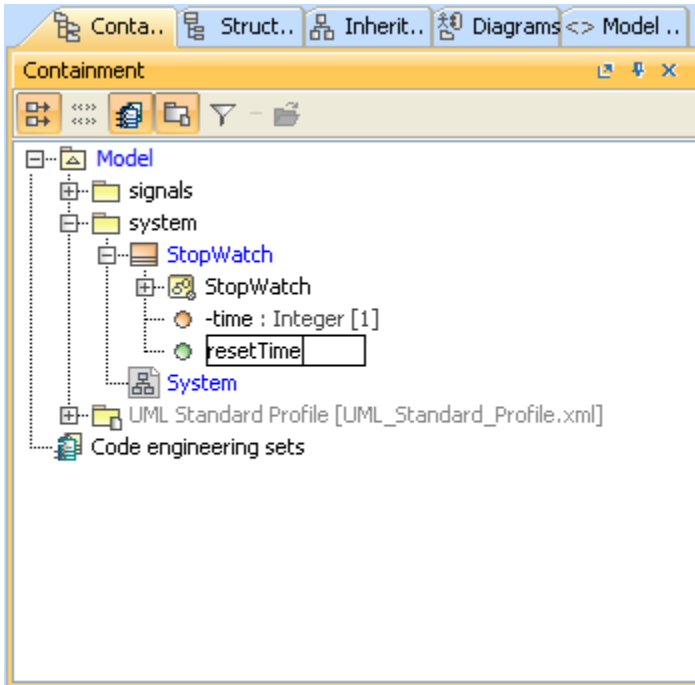# Creating resetTime Operation and resetTime Activity

To create a **resetTime** operation

1. Right-click the **StopWatch** Class in the containment browser and select **New Element** > **Operation**.
2. Name the new operation *"resetTime"*. The resetTime operation will be created.

Next, we will use an Activity to define the **resetTime** operation. The Activity will contain the Actions and the flows that will show the steps to set the **time** value to zero.

To create a **resetTime** Activity

1. Right-click the **StopWatch** Class in the containment browser and select **New Element** > **Activity**.
2. Name the created Activity *"resetTime"*.
3. Add an Activity diagram to the **resetTime** Activity by right-clicking the **resetTime** Activity in the containment browser and select **New Diagram** > **A ctivityDiagram**. The new Activity diagram will be created under the **resetTime** Activity. We will use the default name of this diagram, which is *"res*
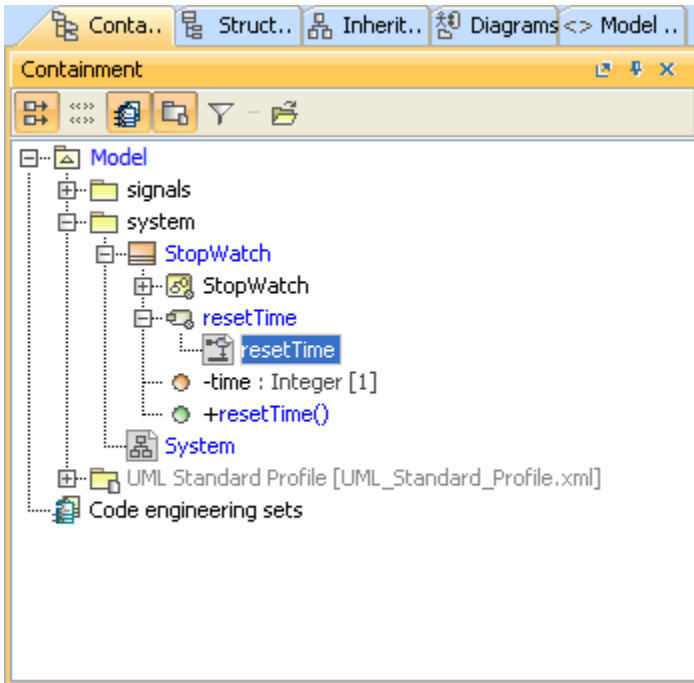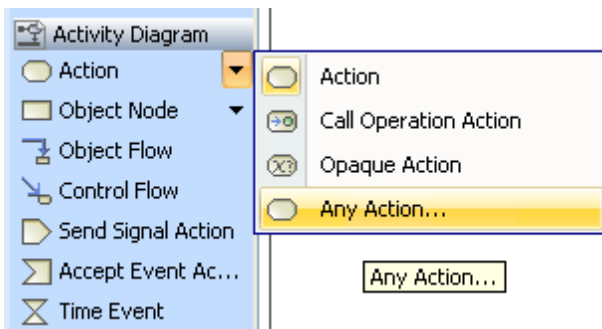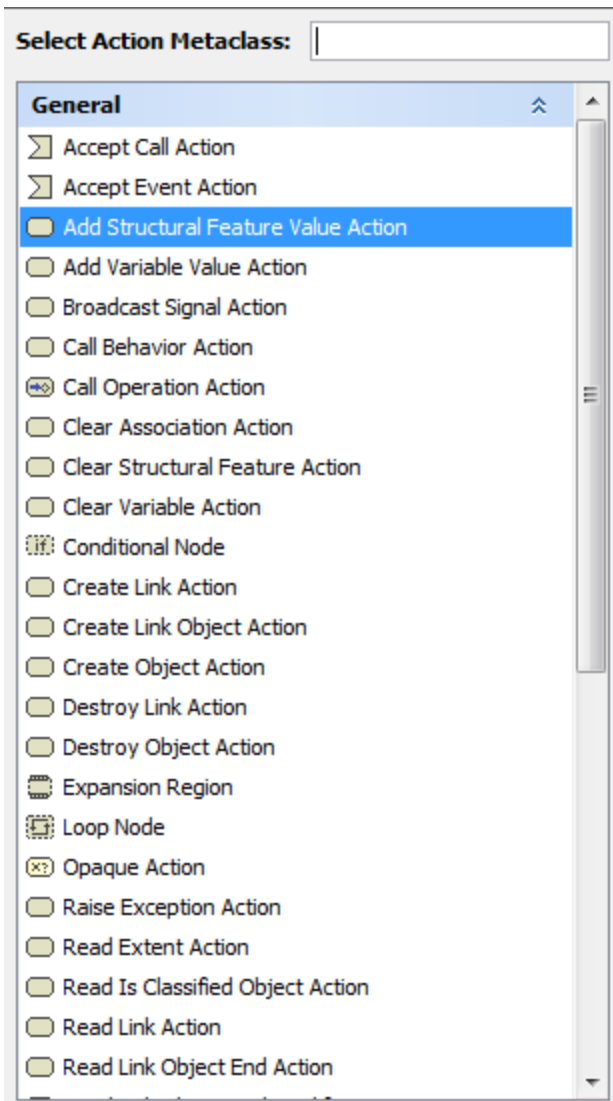
On the **resetTime** Activity diagram, you will need an AddStructuralFeatureValueAction to set the value of **time:Integer[1]** to zero. The structural feature of the AddStructuralFeatureValueAction must be set as the time attribute of the StopWatch Class.

