

# **TIBCO® MDM Studio Rulebase Designer Tutorial**

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`TIBCO_HOME/release_notes/TIB_bstudio-mdm_5.1.0_docinfo.html`

where *TIBCO\_HOME* is the top-level directory in which TIBCO products are installed. On Windows, the default *TIBCO\_HOME* is `C:\tibco`. On UNIX systems, the default *TIBCO\_HOME* is `/opt/tibco`.

The following documents for this product can be found on the TIBCO Documentation site:

- TIBCO MDM Studio Release Notes
- TIBCO MDM Studio Installation Guide
- TIBCO MDM Studio Process Designer Tutorial
- TIBCO MDM Studio Process Designer User's Guide
- TIBCO MDM Studio Repository Designer Tutorial
- TIBCO MDM Studio Repository Designer User's Guide
- TIBCO MDM Studio Rulebase Designer Tutorial
- TIBCO MDM Studio Rulebase Designer User's Guide
- TIBCO MDM Studio UI Builder Tutorial
- TIBCO MDM Studio UI Builder User's Guide

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# Tutorial Overview

This tutorial walks you through the process of creating a rulebase model that contains the following:

A **Repository Model** that serves as the base data for the Rulebase. The Repository contains the following:

- A **Customer** repository that the rulebase will be built on. This Repository contains the following attributes - FirstName, LastName, DateOfBirth, Age, PreferredName, Gender, MaidenName.
- A second repository **Address** (which contains Address data) which is related to the **Customer** repository by a CustToAdd relationship and AddressType relationship attribute.
- A third repository **Organization** (which contains Organization data) which is related to the **Customer** repository by a CustToOrg relationship and CustomerType and CustomerSince relationship attributes.

A **Rulebase** based on the **Customer** repository which contains the following:

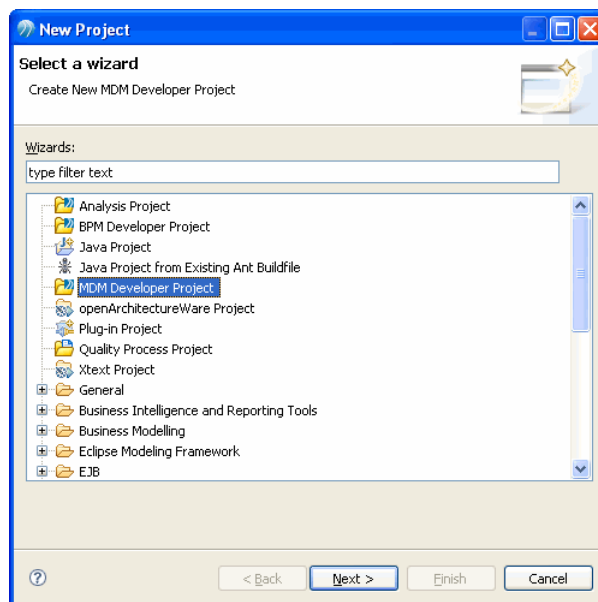
- Checks if the current user is an Admin User.
- Generates a unique ID for each customer record.
- Performs a mandatory attributes check for **FirstName** and **LastName**.
- Hides the **MaidenName** field if gender is **Male**.
- Connects the **FirstName** and **LastName** fields (minus the MaidenName field) to create **PreferredName**.

## Creating a Project

First, create a new Project to hold the Rulebase Model.

