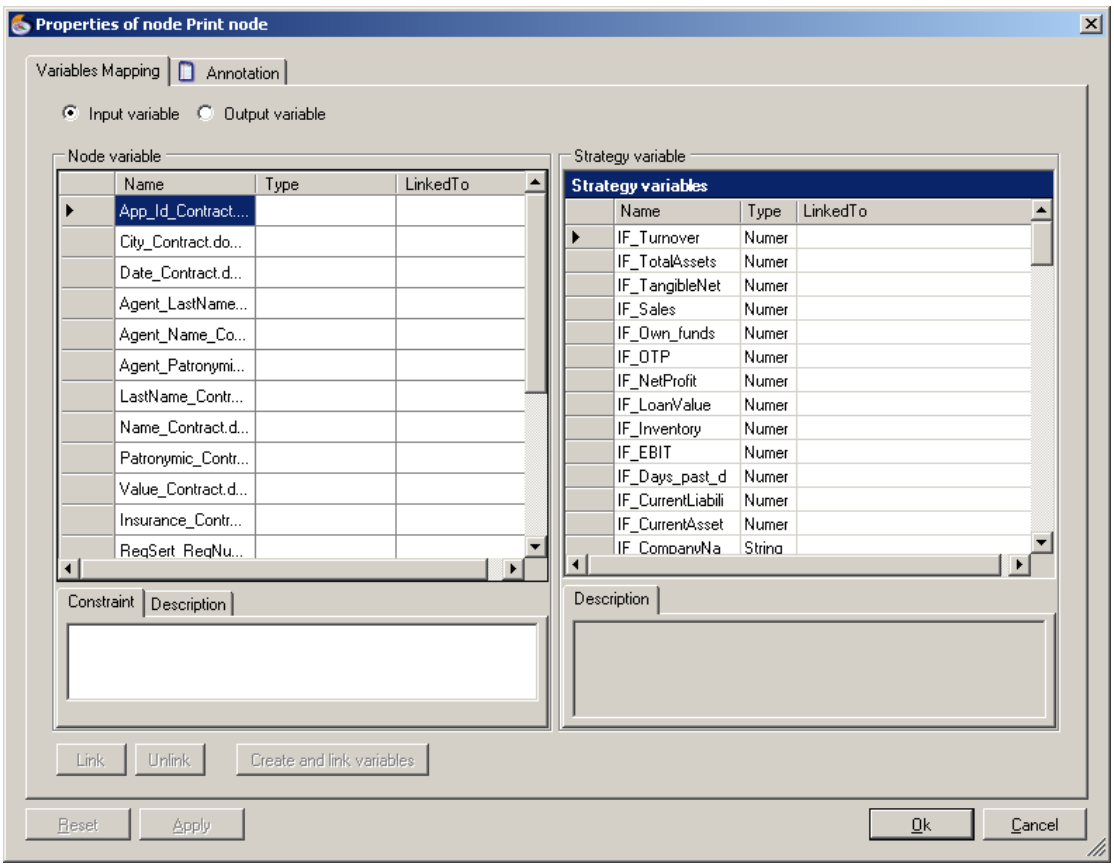


Figure 3-210: Variable Mapping tab of the Properties of Print node dialog box

3. In the **Node variable** area, select the required variable to be linked.

4. In the **Strategy variables** area, select the variable, to which the node variable is to be linked.
5. Click **Link**.

The following confirmation is requested:

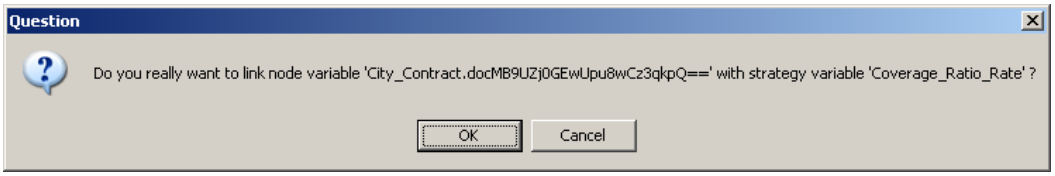


Figure 3-211: Confirmation request

6. Click **OK**.

The two variables are successfully linked:

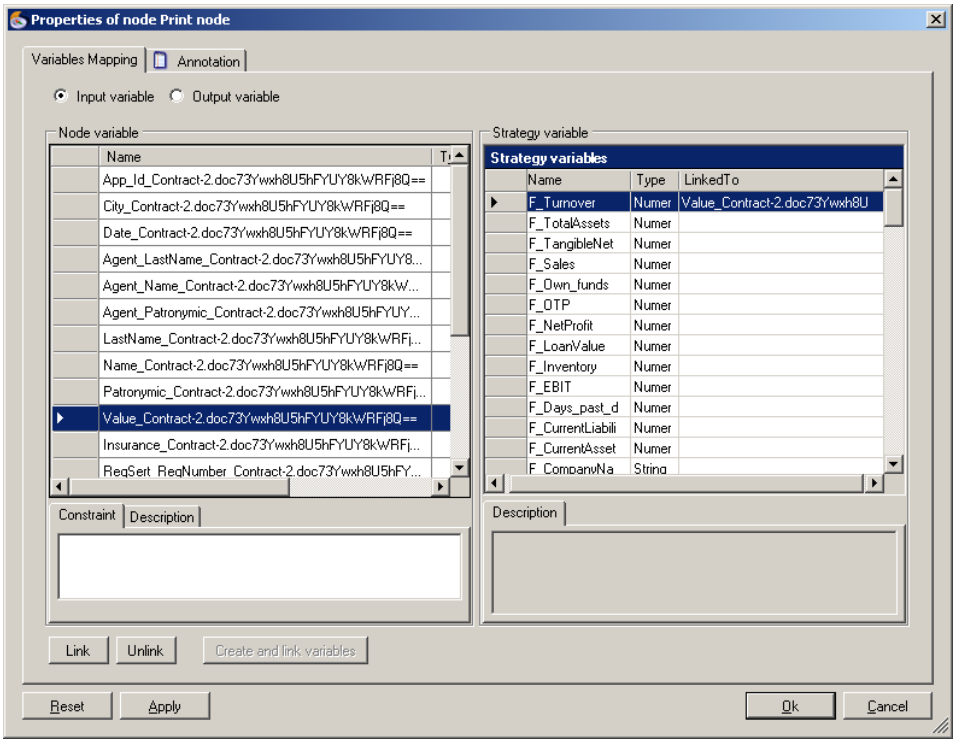


Figure 3-212: Variable link information in the *Properties of Print Node* dialog box

7. (*Optional*) Repeat steps 3-6 for the rest of the variables.

The variables are successfully linked.

Note: *When linking variables, several node variables can be linked to the same strategy variable.*

Other Properties

This sections explains how to set a custom name for the node and a description of the node. Changing these properties of the node is optional.

To set a custom name and description of the node:

1. Right-click the model execution node to view the drop-down menu.

The drop-down menu is displayed:

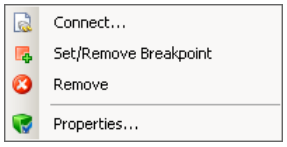


Figure 3-213: Drop-down menu

2. Select **Properties**.

The **Variable Mapping** tab of the Properties of Print Node is displayed:

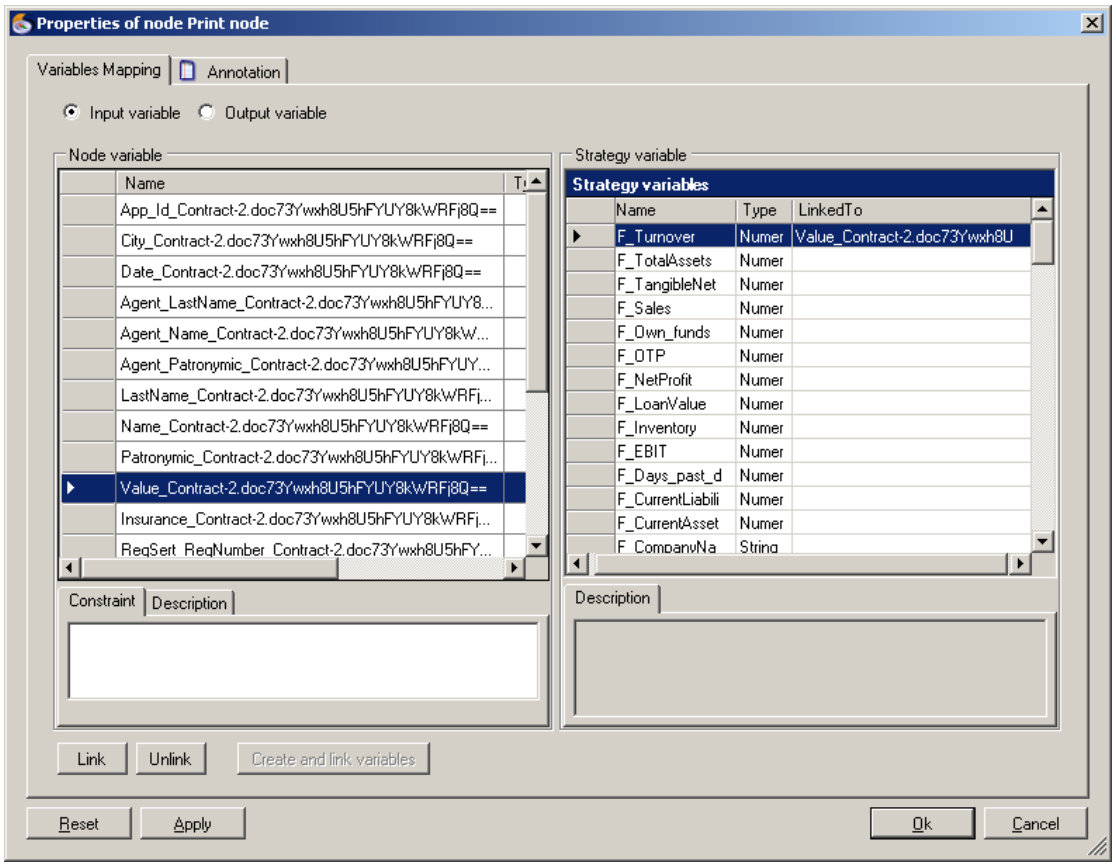


Figure 3-214: The Variable Mapping tab of the *Properties of Print Node* dialog box is displayed:

3. Select the **Annotation** tab.

The **Annotation** tab is displayed:

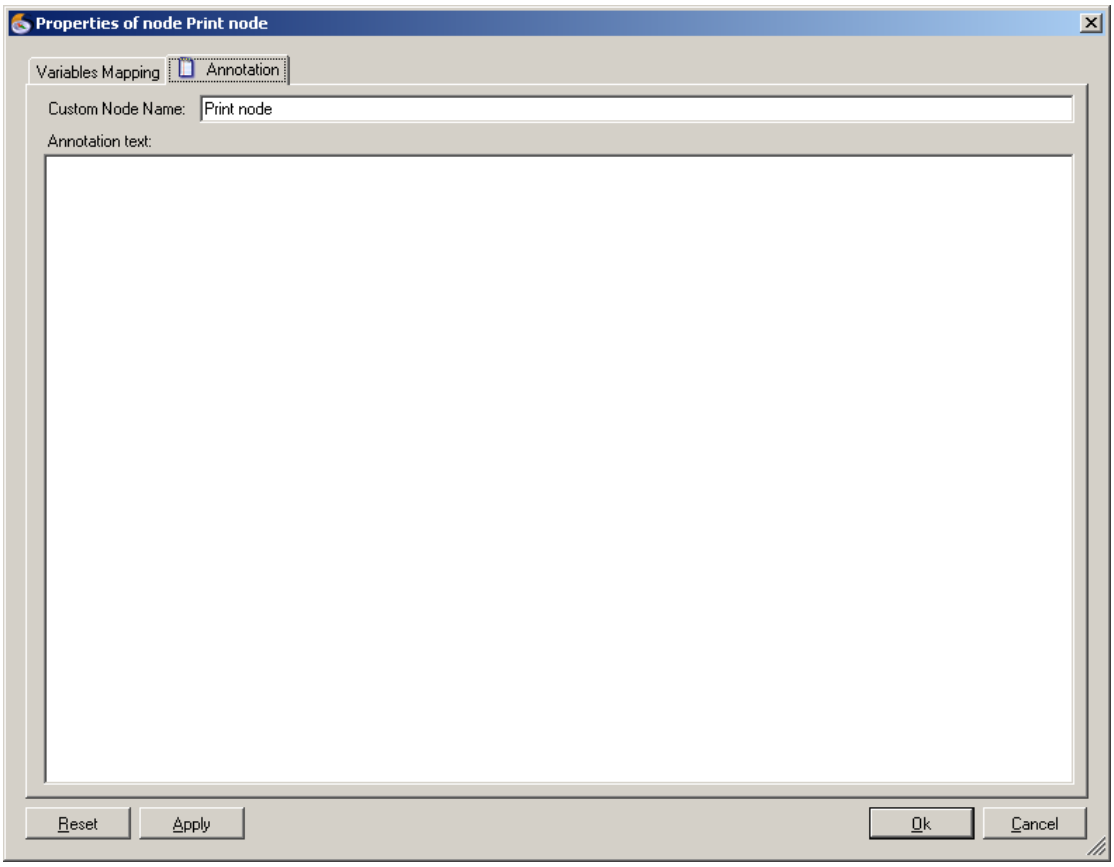


Figure 3-215: Annotation tab

4. In the **Custom Node Name** box, enter a custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Setting the breakpoint

Setting the breakpoint upon a node makes it possible to stop the simulation of the strategy on that node. To learn

more about the step-by-step simulation of strategies, see Strategy Execution Simulation, page 190.

To set the breakpoint:

1. In the visual editor area, select the required node.
2. Right-click the selected node.

The drop-down menu is displayed:

Figure 3-216: Drop-down menu

3. From the drop-down menu, select **Set/Remove Breakpoint**.

A red square is displayed on the node with the breakpoint.

Figure 3-217: Breakpoint graphic indication

The breakpoint is successfully set.

Parallel Execution Nodes

Application can be processed in parallel within the strategy through the following two nodes: the Parallel Processing Start node and the Parallel Processing Stop node.

The Parallel Processing Start node has one input and many outlets. The Parallel Processing Stop node has many inputs and one outlet.

The Parallel Execution nodes are contained in the standard Scorto Strategy Maven package.

Parallel execution nodes in the strategy

To include the Parallel Execution nodes into the strategy:

1. Using the mouse, drag and drop the Parallel Execution Start node from the **Nodes Container** into the application's working area.
2. Link the required node to the Parallel Execution node, for example, as shown in the picture below:

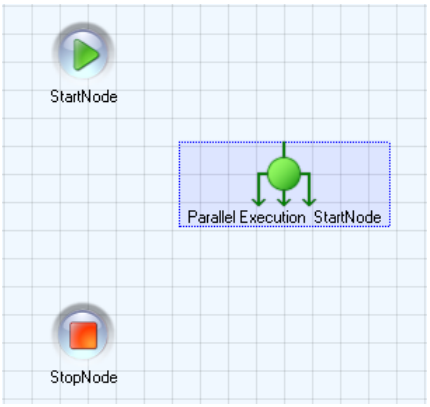


Figure 3-218: Start node is connected to the Parallel Execution Start node (fragment, example)

3. Using the mouse, drag and drop the node that will be involved in parallel execution from the **Nodes Container** into the application's working area.
4. Using the **Connect** command on the drop-down menu, connect the Parallel Execution Start node to the node that was added in the previous step of this procedure, for example, as shown in the picture below:

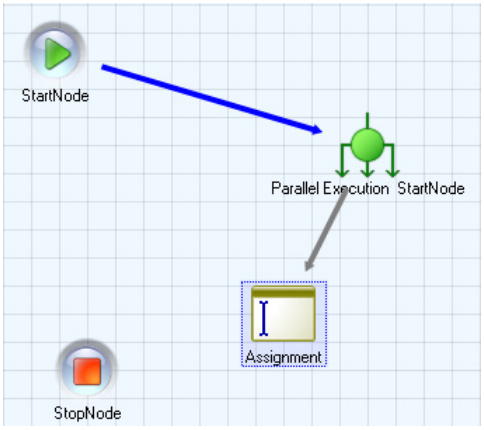


Figure 3-219: The first node for parallel execution is added (fragment, example)

5. Set the required variables and their values for the node that participates in parallel execution. For more information on how to set variables and their values, see the description of the node that is added.