To reset the time value of the StopWatch Object to zero using an AddStructuralFeatureValueAction

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1. Click **Action** > **Any Action...** on the Activity diagram toolbar (see the following figure). The **Select Action MetaClass** dialog will open.


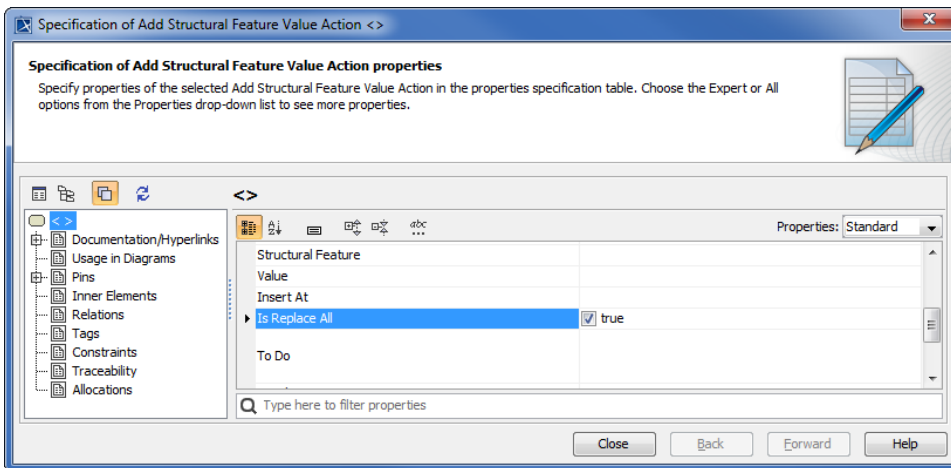2. Select **AddStructuralFeatureValueAction** and click **OK**.