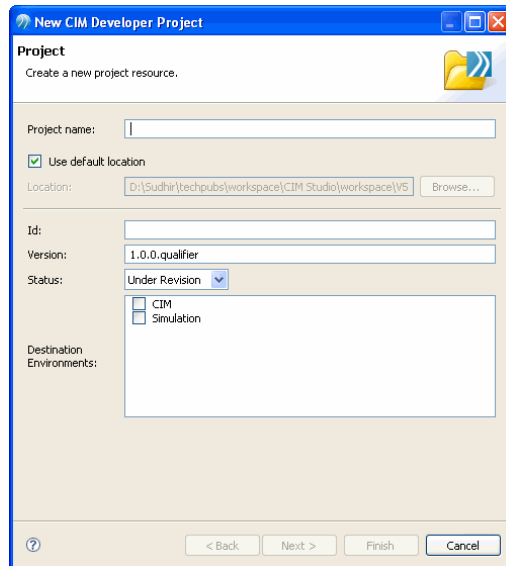
### Procedure

1. Go to **File > New > Project** and click **Next**. The **Create New MDM Developer Project** wizard is displayed.

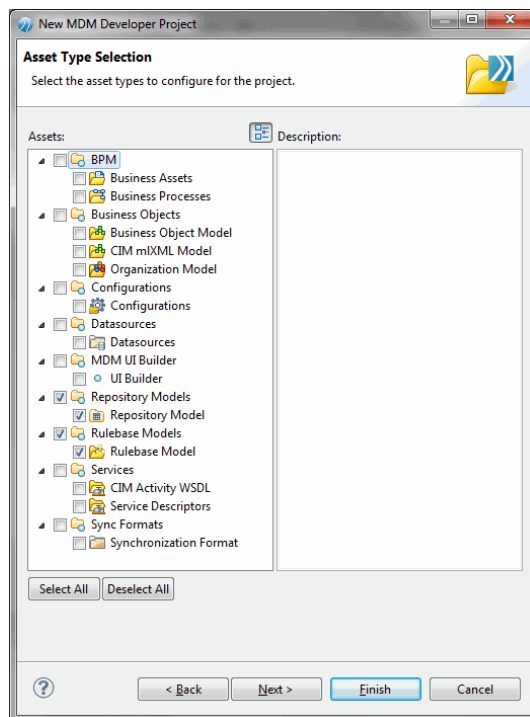


2. Select **MDM Developer Project** and click **Next**.

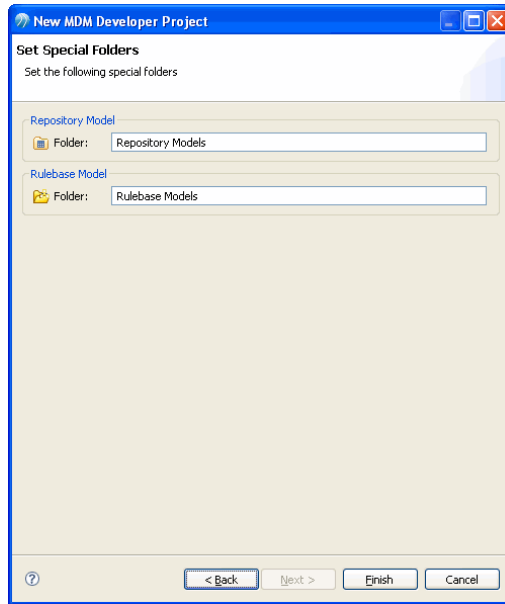
3. Provide a name for the Project, for example, **RulebaseTutorial**. Clear the **Use default location** checkbox if you want to provide a different location for the project (by default, the current workspace). Select Destination Environment as **MDM**. Click **Next**.



4. The **Asset Type Selection** dialog is displayed - select the **Repository Models** and **Rulebase Models** folders and click **Next**.



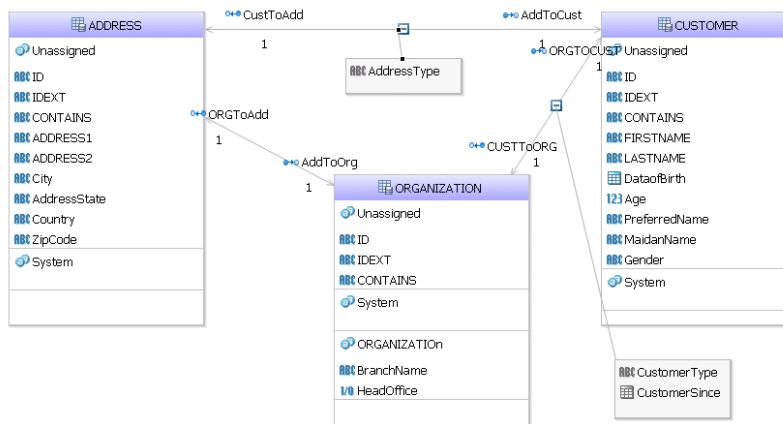
5. The folder for the **Repository Models** and **Rulebase Models** is displayed. Click **Finish**.