Note: *The set variable cannot be used in other nodes that participate in parallel execution.*

6. Using the mouse, drag and drop another node that will be involved in parallel execution from the **Nodes Container** into the application's working area.
7. Using the **Add execution branch** command from the drop-down menu of the Parallel Execution node, add an execution branch.
8. Using the **Connect** command on the drop-down menu, connect the Parallel Execution Start node to the node that was added in Step 6 of this procedure, for example, as shown in the picture below:

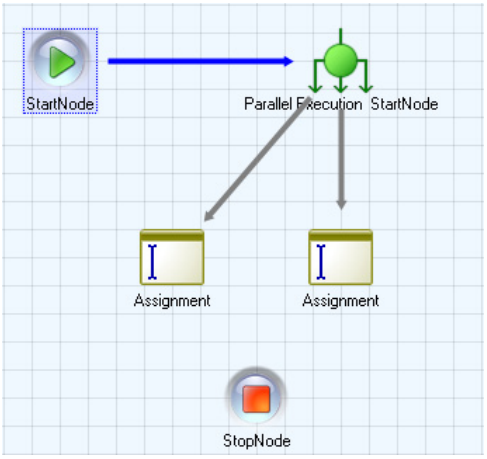


Figure 3-220: The second node for parallel execution is added (fragment, example)

9. Repeat Step 5 for the second added node.
10. (*Optional*) Repeat Steps 6-9 to add the rest of the nodes that will participate in parallel execution.
11. Using the mouse, drag and drop the Parallel Execution Stop node from the **Nodes Container** into the application's working area, for example, as shown in the picture below:

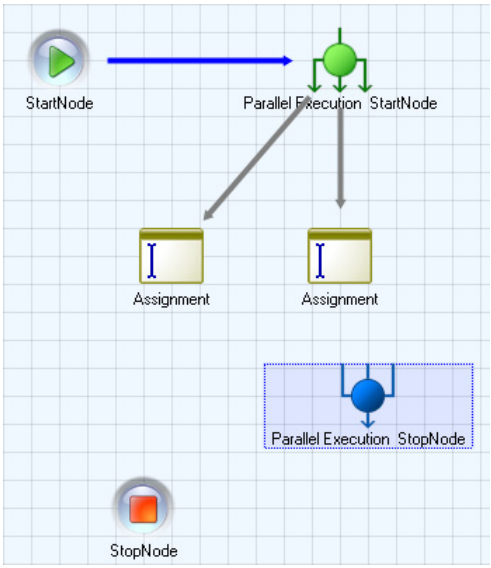


Figure 3-221: The Parallel Execution Stop node is added (fragment, example)

12. Connect all the nodes participating in parallel execution to the Parallel Execution Stop node, as shown in the picture below:

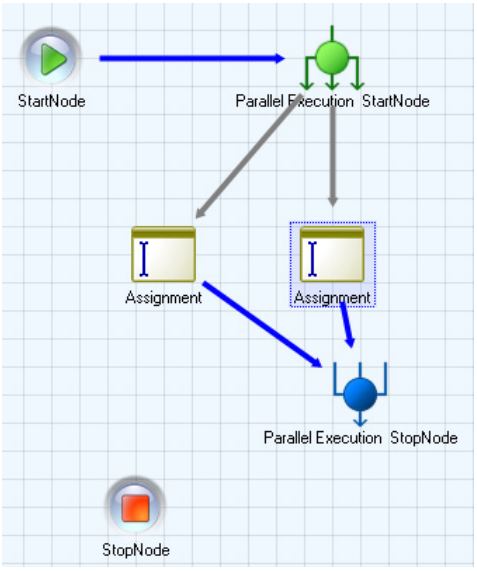


Figure 3-222: Nodes participating in parallel execution are connected to the Parallel Execution Stop node (*fragment, example*)

13. Connect the Parallel Execution Stop node to the appropriate node, for example, as shown in the picture below:

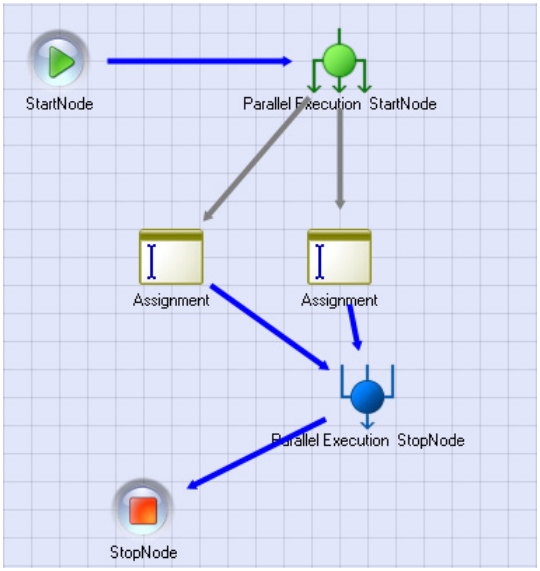


Figure 3-223: The Parallel Execution Stop node is connected to the next strategy node

14. (*Optional*) Start the strategy debugging in full run, as described in section Strategy Execution Simulation, page 190.

After the debugging is complete, its results are displayed:

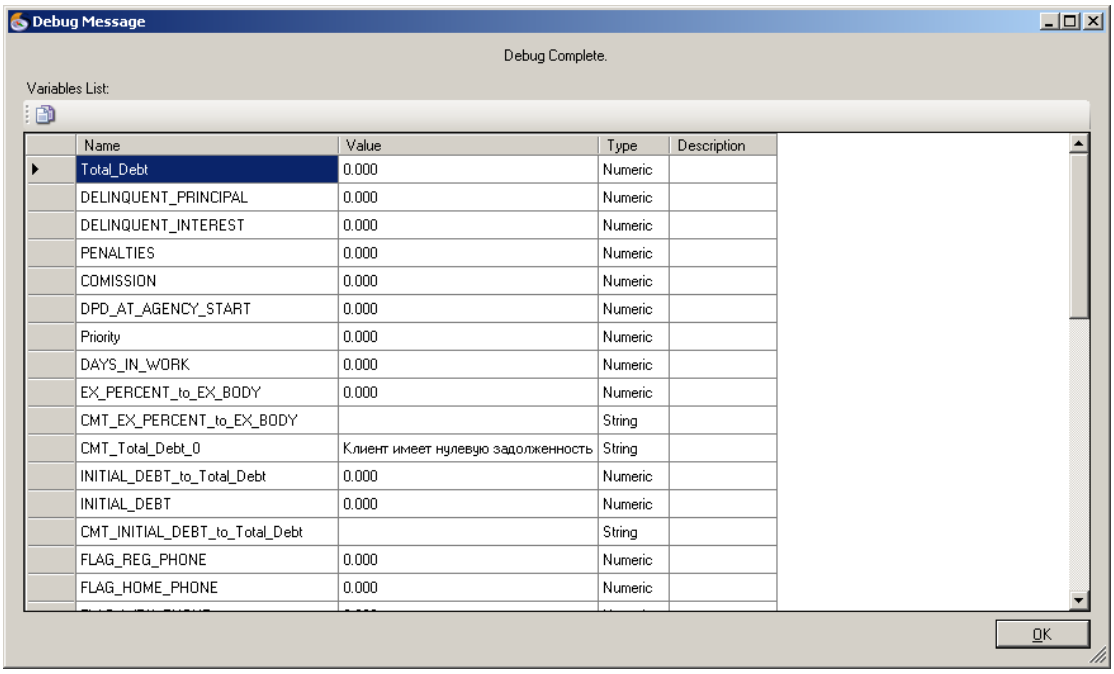


Figure 3-224: Debugging results

15. Review the debugging results and click **Ready**.

The Parallel Execution nodes are successfully added to the strategy.

Nodes Properties

To set the nodes properties:

1. Drag and drop either node into the visual editor area.
2. Double-click the node.

The drop-down menu is displayed:

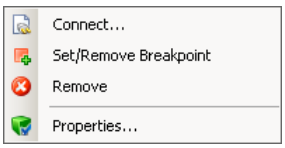


Figure 3-225: Drop-down menu

3. Select **Properties**.

The properties dialog box for the selected node is displayed:

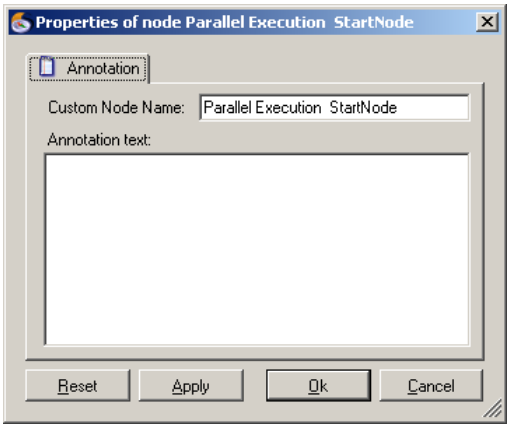


Figure 3-226: Properties of Parallel Execution Start node dialog box

4. In the **Custom Node Name** box, enter a custom name of the node.
5. In the **Annotation** box, enter a description of the node.
6. Click **OK**.

The custom name and description of the node are successfully set.

Credit Product Node

The Credit Product node is a node that is included in the standard Scorto Strategy Maven package.

To add the Credit Product node to the strategy:

1. Using the mouse, drag and drop the Credit Product node from the **Nodes Container** into the application's working area.