Select Action Metaclass: |

General

- Accept Call Action
- Accept Event Action
- **Add Structural Feature Value Action**
- Add Variable Value Action
- Broadcast Signal Action
- Call Behavior Action
- Call Operation Action
- Clear Association Action
- Clear Structural Feature Action
- Clear Variable Action
- Conditional Node
- Create Link Action
- Create Link Object Action
- Create Object Action
- Destroy Link Action
- Destroy Object Action
- Expansion Region
- Loop Node
- Opaque Action
- Raise Exception Action
- Read Extent Action
- Read Is Classified Object Action
- Read Link Action
- Read Link Object End Action

3. Click the **resetTime** Activity diagram to place the position of the created **AddStructuralFeatureValueAction**.

4. Right-click the symbol of the **AddStructuralFeatureValueAction** on the **resetTime** Activity diagram and select **Specification** to open its Specification window.
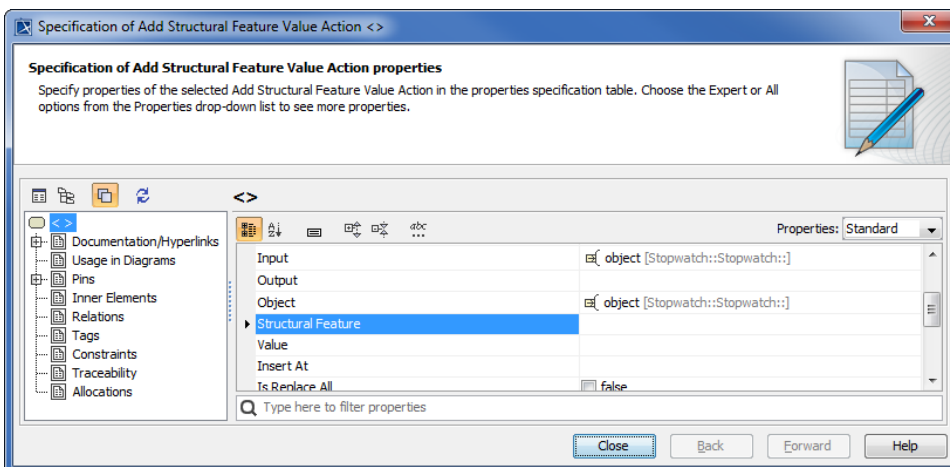
5. Scroll down to the **Structural Feature** row, select it, and click the [...] button. The **Select Property** dialog will open.
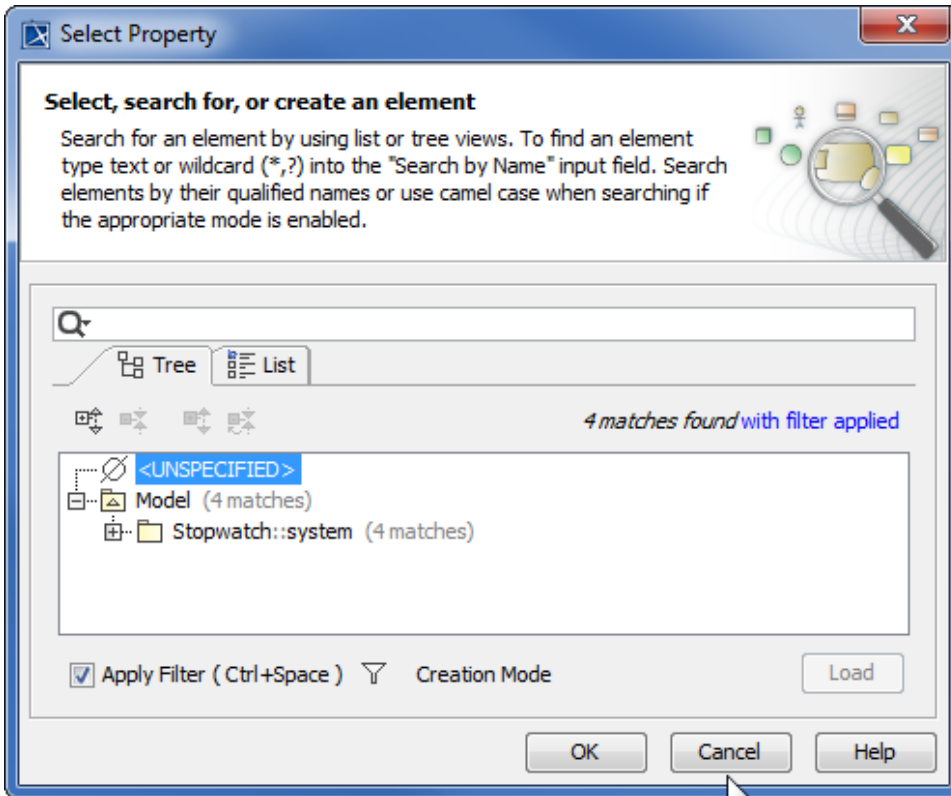

6. The Attribute **time:Integer[1]** of the **StopWatch** Class will be selected as the structural feature of this Action in this example.
7. Click **OK** to close the **SelectProperty** dialog and return to the Specification window.
8. Click the **Is ReplaceAll** row and select the check box. The **AddStructuralFeatureValueAction** will remove any existing value and assign a new value to the structural feature.


