



Transformation Manager

Version 5.2

Tutorial 8 - Keywords



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Tutorial 8

Keywords

This tutorial takes you through the use of some of the keywords used within Transformation Manager. You will use keywords in many of your transforms.

Prerequisites

Before starting this tutorial we recommend that you have completed the following tasks.

- 1) Transformation Manager has been installed.
- 2) An appropriate license has been installed.
- 3) The tutorial resources including data models, samples and source and target data stores have been downloaded and extracted to your Transformation Manager home directory.
- 4) You have completed tutorials 1, 2, 3, 4 and 6.

Concepts

Keywords have a specific meaning within Transformation Manager. It is possible that a given data model has an element or attribute that has the same name as a Transformation Manager keyword. In these circumstances Transformation Manager lets you distinguish between the keyword and the element or attribute by using angle brackets to enclose the attribute or element name. For example the keyword CONSTRUCT might be an attribute and therefore in transform code the attribute would be <construct>.

Information

This tutorial demonstrates how to use the following keywords, **CONSTRUCT**, **THIS** and **THAT**. The first exercise uses the **CONSTRUCT** keyword within an **IF** statement. This causes Transformation Manager to only construct and insert a record when the **CONSTRUCT** keyword is found.

The second part of the tutorial, exercises 6 to 9, adds the keyword **THAT** in the form of **THAT**.NAME to the right side of the assignment. In this example we use the **THAT** keyword with the NAME attribute from the source data model and append it to the name attribute in the target data model, referred to as **THIS** in the transform code. In the transform code the **THIS** keyword is added for clarity and not because it is a requirement.

Learning Objectives

Learn to use the CONSTRUCT keyword

You will learn how to use the CONSTRUCT keyword within a conditional statement which reflects typical usage.

Learn how to use the THIS and THAT keywords

You will learn how to use the THIS and THAT keywords to reference appropriate elements within a transform.

Exercise 1 - Start TM Designer and open the repository

This exercise will start Transformation Manager and open the tutorials repository ready to create a new project.

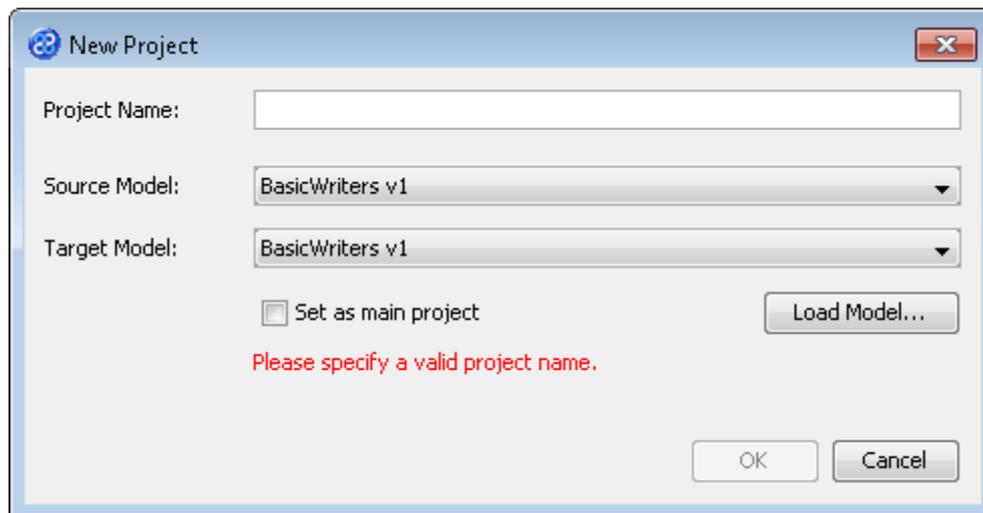


- 1) Looking at your desktop, find the icon that looks like this, .
- 2) Then you have two options.
 - a) Using your mouse double-click the icon using the primary mouse button.
 - b) Using your mouse press the secondary mouse button, commonly the right-mouse button, while the cursor is over the icon to open the pop-up menu and select **Open** from the available options.
- 3) Once Transformation Manager has opened and displays its interface connect to your repository, **MyExamples**.