The Credit Product Selection dialog box is displayed:

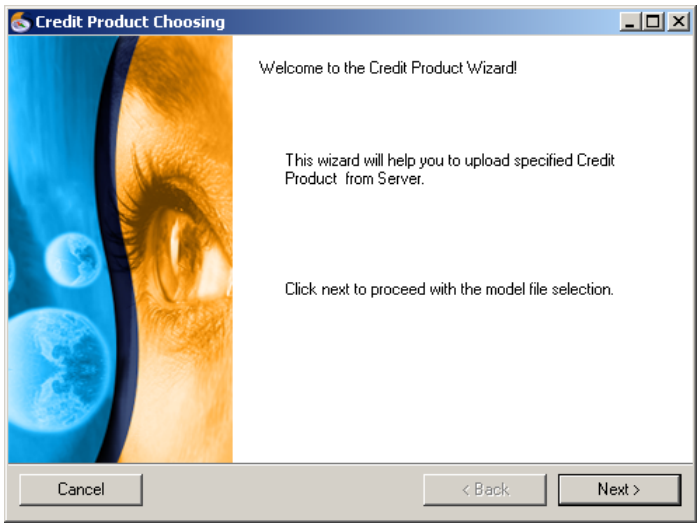


Figure 3-227: Credit Product Selection dialog box

2. Click **Next**.

The following dialog box is displayed:

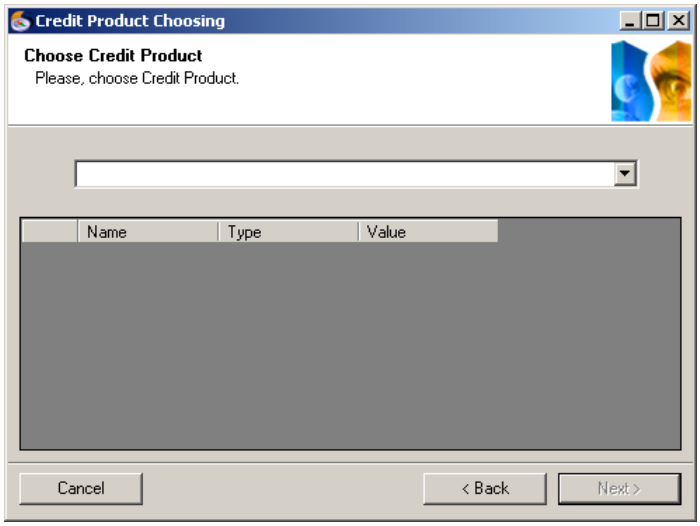


Figure 3-228: Credit Product Selection dialog box(Step 2)

3. From the drop-down list, select the required credit product.

The parameters of the credit product and their values are displayed in the table within the dialog box:

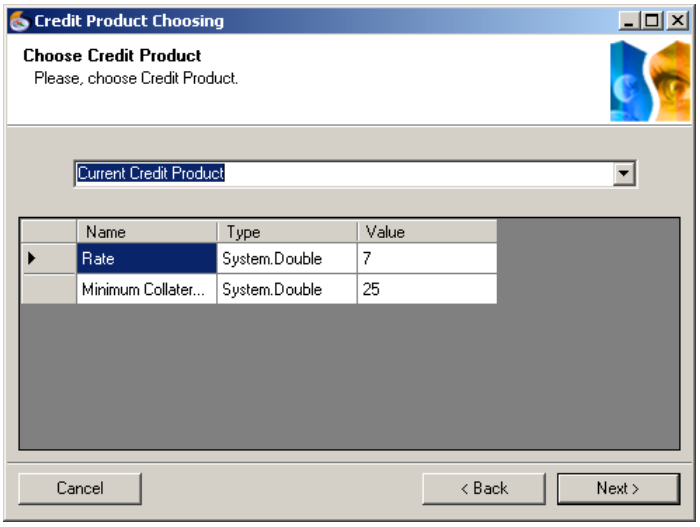


Figure 3-229: Parameters and their values for the selected credit product (Step 3)

4. Click **Next**.

The selection of the credit product is confirmed:

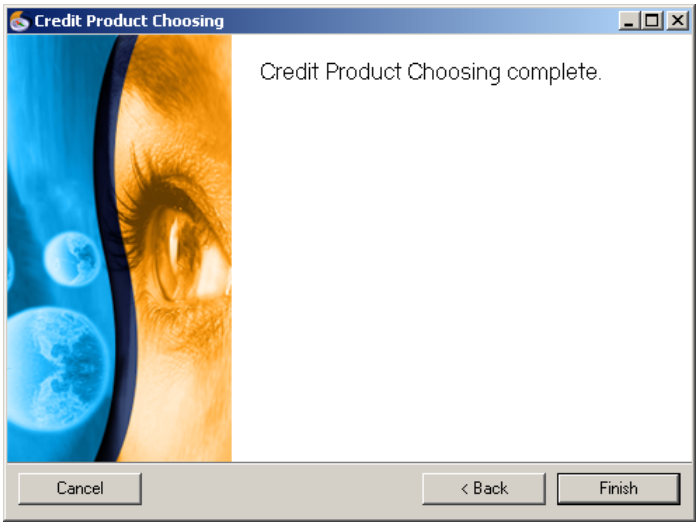


Figure 3-230: Informational message

5. Click **Finish** to exit the wizard.

The selected credit product is successfully added to the strategy:

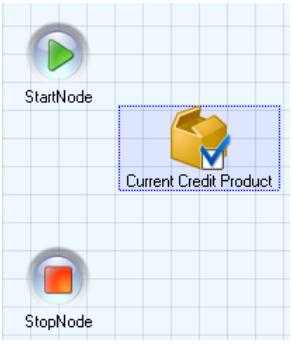


Figure 3-231: Credit product is added to the strategy

Strategies

Strategy is the sequence, in which an application is processed in the system. A detailed description of the procedures for working with strategies in the Scorto Strategy Maven application can be found in chapter Working With Strategies, page 179.

Strategy Properties

A strategy has the following properties:

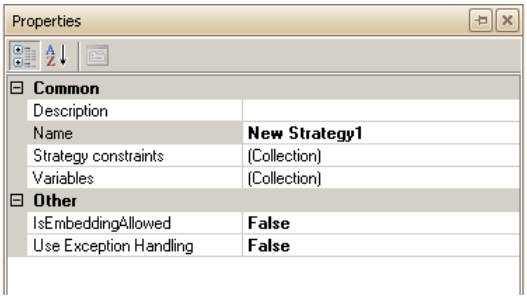


Figure 3-232: Strategy Properties

The table below lists the descriptions and accepted values for each property:

Property	Accepted Values	Description
Common		

Property	Accepted Values	Description
Description	Free text	Text description
Name		Name of the strategy
Strategy constraints		Value constraints
Variables		Strategy variables
Other		
IsEmbedingAllowed	True/False	Defines whether it is possible to embed this strategy into another strategy.
Use Exception Handling	True/False	Defines, whether it is possible to use exception handling. By default, this property is set to FALSE. When set to TRUE, it enables the user to define the processing sequence for the applications that were previously processed with errors. The strategy tools allow defining both a sequence that is completely identical to the normal processing sequence and a sequence that is different from the normal one.

4 WORKING WITH STRATEGIES

This chapter contains information on how to work with strategies in Scorto Strategy Maven.

Overview

This chapter comprises the following sections:

Creating Strategies, page *179*, explains how to create a new strategy.

Saving Strategies, page *183*, explains how to save a strategy locally or on the server.

Opening Strategies for Editing, page *187*, explains how to open a strategy locally or on the server.

Strategy Execution Simulation, page *190*, explains how to perform a full or step-by-step simulation of strategy execution.

Creating Strategies

To create a strategy:

1. From the **File** menu, select **New strategy**

— OR —

On the toolbar, click .

The *New Strategy* dialog box is displayed:

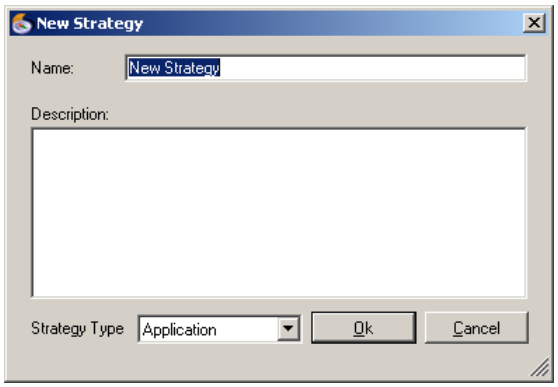


Figure 4-1: New Strategy dialog box

2. Select the **Application** type for the strategy.
3. In the **Name** box, enter the name for the new strategy.
4. In the **Description** box, enter the description for the new strategy.
5. Click **OK**.