## Defining Repository Data

### Procedure

1. In the Project Explorer, create a new repository model under the **Repository Models** folder.
2. Right click the **Repository Models** folder, select **New > Repository Model**, and follow the wizard.
3. Call the file `Tutorial.rep`.
4. Double click the newly created `.rep` file and create the following repository and relationship structure.

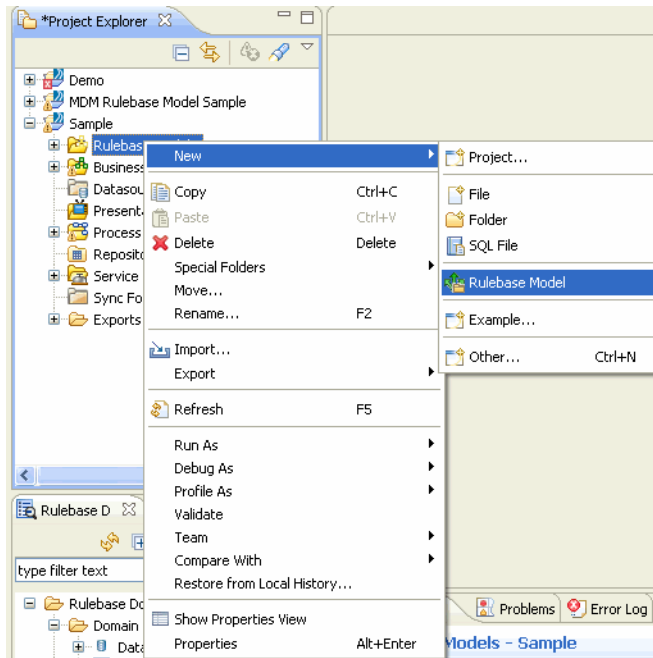


This will form the base data on which a rulebase will be created.

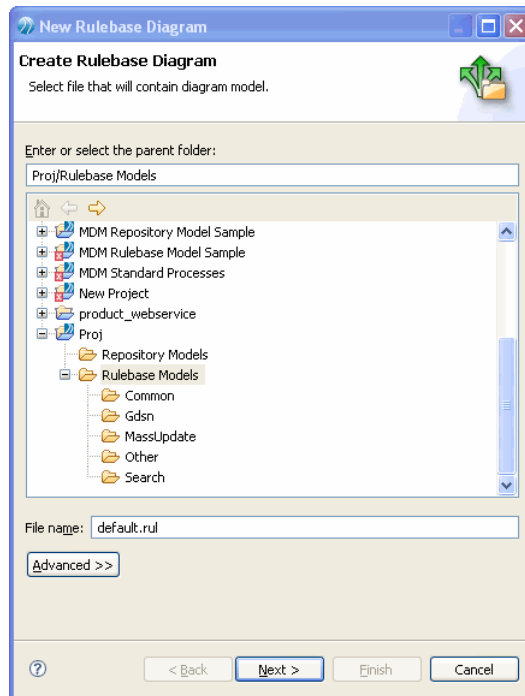
## Creating Rulebase Model

### Procedure

1. Right-click the **Rulebase Models** folder in the Project Explorer and select **New > Rulebase Model**.

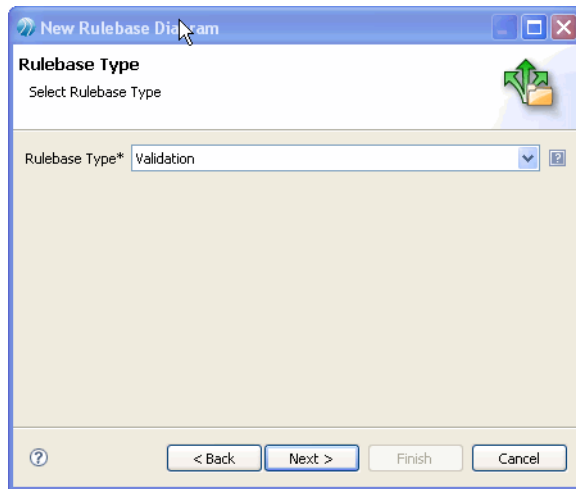


2. Accept the default name for the rulebase model (default.rul) and location or enter a new location and name. Click **Next**.