We need to specify input pins for both the Object and the value of the **AddStructuralFeatureValueAction** metaClass. The object of the Classifier that contains the structural feature and its value will be supplied through these input pins respectively.
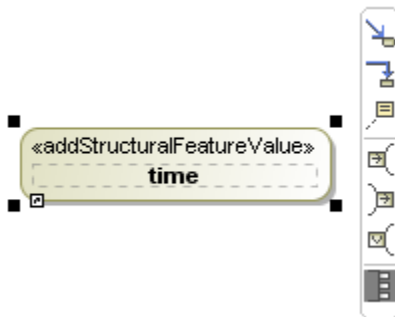
To create input pins

1. Click the **Pins** node on the left-hand side of the **AddStructuralFeatureValueActionSpecification** dialog. The pins that are related to the **AddStructuralFeatureValueAction** will appear.
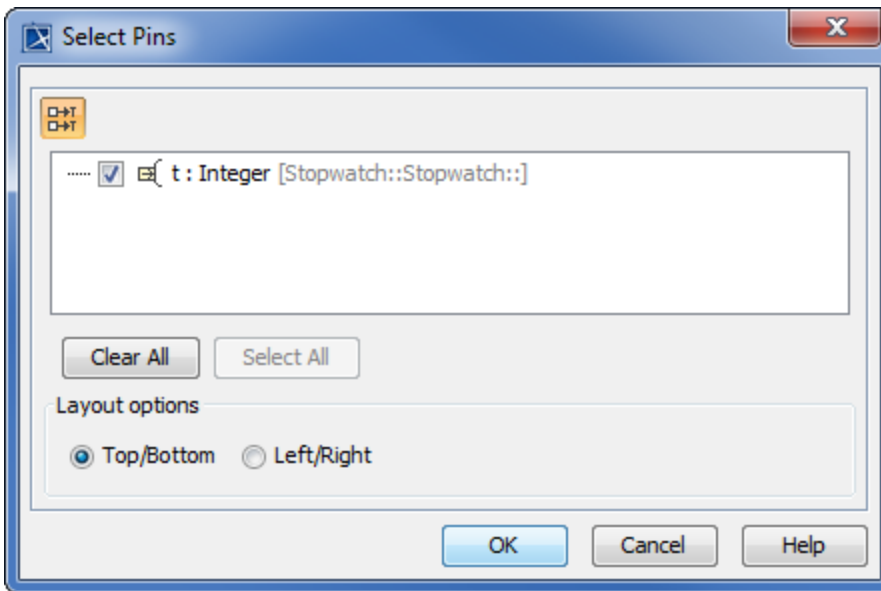2. Click the **Value** row and select **InputPin**.
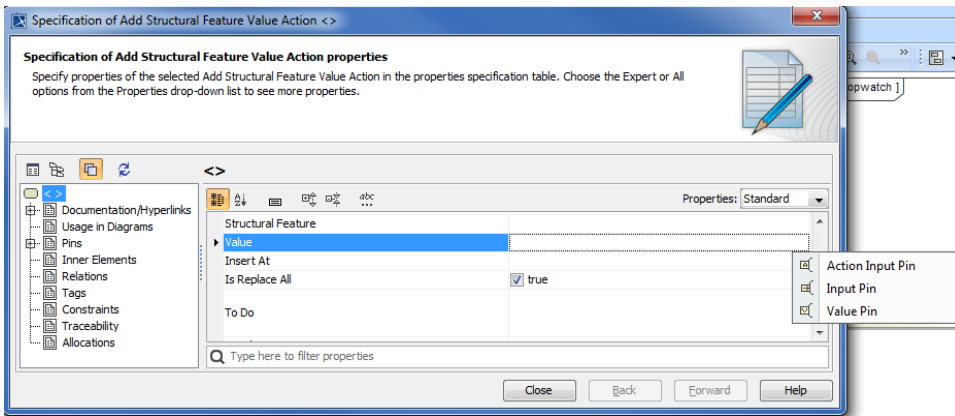
3. Name the input pin *"t"* and specify its type as **Integer**.
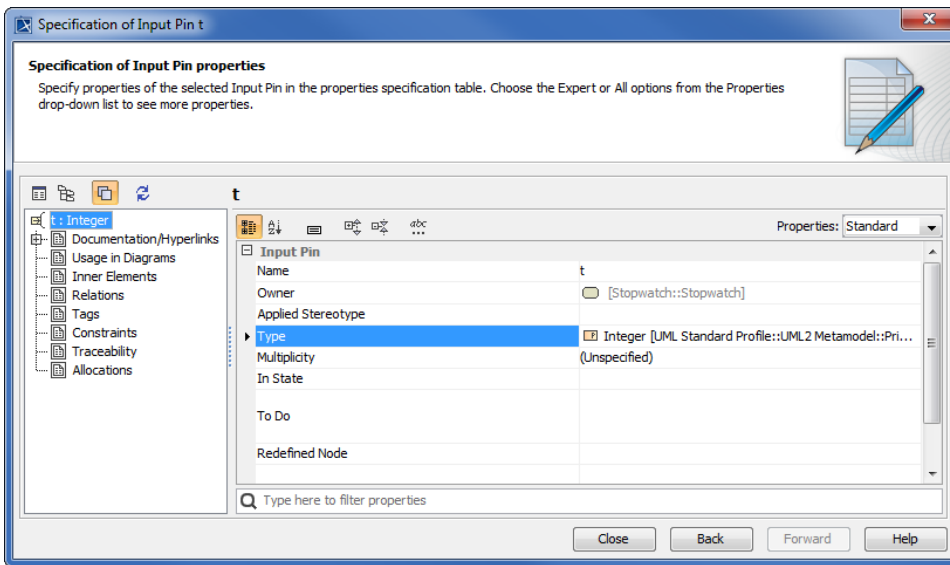