The new strategy containing by default the Start and Stop nodes is displayed:

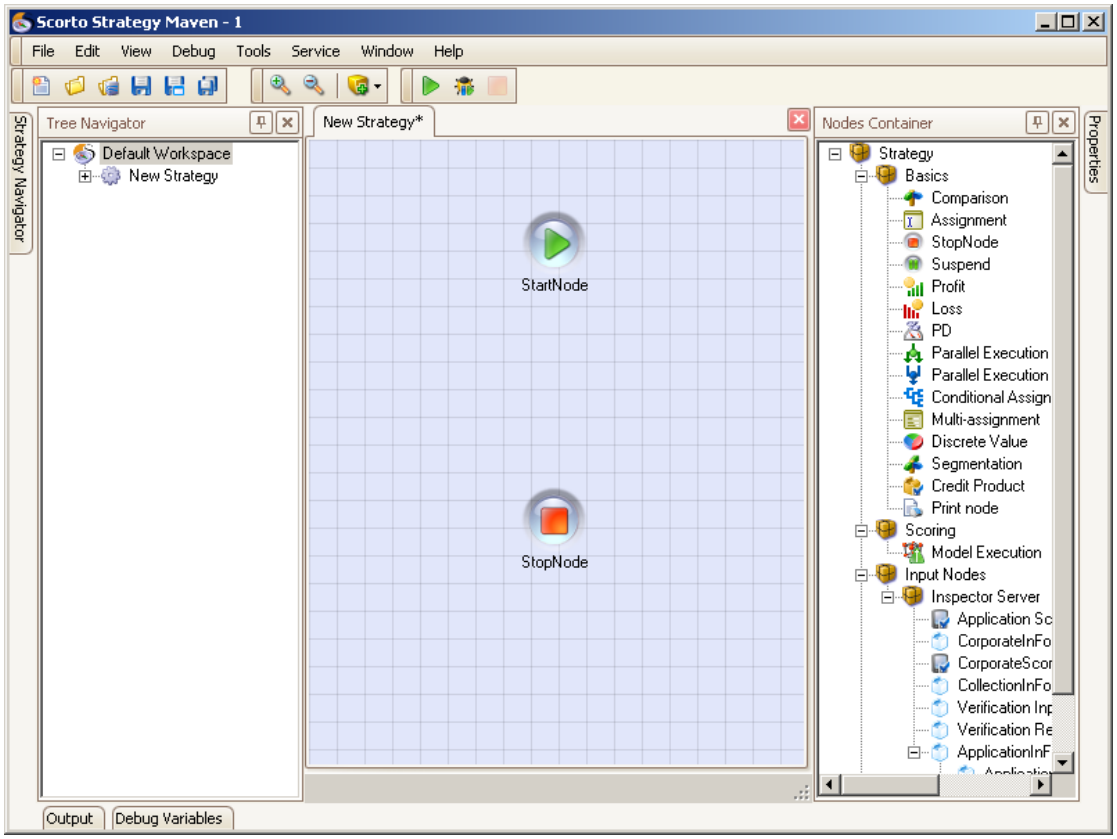


Figure 4-2: New strategy is created

6. Enter data for the **IsEmbeddingAllowed** and **Use Exception Handling** properties of the strategy. For more information on these properties, refer to section *Strategy Properties*, page *176*.
7. To add the required node, do one of the following:
8. Using the mouse, drag and drop the required node from the Nodes Container area into the visual editor working area;
9. From the **Edit** menu, select the **Add Item** command and then select the required node.

10. In the properties of the added node, link the input and output variables with the corresponding variables of the strategy, as described in section *Linking variables*, page *49*.
11. Repeat Steps 6-8 of this procedure to add other required steps to the strategy.
12. Use the **Connect** command on the drop-down menu to connect the nodes in a logical sequence for strategy processing.

When the **Connect** command is selected from the drop-down menu, the *Connect Nodes* dialog box is displayed:

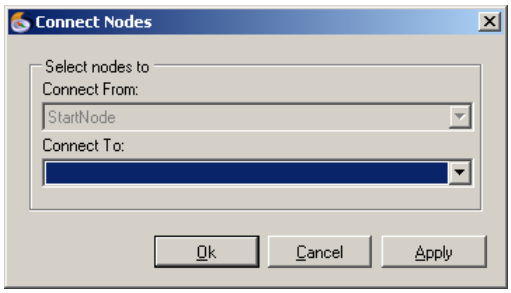


Figure 4-3: *Connect Nodes* dialog box

13. From the **Connect to** drop-down list, select the node, to which the current node must be connected, and click **OK**.

Nodes connections are displayed in the visual editor:

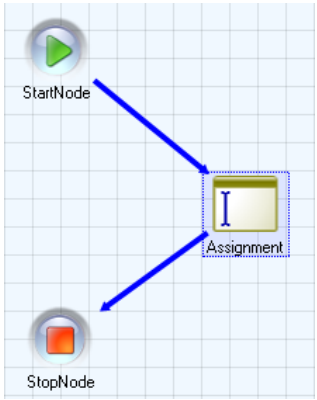


Figure 4-4: Graphic display of nodes connection

Note: *The arrows that graphically represent the connections between the nodes are color-coded depending on the type of the selected outlet. The node types and color codes are interrelated as follows:*

- *Next — blue arrow;*
- *No — red arrow;*
- *Reject — brown arrow;*
- *Yes —green arrow;*
- *Submit — gray arrow.*

14. For nodes with more than one outlet, repeat Step 11 of this procedure until all the outlets are connected to the corresponding nodes. Skip this step for nodes that have only one outlet.

Saving Strategies

The Scorto Strategy Maven application allows the user to save created or edited strategies both on the local machine and on the server.

Saving Strategies on Local Machine

To save a strategy on the local machine:

1. Do one of the following:
   - From the **File** menu, select **Save strategy**;
   - On the toolbar, click .

The *Save as* dialog box is displayed:

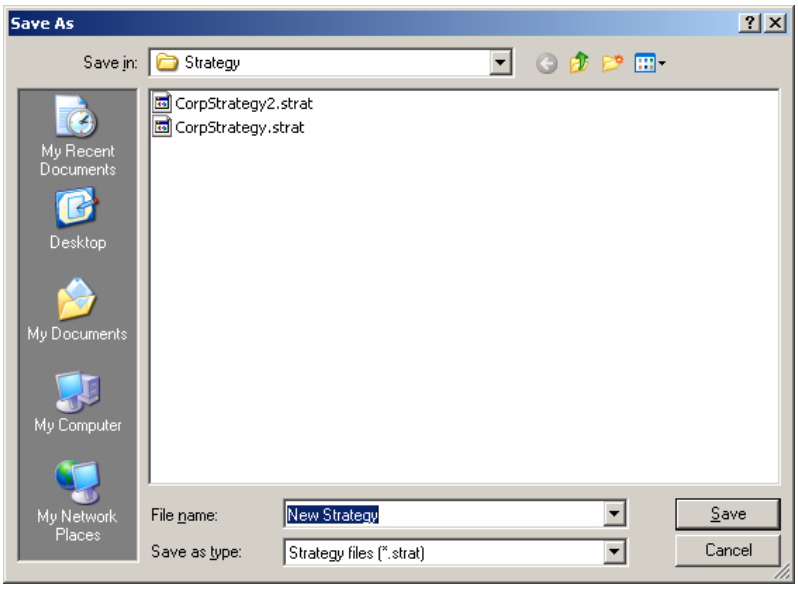


Figure 4-5: Dialog box *Save as*

2. In the **Save in** box, select the folder, in which the strategy must be saved.
3. In the **File name** box, enter the filename for the strategy.
4. Click **Save**.

Successful saving of the strategy is confirmed:

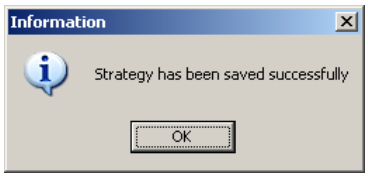


Figure 4-6: Confirmation that the strategy is saved

Saving Strategies on Server

Procedures for saving strategies

To save the strategy that was not previously uploaded to the server:

1. From the **File** menu, select **Upload strategy**.

On the successful upload, the following confirmation is displayed:

Figure 4-7: Confirmation of successful upload

2. Click **OK**.

To save the strategy that was previously uploaded to the server:

1. From the **File** menu, select **Upload strategy**.

The Strategy upload confirmation dialog box is displayed:

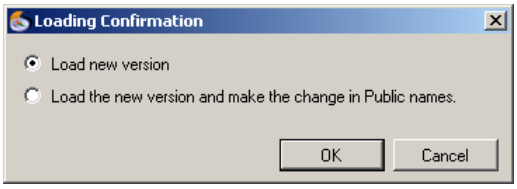


Figure 4-8: Strategy upload confirmation dialog box

2. To save the new version of the existing strategy, select Load new version.

To save the strategy as a new strategy, select Load the new version and make the change in Public names.

3. Click **OK**.

If the strategy is identical to the one on the server, the following error message is displayed:

Figure 4-9: Error message

4. Change the strategy and repeat the saving procedure.

The message informing the user on the successful upload of the strategy is displayed:

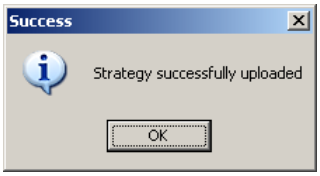
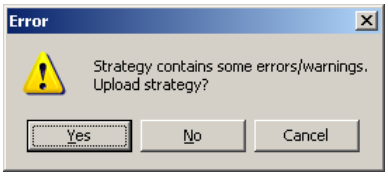


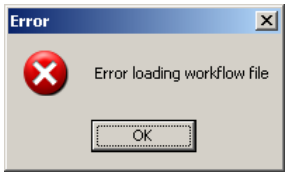
Figure 4-10: Strategy upload successful confirmation message

The process of uploading is displayed in the Scorto patron application.