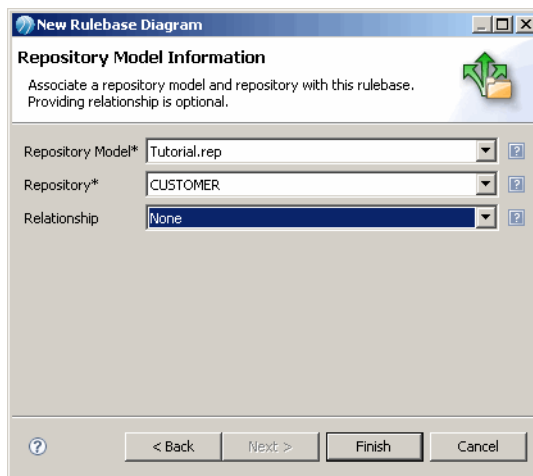
3. Select the Rulebase type as **Validation**. Click **Next**.





4. Associate repository data with your rulebase.

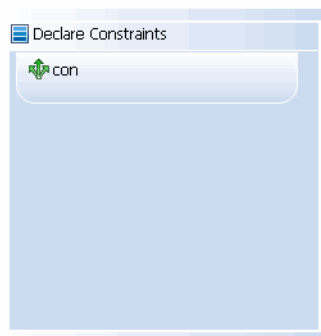
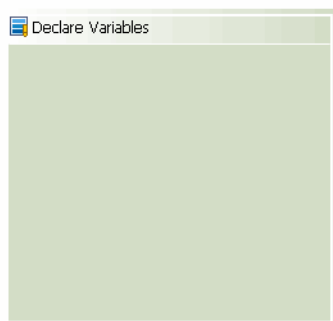
- Select **RepositoryModel** as **Tutorial.rep**
- Select Repository as **Customer**.
- Select Relationship as **None**.



5. Click **Finish**.

6. After creating a new rulebase model, the Editor displays the basic rulebase diagram. The associated repository is displayed at the top (**Customer**, in this case).
7. Use the palette to start building the rulebase by declaring variables and adding constraints.


#### Repository : CUSTOMER

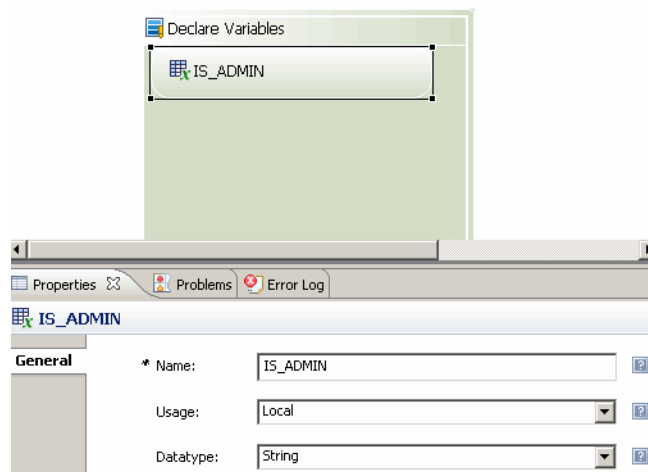


## Declaring Variables

First, declare a **Data-type** variable to check for the current user role.

### Procedure

1. In the Palette, click the  **Data-type** icon in the **Declare Variables** section and then click in the **Declare Variables** compartment to add the variable.
2. Provide the following details for the variable in the **Properties** Window:
  - Name as **IS\_ADMIN**
  - Usage as **Local**
  - Datatype as **String**



## Add Constraints

In this section, the following constraints are added:

- [Adding Constraint for Gender Selection](#)
- [Adding Constraint to generate Customer ID](#)
- [Adding Constraint for Mandatory Attributes Check](#)
- [Adding Constraint to Get Current User Role](#)
- [Adding Constraint to Hide MaidenName for Male Customers](#)
- [Adding Constraint to Generate PreferredName](#)
- [Adding Constraint to Ensure Date of Birth is Less than the Current Date](#)
- [Add Constraints to Create a Dependent Drop-down](#)
- [Adding Constraint to assign values to Country](#)
- [Adding Constraint to Populate US States](#)