4. Click the **Close** button.

5. Select **AddStructuralFeatureValueAction** on the **resetTime** Activity diagram and click the **Display Pins** icon on the smart manipulator toolbar.
The **Select Pins** dialog will open.

6. Select all pins and click **OK**.

To allow the object of the StopWatch to supply the value to self input using a ReadSelfAction

1. Click **Action** > **AnyAction...** on the Activity diagram toolbar. The **SelectActionMetaClass** dialog will open.
2. Select **ReadSelfAction** and click **OK**.
3. Click the **resetTime** Activity diagram. A ReadSelfAction will be created on the diagram.
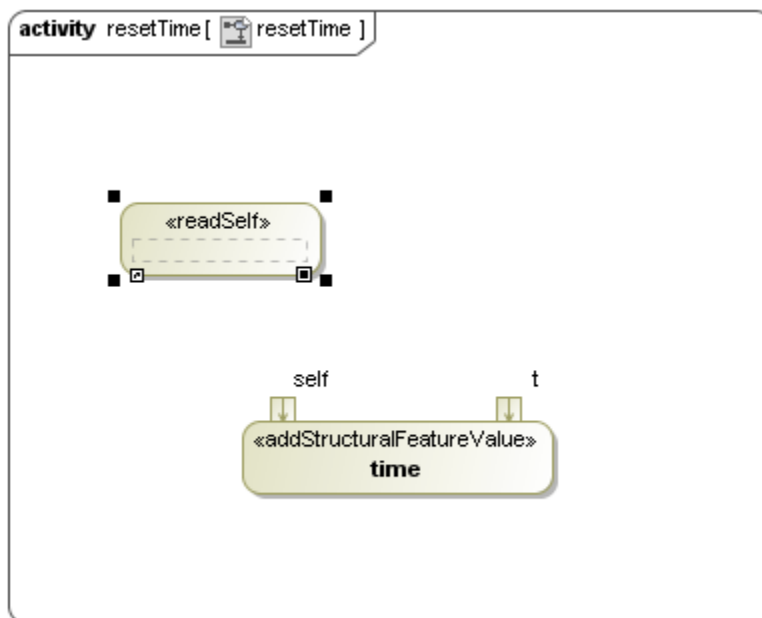
4. Click **ObjectFlow** on the Activity diagram toolbar and click the **self** output pin of the ReadSelfAction and the **self** input pin of the AddStructuralFeatureValueAction. An object flow will be created to connect these two pins together.
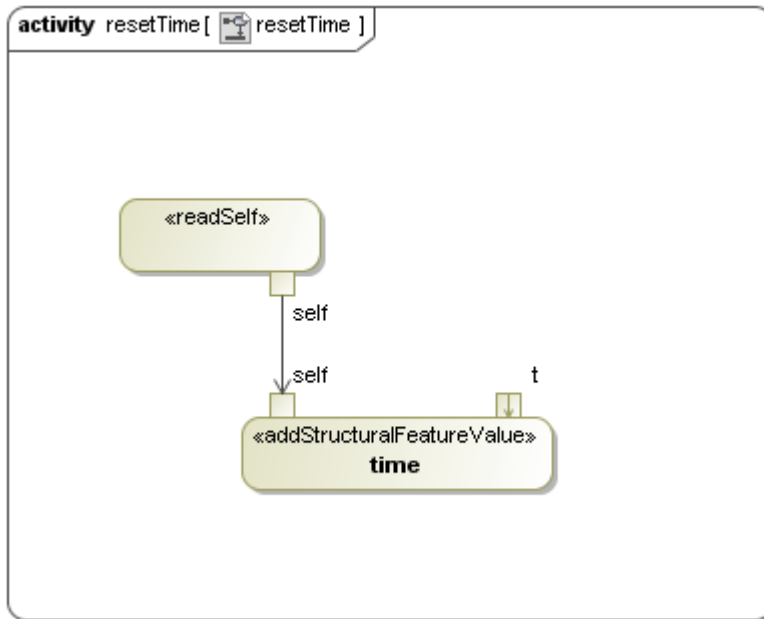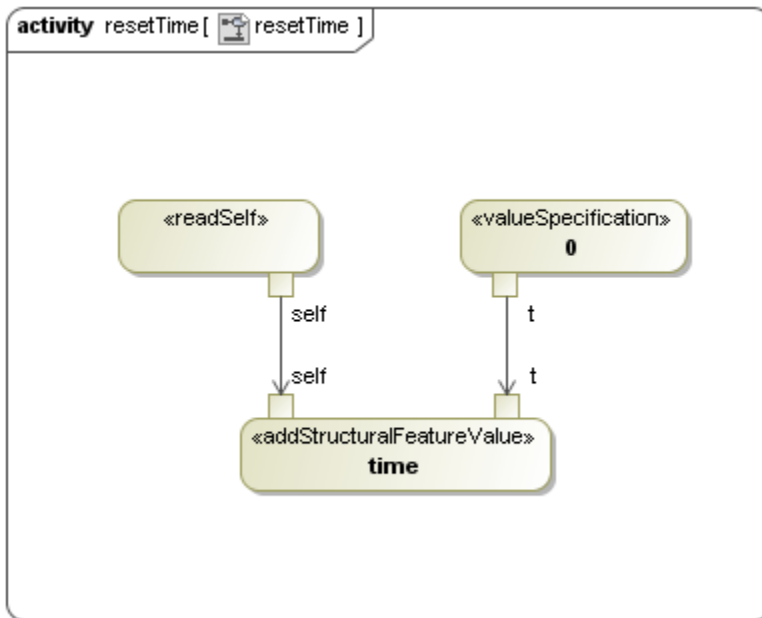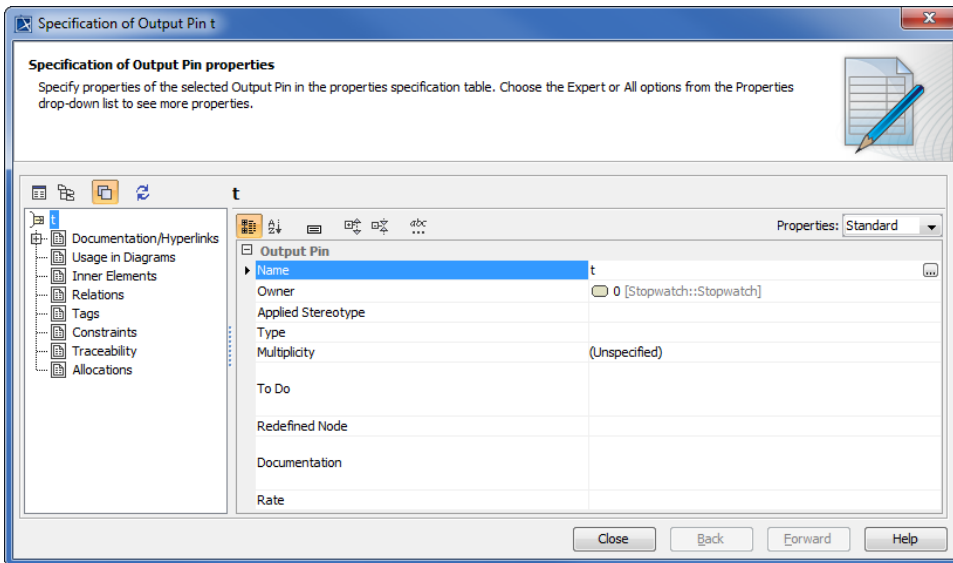

Next, we will create a ValueSpecificationAction to supply a value to the input pin **t** of the AddStructuralFeatureValueAction.