Possible errors that may occur when uploading strategies

The table below lists the most common error that may occur when uploading strategies.

Error	Explanation	User Action
	This message is displayed when the user attempts to upload a strategy that contains unused variables or variables that are linked to the parameters of several nodes.	If you are perfectly sure that the strategy is correct, click **Yes**. Otherwise, click **No**/**Cancel**, return to the editing mode, delete unused variables or delete multiple connections between one strategy and parameters of several nodes.

Error	Explanation	User Action
	This error message is displayed when the strategy file is read-only.	Click **OK**. Find the strategy file and un-check the "read-only" attribute. For more information on editing the properties of files refer to the interactive help that is part of the operating system.
	Errors are found following the attempt to upload the strategy.	Read messages in the Debugging working area, correct errors that were found by the application and try uploading the strategy again.

Opening Strategies for Editing

Depending upon the location where the strategy is saved, the Scorto Strategy Maven application allows opening strategies both locally and remotely.

Opening Strategies on the Local Machine

To open a strategy on the local machine:

1. Do one of the following:
   - From the **File** menu, select **Open strategy remote**;
   - On the toolbar, click .

The *Open* dialog box is displayed:

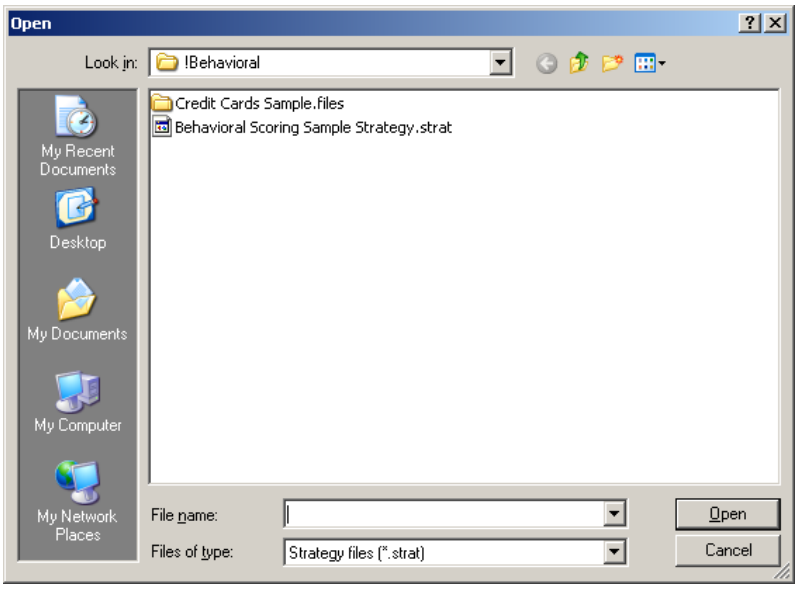


Figure 4-11: *Open* dialog box

2. In the **Save in** box, select the folder, from which the strategy must be opened.
3. In the **File name** box, enter the filename for the strategy.
4. Click **Open**.

   The locally saved strategy is successfully opened.

Opening Strategies Remotely

To open a strategy on the server:

1. Do one of the following:
   - From the **File** menu, select **Open strategy remotely**;
   - On the toolbar, click .

The *Open from remote server* dialog box is displayed:

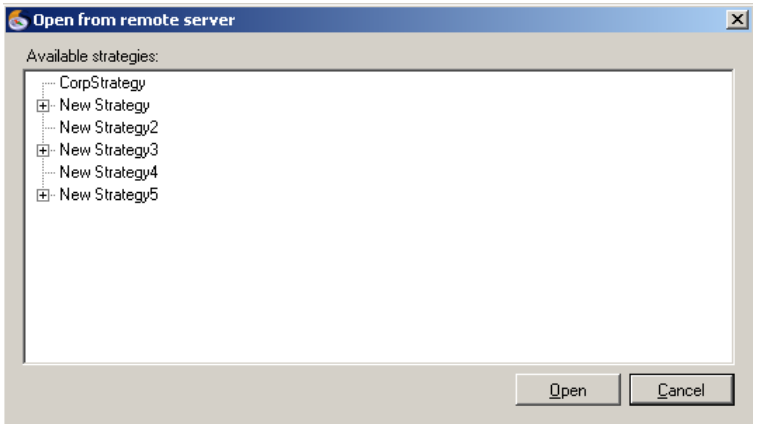


Figure 4-12: *Open from remote server* dialog box

2. To view versions of the strategy, click ⊞.

   The available versions of the strategy are displayed:

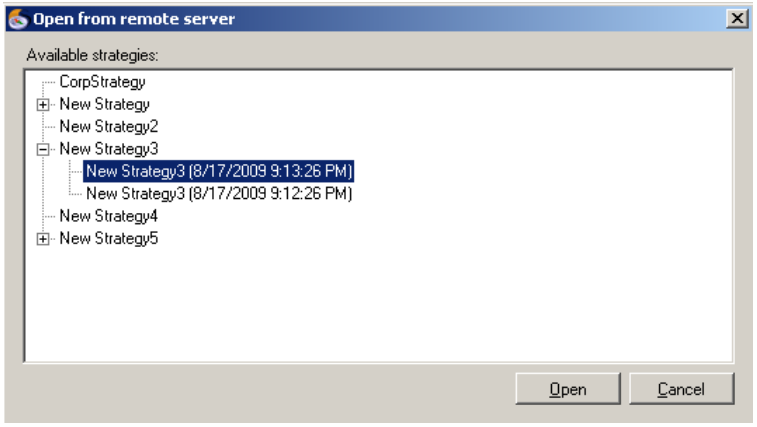


Figure 4-13: Available versions of strategy

3. Select the required strategy or one of its versions.
4. Click **Open**.

   The selected strategy is successfully opened remotely.

Strategy Execution Simulation

The Scorto Strategy Maven application enables the user to check the execution of a strategy through the strategy execution simulation functionality. Strategy execution can be simulated in the following two modes: step-by-step and full.

Prior to simulating the execution of the strategy, make sure that:

- All node inputs and outputs must be connected to inputs and outputs of other nodes.
- All node parameters must be linked to the strategy variables.
- An output for simulation must be selected for the nodes with one or more outputs.
- It is recommended that for nodes with output parameters the parameter simulation values be defined, especially if such values are used subsequently within the strategy.

Strategy execution simulation results in the following:

- The values of the variables are changed after the corresponding nodes get processed.
- The output area displays all errors that have been discovered.

Variables Values for Simulation

The Scorto Strategy Maven application enables the user to set the variable values that will be used in simulating the strategy execution.

To set variables values for simulation:

1. In the visual editor area, right-click the required node.
2. From the drop-down menu, select the **Properties** command.

The *Properties* dialog box is displayed:

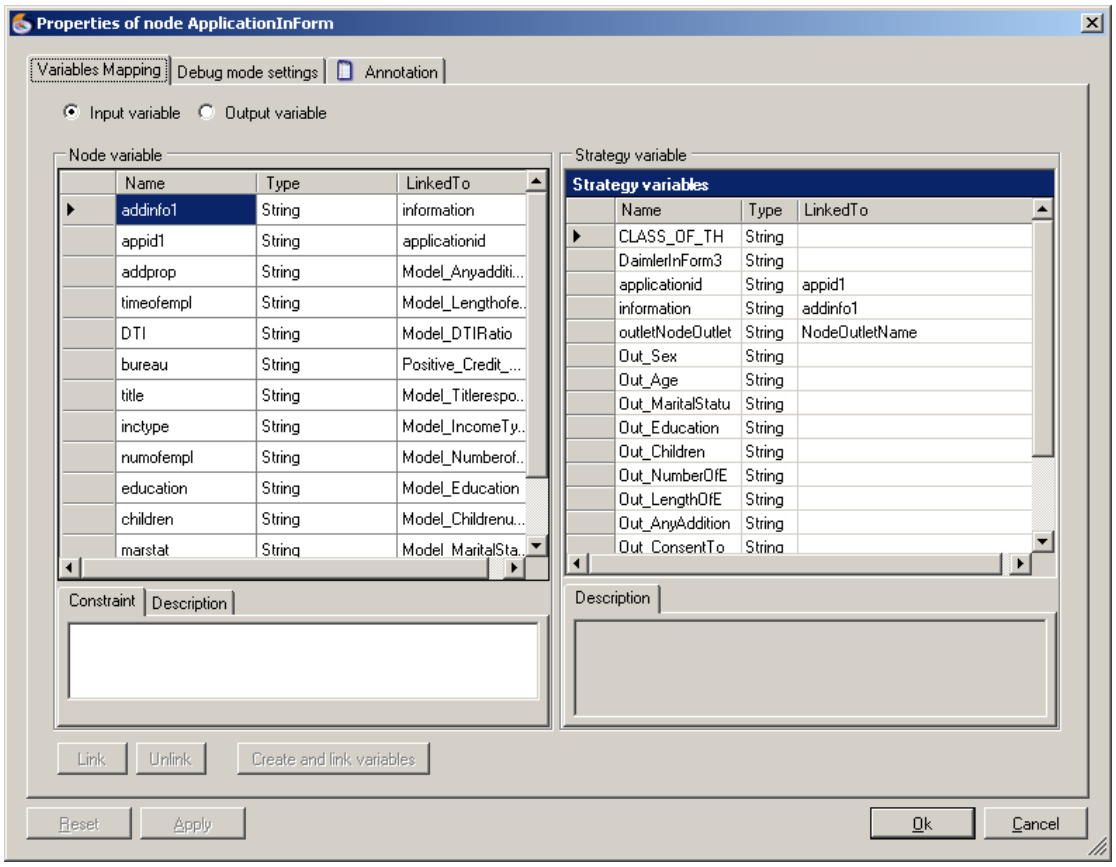


Figure 4-14: *Properties* dialog box

3. Navigate to the **Debug mode settings** tab.

The **Debug mode settings** tab is displayed:

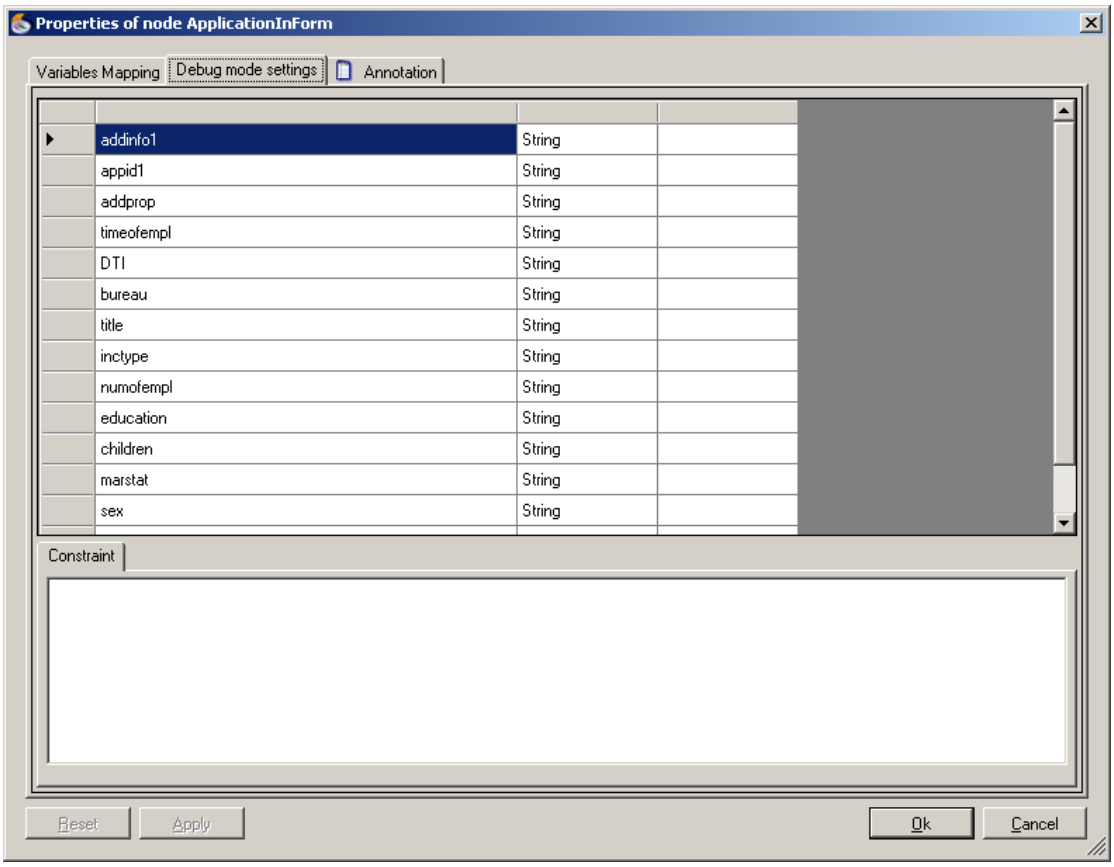


Figure 4-15: Debug mode settings tab

4. In the **Value** box, set values for the variables.
5. Click **OK**.

Variables values for simulation are successfully set.

Strategy Execution Simulation (Full Run)

To simulate strategy execution in the Full Run mode:

1. Do one of the following:

   - From the **Debug** menu, select **Full Run Debug Mode**;
   - On the toolbar, click .

   If the strategy contains the node with a set breakpoint, the simulation process will stop at that node, intermediate results of the simulation are displayed in the **Debug variables** working area:

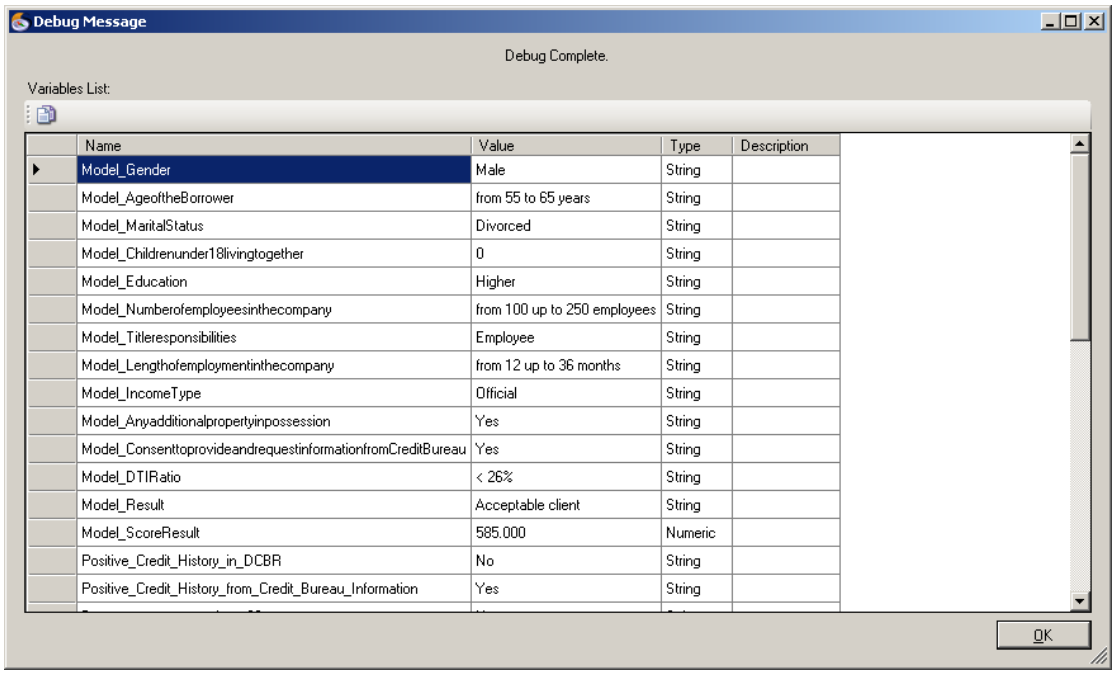


Figure 4-16: Intermediate results of simulation

2. To proceed with the simulation, on the toolbar click . If there is no node with a set breakpoint in the strategy, skip this step.

When the strategy simulation process in the full run mode is complete, the simulation results are displayed in the Debug Message:

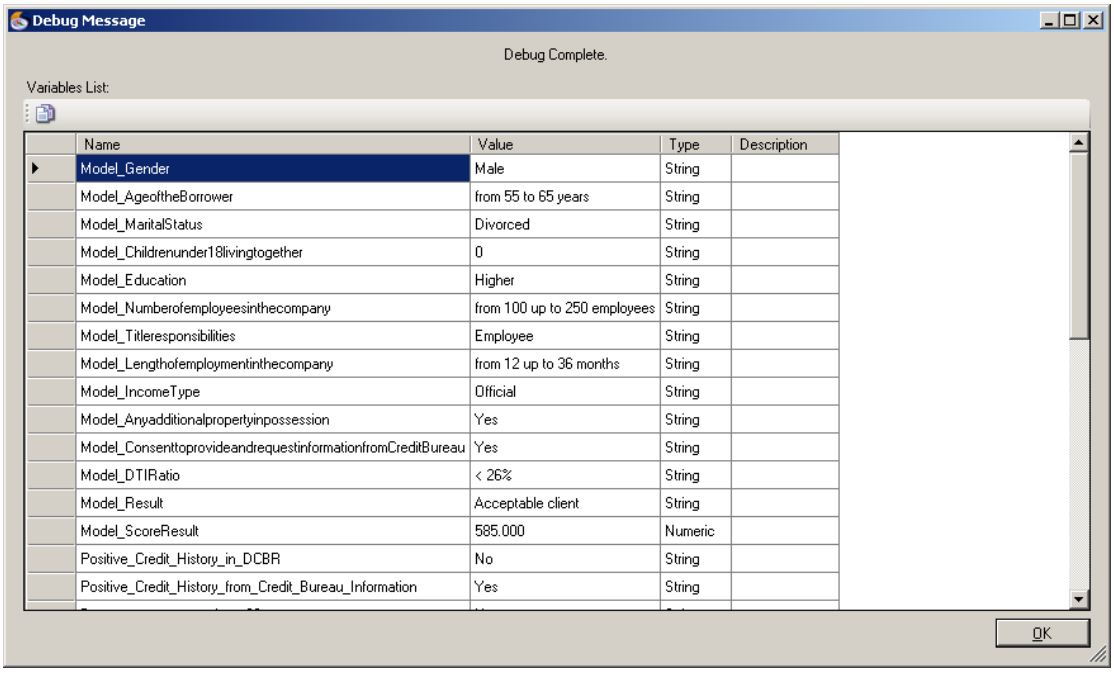


Figure 4-17: Debug Message dialog box

3. Click **OK**.

Strategy Execution Simulation (Step-by-Step)