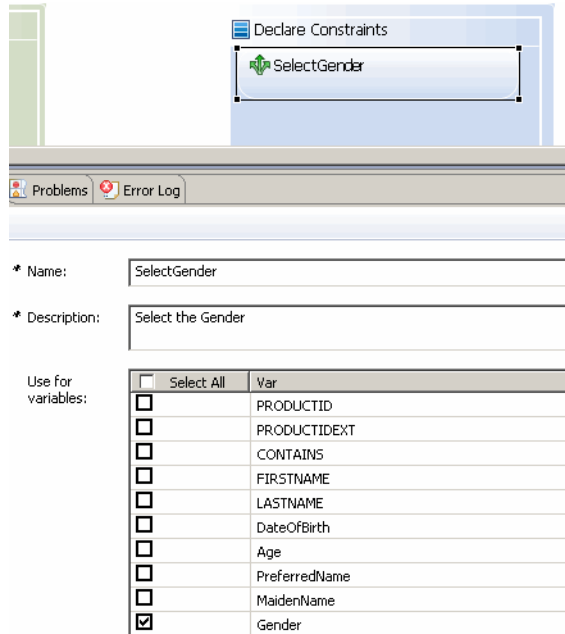
## Adding Constraint for Gender Selection


### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click the **Declare Constraints** compartment to add the constraint.

2. Provide the following details for the constraint in the **Properties** window:

- Name as **SelectGender**.
- Description as **Select the Gender**.
- In the Use for variables section, select the **Gender** checkbox.

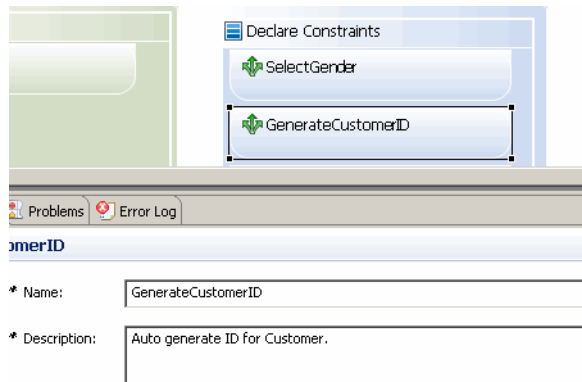



3. Double click the **SelectGender** constraint to open up the Expression Editor.
4. From the **Actions** Palette, click the  **Select Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - Name as **ActionName**
  - No value as **Default**
  - Select Type as **Enum**
  - In the **Attributes** section, click the **Add** icon to add two literals: **Male** and **Female**.

## Adding Constraint to generate Customer ID

### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click the **Declare Constraints** compartment to add the constraint.
2. Provide the following details for the constraint in the **Properties** window:
  - Name as **GenerateCustomerID**
  - Description as **Auto generate ID for Customer**.

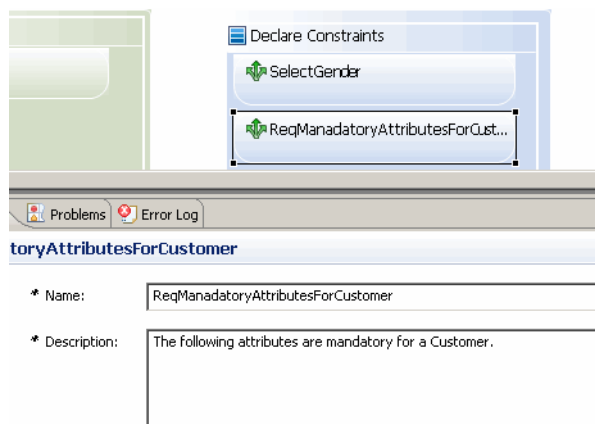



3. Double click the **GenerateCustomerID** constraint to open up the Expression Editor.
4. From the **Actions** Palette, click the  **Assign Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - Name as **ActionName**
  - Select **PRODUCTID** from the **Assign** drop-down.
  - In the Expression Editor, enter the following:  
`sequence('MQ_SEQUENCE_1')`