To create a LiteralInteger of zero value using a ValueSpecificationAction

1. Click **Action** > **AnyAction...** on the Activity diagram toolbar. The **Select Action MetaClass** dialog will open.
2. Select **ValueSpecificationAction** and click **OK** to close the **Select Action MetaClass** dialog.
3. Click the resetTime Activity diagram to create a ValueSpecificationAction.
4. Right-click the ValueSpecificationAction on the resetTime Activity diagram and select **Specification** to open its Specification window.
5. Select the **Value** row and click the **ShowShortcutMenu** button, and select **Value Specification** > **Literal Integer** to create a Literal Integer.
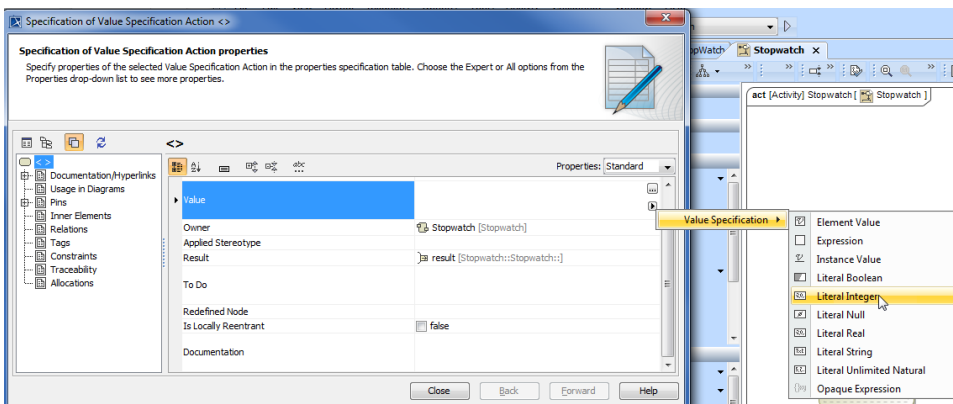
6. A new Literal Integer with a default value of **0** will be created as the value of the ValueSpecificationAction.
7. Right-click the pin **result** of the **ValueSpecificationAction** on the resetTime Activity diagram and select **Specification** to open its Specification window.
8. Rename the output pin (**result**) to "**t**" and specify its type as **Integer**.

Specification of Output Pin t

Specification of Output Pin properties
Specify properties of the selected Output Pin in the properties specification table. Choose the Expert or All options from the Properties drop-down list to see more properties.

t

Output Pin	
Name	t
Owner	0 [Stopwatch::Stopwatch]
Applied Stereotype	
Type	
Multiplicity	(Unspecified)
To Do	
Redefined Node	
Documentation	
Rate	

Properties: Standard

Close   Back   Forward   Help

activity resetTime [resetTime]

«readSelf»

«valueSpecification»
0

self

self

t

t

«addStructuralFeatureValue»
time

9. Add an Initial stage and an Activity Final stage to the resetTime Activity diagram.
10. Click **ControlFlow** on the Activity diagram toolbar to connect the Initial Node to the AddStructuralFeatureValueAction and the AddStructuralFeatureValueAction to the Final stage.
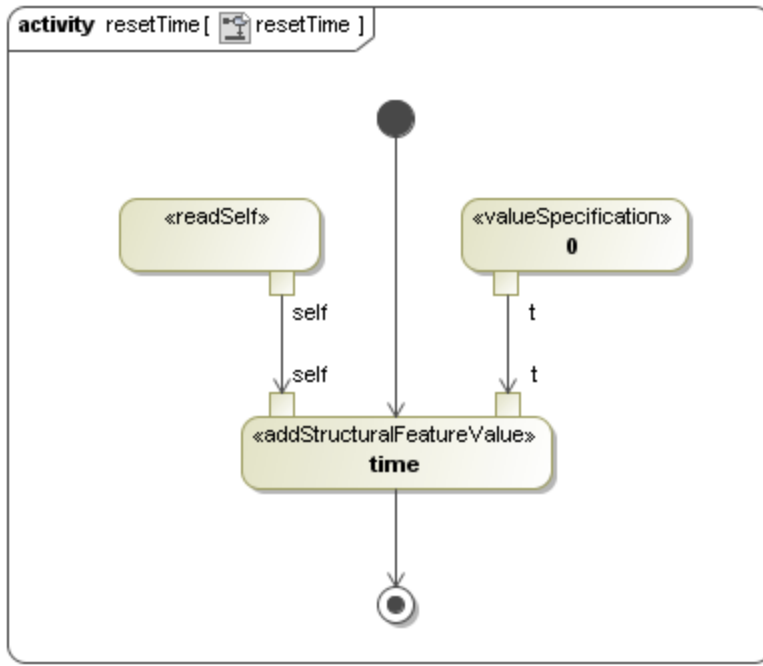
You have now created a complete resetTime Activity diagram. The next thing you will need to do is to set the **Specification** of the **resetTime** Activity to the **resetTime** operation.