To simulate strategy execution in the Step-by-Step mode:

1. Do one of the following:
   - From the **Debug** menu, select **Step-by-Step Debug Mode**;
   - On the toolbar, click .

The process of step-by-step simulation of strategy execution is started (the node, at which the execution is stopped, is highlighted):

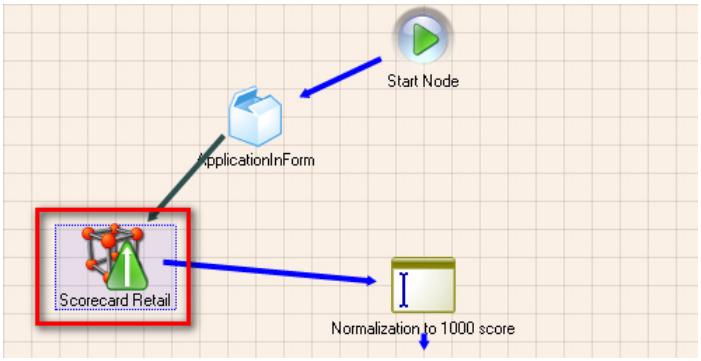


Figure 4-18: Step-by-Step Strategy Execution Simulation

The intermediate simulation results (Figure 4-16) are displayed in the **Debug variables** working area.

2. Click the button to navigate to the next node until the strategy execution simulation is complete.

When the simulation is complete, its results are displayed in Debug Message dialog box:

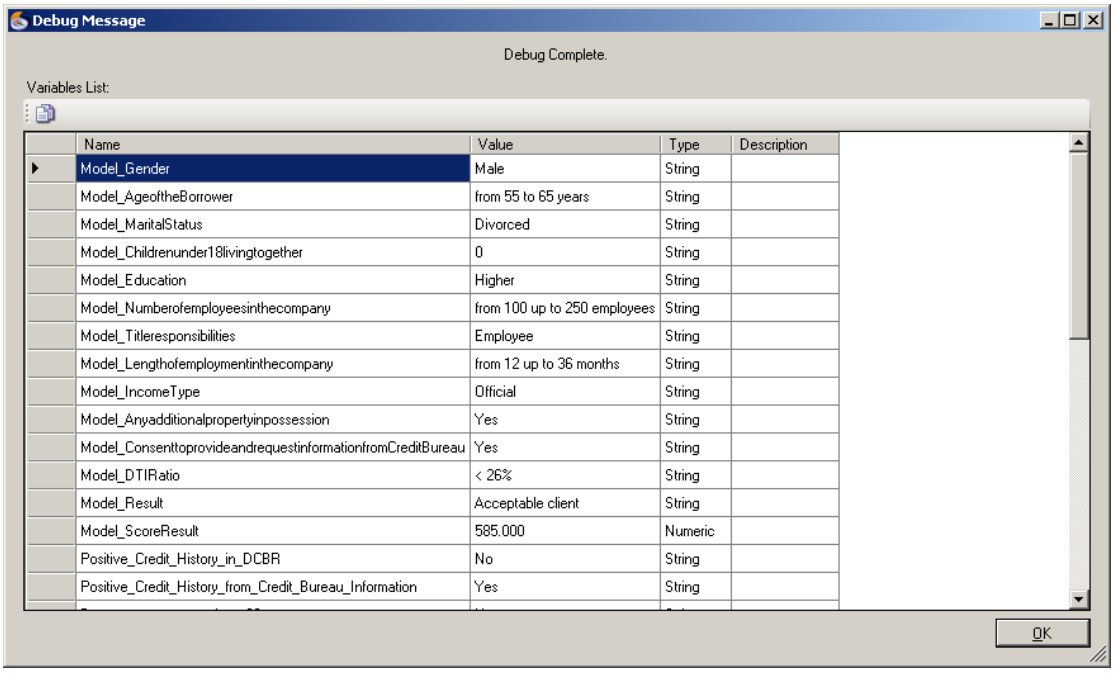


Figure 4-19: Debug Message dialog box

3. Click **OK**.

5 FUNCTIONS IN USE (REFERENCE)

This chapter contains reference information on functions used in Scorto Strategy Maven.

The following types of functions are used in the comparison and assignment nodes of the Scorto Strategy Maven application:

- mathematical functions;
- string functions;
- logical function;
- informational variables functions;
- customized function.

The corresponding sections below contain brief explanations of how to use these functions.

Overview

This chapter comprises the following sections:

Mathematical functions, page *198*, contains explanations and the syntax of the mathematical functions.

String Functions, page *199*, contains explanations and the syntax of the string functions.

Logical Function, page *199*, contains explanations and the syntax of the logical functions.

Informational Variables Functions, page *200*, contains explanations and the syntax of the informational variables functions.

Customized Function, page *200*, contains explanations and the syntax of the customized function.

Mathematical functions

The explanation and syntax of the mathematical functions in the comparison and assignment nodes of the Scorto Strategy Maven application are given in the table below.

Function	Explanation and Syntax
EXP()	The EXP function calculates the value of the e constant raised to the given power. The functions has the following syntax: EXP(number)
COS()	The COS function returns the cosine of an angle and has the following syntax: =COS(number) Where number is the angle in radians
SIN()	The SIN function returns the cosine of an angle and has the following syntax: =SIN(number) Where number is the angle in radians
LN()	The LN function returns the natural logarithm of the argument expressed as a positive number. The functions has the following syntax: =LN(number)
LOG()	The LOG function returns the logarithm of a positive number to the base of 10. The syntax is: =LOG(number, base)
ABS()	The ABS function returns the absolute value of a number and has the following syntax: = ABS (number)
ATN()	The ATN function returns the arctangent of an angle and has the following syntax: =ATN(number) Where number is the angle in radians
SQR()	The SQR function returns the value of a number raised to the second power =SQR(number)
SQRT()	The SQRT function returns the square root of a positive number and has the following syntax: =SQRT(number) The number argument must be a positive number

Function	Explanation and Syntax
ROUND()	The ROUND function rounds the number expressed as its argument to the specified number of digits and has the following syntax: =Round(number, number of digits)

String Functions

The explanation and syntax of the string functions in the comparison and assignment nodes of the Scorto Strategy Maven application are given in the table below.

Function	Explanation and Syntax
LIKE()	The LIKE function determines if a character expression matches another character expression. = LIKE "string"
SUBSTR	The SUBSTR () function returns the character substring from the given string, starting at the position of given length. = SUBSTR ("string", position, length)
VAL	The Val() function returns the numbers in the argument string as a numeric value of appropriate type. = Val (string)
STR	The STR() returns the string equivalent of a number. = STR (number)
HEX	The HEX () function returns a string representing the hexadecimal value of a number. = HEX (number)

Logical Function

The explanation and syntax of the logical function used in the comparison and assignment nodes of the Scorto Strategy Maven application are given in the table below.

Function	Explanation and Syntax
IIF	Condition checking function. The function has 3 arguments. The first argument is the condition to be checked. The second argument is the value to return if the condition evaluates to TRUE. The third argument is the the value to return if the condition evaluates to FALSE. =IIF(condition, number (string), number (string))

Informational Variables Functions

The explanation and syntax of the informational variables functions used in the comparison and assignment nodes of the Scorto Strategy Maven application are given in the table below.

Function	Explanation and Syntax
GETVARVALUE()	The function returns the string value of the informational variable whose name is used as the argument. = GETVARVALUE(string)

Customized Function

The explanation and syntax of the customized function used in the comparison and assignment nodes of the Scorto Strategy Maven application are given in the table below.

Function	Explanation and Syntax
PERFORMCALCULATION()	The function returns the string value of the calculated custom function whose name is used as the first parameter. = PERFORMCALCULATION(string, string, …, string)