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.

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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".
- 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

etTime".



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

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

😭 Activity Diagram 🔄	
🔵 Action 📃 🔽	O Action
🛄 Object Node 👘 🔻	🖂 Call Operation Action
🔁 Object Flow	Opaque Action
👆 Control Flow	Any Action
Send Signal Action	
🚬 Accept Event Ac	Any Action
🔀 Time Event	

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	Ξ
Clear Association Action	
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Conditional Node	
Create Link Action	
Create Link Object Action	
Create Object Action	
Destroy Link Action	
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Expansion Region	
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💌 Opaque Action	
Raise Exception Action	
Read Extent Action	
Read Is Classified Object Action	
Read Link Action	
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- 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

Specification of Add Structural Feature Value Action <> Specification of Add Structural Feature Value Action properties Specify properties of the selected Add Structural Feature Value Action in the properties specification table. Choose the Expert or All options from the Properties drop-down list to see more properties.						
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its Specification window.

5. Scroll down to the Structural Feature row, select it, and click the with button. The Select Property dialog will open.

Select Property
Select, search for, or create an element Search for an element by using list or tree views. To find an element type text or wildcard (*,?) into the "Search by Name" input field. Search elements by their qualified names or use camel case when searching if the appropriate mode is enabled.
Qr B Tree Image: List Image: Image
<pre></pre>
Apply Filter (Ctrl+Space) V Creation Mode
OK Cancel Help

- 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.

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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.

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Inner Elements Relations Tags Constraints Traceability	Insert At E Action Input Pin Is Replace All I true E Input Pin To Do	
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3. Name the input pin "*t*" and specify its type as **Integer**.

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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.

Select Pins
V 🗹 🗉 t: Integer [Stopwatch::Stopwatch::]
Clear All Select All
Layout options
Top/Bottom C Left/Right
OK Cancel Help

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.

activity resetTime [📷 resetTime]
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≪addStructuralFeatureValue» time

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.

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- 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.

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Usage in Diagrams	Output Pin	
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- Add an Initial stage and an Activity Final stage to the resetTime Activity diagram.
 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

- 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.

Specification of Activity reset timer Specification of Activity properties Specify properties of the selected Activity in the properties specification table. Choose the Expert or All options from the Properties drop-down list to see more properties.			
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3. Select the resetTime operation of the StopWatch Class as the specification of the Activity and click OK to close the Select Element dialog.

Select Element			
Select, search for, or create an element Search for an element by using list or tree views. To find an element type text or wildcard (*,?) into the "Search by Name" input field. Search elements by their qualified names or use camel case when searching if the appropriate mode is enabled.			
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4. Click **Close** to close the Specification window.