## Adding Constraint for Mandatory Attributes Check

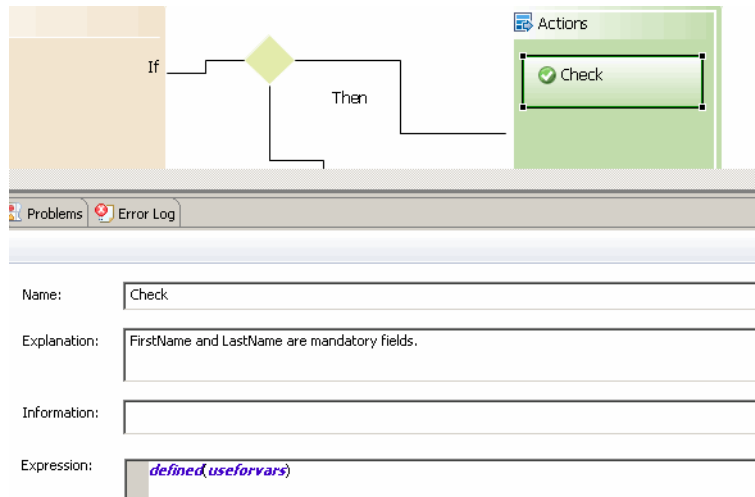
### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click in the **Declare Constraints** compartment to add the constraint.
2. Provide the following details for the constraint in the **Properties** window:
  - Name as **ReqManadatoryAttributesForCustomer**.
  - Description as **The following attributes are mandatory for a Customer**.
  - In the Use for variables section, select the **FirstName** and **LastName** checkbox.



3. Double click the **ReqManadatoryAttributesForCustomer** constraint to open up the Expression Editor.
4. From the **Actions** Palette, click the  **Check Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:

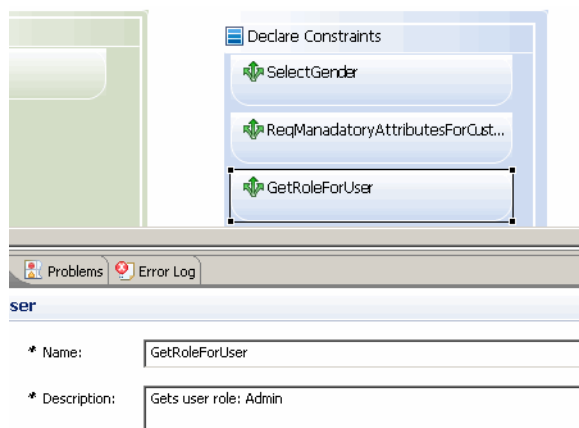
- Explanation as **FirstName and LastName are mandatory fields.**
- Expression as **defined(useforvars)**



## Adding Constraint to Get Current User Role

### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click in the **Declare Constraints** compartment to add the constraint.
2. Provide the following details for the constraint in the **Properties** window:
  - Name as **GetRoleForUser**.
  - Description as **Gets user role: Admin.**

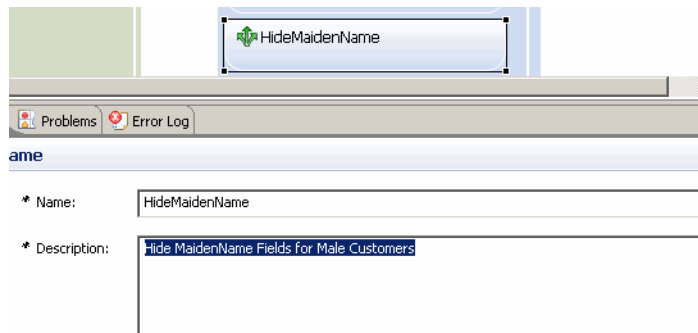


3. Double click the **GetRoleForUser** constraint to open up the Expression Editor.
4. From the **Actions** Palette, click the **Assign Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - Name as **Assign**
  - Select **IS\_ADMIN** from the **Assign** drop-down

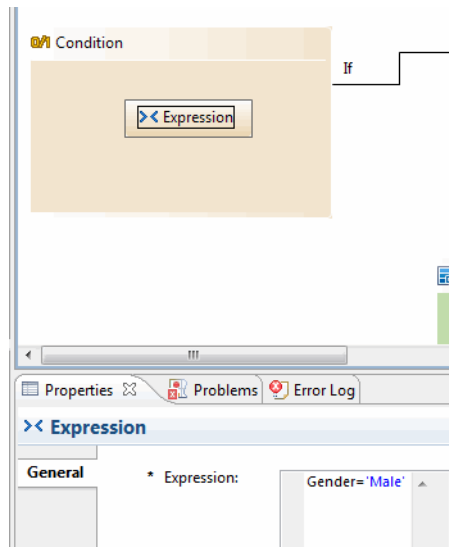
## Adding Constraint to Hide MaidenName for Male Customers


### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click the **Declare Constraints** compartment to add the constraint.
2. Provide the following details for the constraint in the **Properties** window:
  - Name as **HideMaidenName**.
  - Description as **Hide MaidenName Fields for Male Customers**.
  - In the Use for variables section, select the **MaidenName** checkbox.




