Using Alf for Transition guard Expressions

You can use the Alf editor to create an Alf Expression for the guard of a Transition in a State Machine or to edit an existing guard Expression.

To create an Alf guard Expression

1. Select the Transition (in the Model Browser or as represented on a State Machine diagram) and open the Alf editor window (select **Windows > Alf**), if it isn't already open.
2. In the Alf editor window, press **Create**. A menu will pop up with available options for creating a Transition effect Behavior or guard Expression.
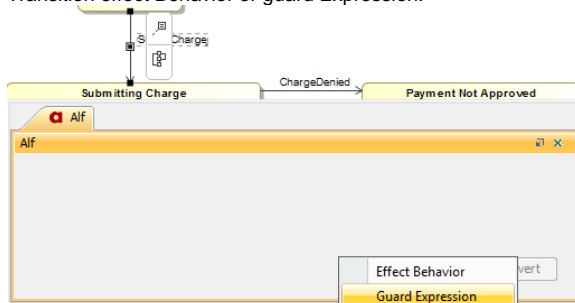
3. Select **Guard Expression**.
4. Enter the Alf code for the Expression and press **Save** to compile and save it.

> ⚠ Note that the text entered must be an *expression,* not a statement. Therefore, it must *not* have a semicolon at the end.

> ⓘ The expression can access attribute values of the context Classifier of the Activity containing its Activity Edge (using Alf *this* expressions) or the decision input value for the Decision Node (see Accessing data in Activity Edge guards).

To edit an Alf guard Expression

1. Open the Alf editor window (select **Window > Alf**), if it is not already open.
2. On the State Machine diagram, click on the *text* of the Transition trigger with the guard to be edited.
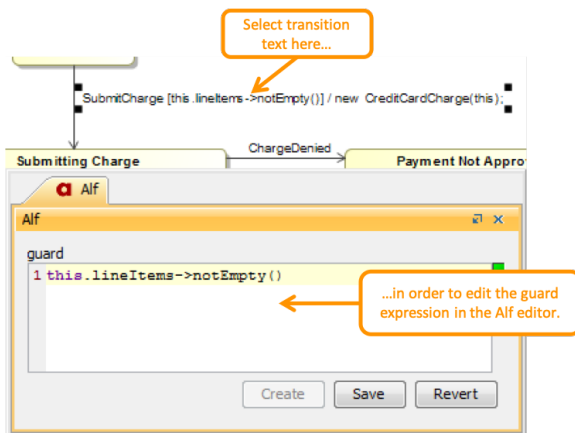
> ⓘ If a Transition has a guard Expression in Alf, but no effect Behavior, than selecting the Transition on a diagram results in the Alf code for the guard being displayed in the Alf editor window. However, if the Transition also has an effect Behavior in Alf, then selecting the Transition *line* on a diagram results in the Alf code for the *Behavior* being displayed in the Alf Editor. In order to edit the *guard,* select the *text* for the trigger of Transition.

3. Enter the Alf code for the guard Expression and press **Save** to compile and save it.

The Alf code for a guard Expression can also be entered or edited directly in the **Guard** property in the Specification window of the Transition. If you open the Edit Guard window, then the Alf code can be edited just as in the Alf editor window. However, instead of **Save** and **Revert** buttons, this window has **OK** and **Cancel** buttons, either of which will close it. If you press **OK**, then the Alf text is saved, and, if it has no errors, compiled. If you press **Cancel**, the Alf text is *not* saved.
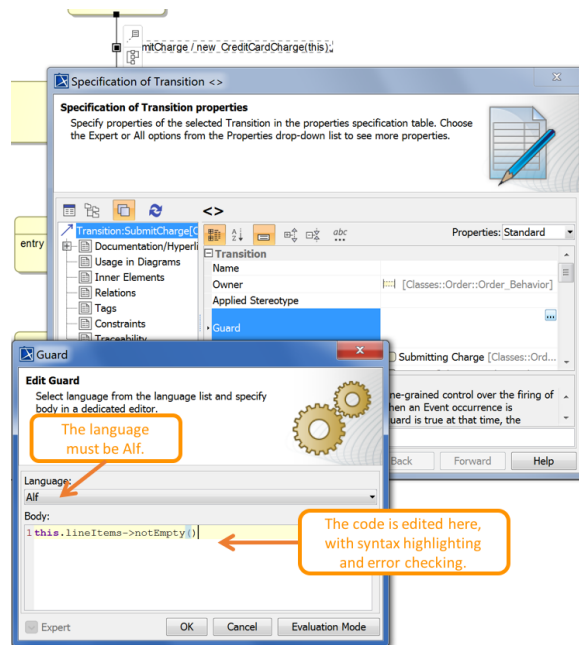
Editing code for a Transition guard Expression in the Edit Guard Window

> ⚠ To be recognized as Alf code, the **Body** of an Opaque Expression must have the **Language** Alf. If your project was created using the Alf project template, then Alf will be the default language. Otherwise, select Alf from the **Language** menu (you may have to scroll upwards in the menu to find the selection for *Alf*).

> ⓘ To make Alf the default language for Opaque Expressions
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> 1. Select **Options > Environment**.
> 2. From the **General** options, select **Editing**.
> 3. For the **Opaque Expression Default Language** option, type *Alf* (with exactly that spelling and capitalization). Click **OK**