To set the **Specification** of the **resetTime** Activity to the **resetTime** operation

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1. Right-click the **resetTime** Activity in the containment browser and select **Specification** to open its Specification window.

2. Select the **Specification** row and click the [...] button (see the following figure). The **Select Element** dialog will open.
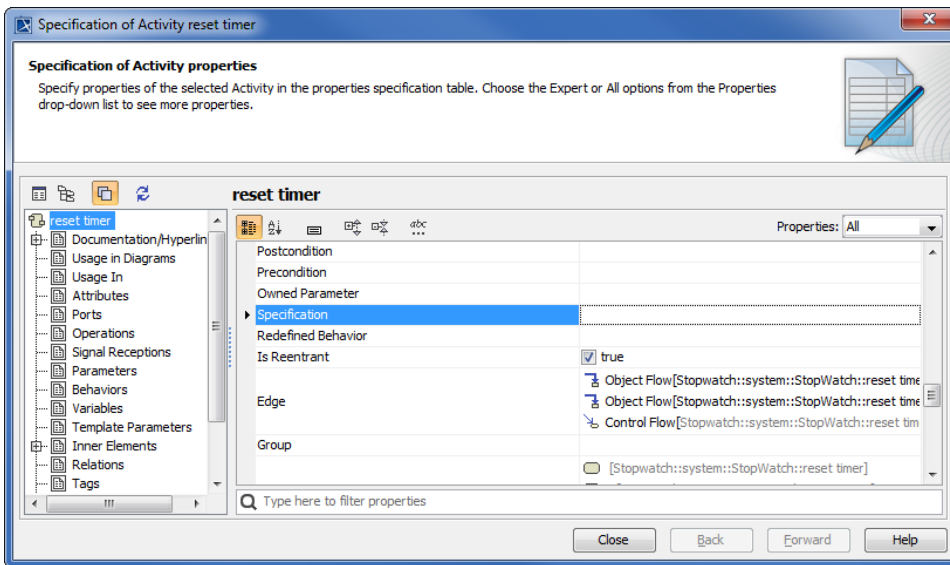
3. Select the **resetTime** operation of the **StopWatch** Class as the specification of the Activity and click **OK** to close the **Select Element** dialog.
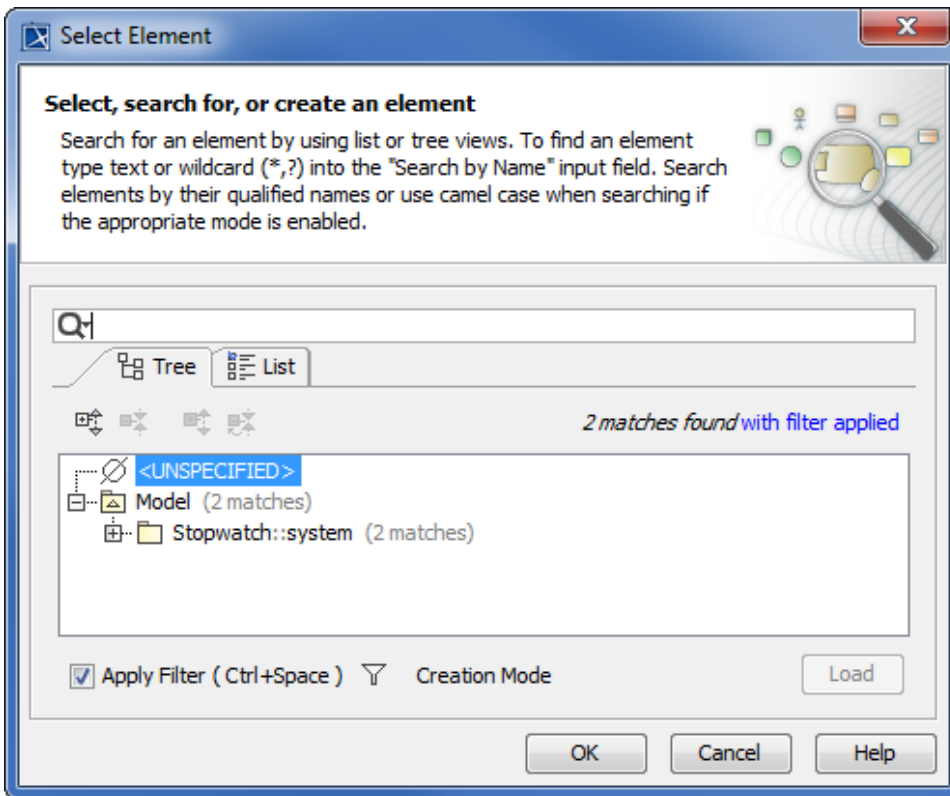
4. Click **Close** to close the Specification window.