3. Double click the **HideMaidenName** constraint to open up the Expression Editor.
4. From the **Condition Expression** Palette, click the **Expression** icon and then click in the **Condition** compartment to insert it.
5. In the Expression Properties, provide **Gender = 'Male'**



6. From the **Actions** Palette, click the  **Access Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - Name as **Access**
  - Mode as **Hide**
  - Applies To as **Use for Vars**


## Adding Constraint to Generate PreferredName

### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click the **Declare Constraints** compartment to add the constraint.
2. Provide the following details for the constraint in the **Properties** window:
  - Name as **AssignPreferredName**.
  - Description as **Build Preferred name if not entered**.
3. Double click the **AssignPreferredName** constraint to open up the Expression Editor.
4. From the **Condition Expression** Palette, click the **Expression** icon and then click in the **Condition** compartment to insert it.
5. In the Expression Properties, provide **undefined(PreferredName)**.
6. From the **Actions** Palette, click the  **Assign** **Assign Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - Name as **ActionName**
  - Select PreferredName from the Assign dropdown.
  - In the Expression Editor, enter the following:  
**concat(FirstName, '\_', LastName)**

## Adding Constraint to Ensure Date of Birth is Less than the Current Date

### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click the **Declare Constraints** compartment to add the constraint.
2. Provide the following details for the constraint in the **Properties** window:
  - Name as **DOBCheck**.
  - Description as **Check for date of birth**.
3. Double click the **DOBCheck** constraint to open up the Expression Editor.
4. From the **Actions** Palette, click the  **Check** **Check Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - Explanation as **DateofBirth check (not greater than current date)**.
  - Expressions as **DateOfBirth < SESSION.DATE**.

## Add Constraints to Create a Dependent Drop-down


This is to create a dependent drop-down listing the States depending on the Country. For example, if country is selected as US, the States drop-down is populated with US States.

Three constraints are used to achieve this.

To create a dependent drop-down, create a new rulebase model on Address repository. For more information on how to create rulebase model, refer to [Creating Rulebase Model](#).


## Adding Constraint to assign values to Country

### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click in the **Declare Constraints** compartment to add the constraint.
  - Name as **AssigningValuesToCountry**.
  - Description as **Assigning Values to Country**.
  - In the Use for variables section, select the **Country** checkbox.
2. Double click the **AssigningValuesToCountry** constraint to open up the Expression Editor.
3. From the **Actions** Palette, click the  **Select Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - No value as **No**.
  - Select Type as **Enum**.
  - Column as **1**.
  - Select the **Header** checkbox.
  - In the Attributes section, click the Add icon to add the following attributes: **Country Name, US, UK, India**.

## Adding Constraint to Populate US States

### Procedure

1. In the Palette, click the **Constraint** icon in the **Declare Constraint** section and then click in the **Declare Constraints** compartment to add the constraint.
  - Name as **USStates**.
  - Description as **Dependent drop-down for state if country US**.
  - In the Use for variables section, select the **AddressState** checkbox.
2. Double click the **USStates** constraint to open up the Expression Editor.
3. From the **Condition Expression** Palette, click the **Expression** icon and then click in the **Condition** compartment to insert it.
4. In the Expression Properties, provide **Country='US'**
5. From the **Actions** Palette, click the  **Select Action** icon and then click in the **Actions** compartment to insert it. Provide the following properties:
  - No value as **No**.
  - Select Type as **Enum**.
  - Column as **1**.
  - Select the **Header** checkbox.
  - In the Attributes section, click the Add icon to add the following attributes: **State, California, New Jersey, Texas**.





Only 3 states are added as an example. The whole list of states can be populated by providing the names as attributes.

## Deploy the Rulebase Model

The created Rulebase model can be directly deployed to MDM.

For deployment steps, see the **Deployment** chapter in the *TIBCO MDM Studio Rulebase Designer User's Guide*.