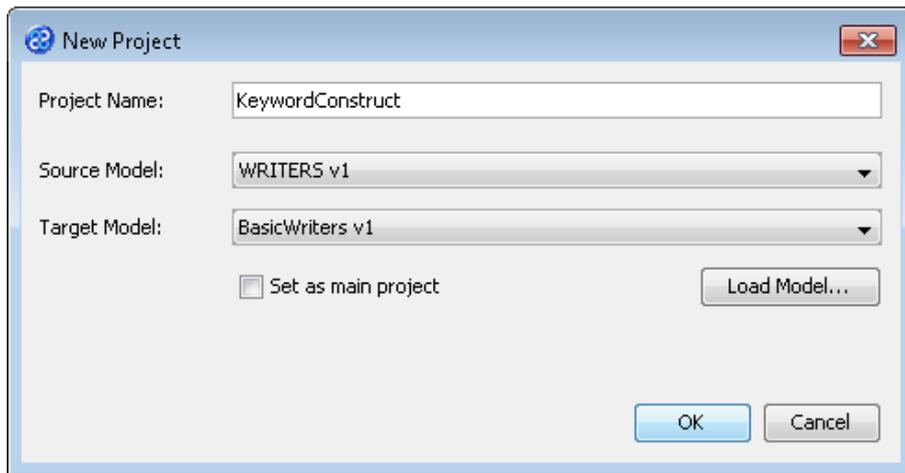
Exercise 2 - Create a New Project

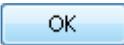
This exercise creates a new project where we will use the flat file data model called **WRITERS v1** as the source data store and a relational database data store called **BasicWriters v1** as the target data model.

- 1) Using your mouse click on the **File** option from the menu bar of TM Designer.
- 2) From the menu, click once on the **New Project...** option.
- 3) The **New Project** window will open.



- 4) In the **Project Name** field we will provide a name for the project. Let's call our project **KeywordConstruct** by typing the name into the field.
- 5) Now we must select the target and source models for our project. In the **Source Model** field select **WRITERS v1** from the list. In the **Target Model** field select **BasicWriters v1**.

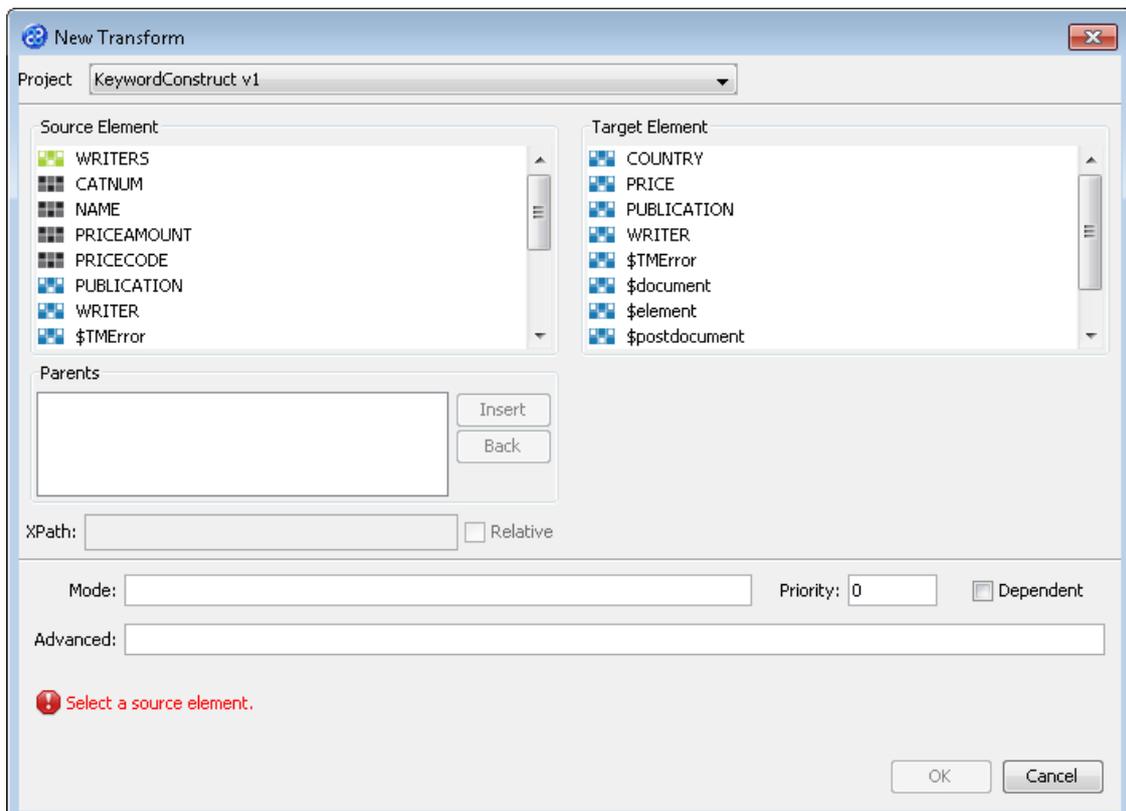


- 6) Now click once on the  button. Your project will be created and be displayed in the **Projects** pane.

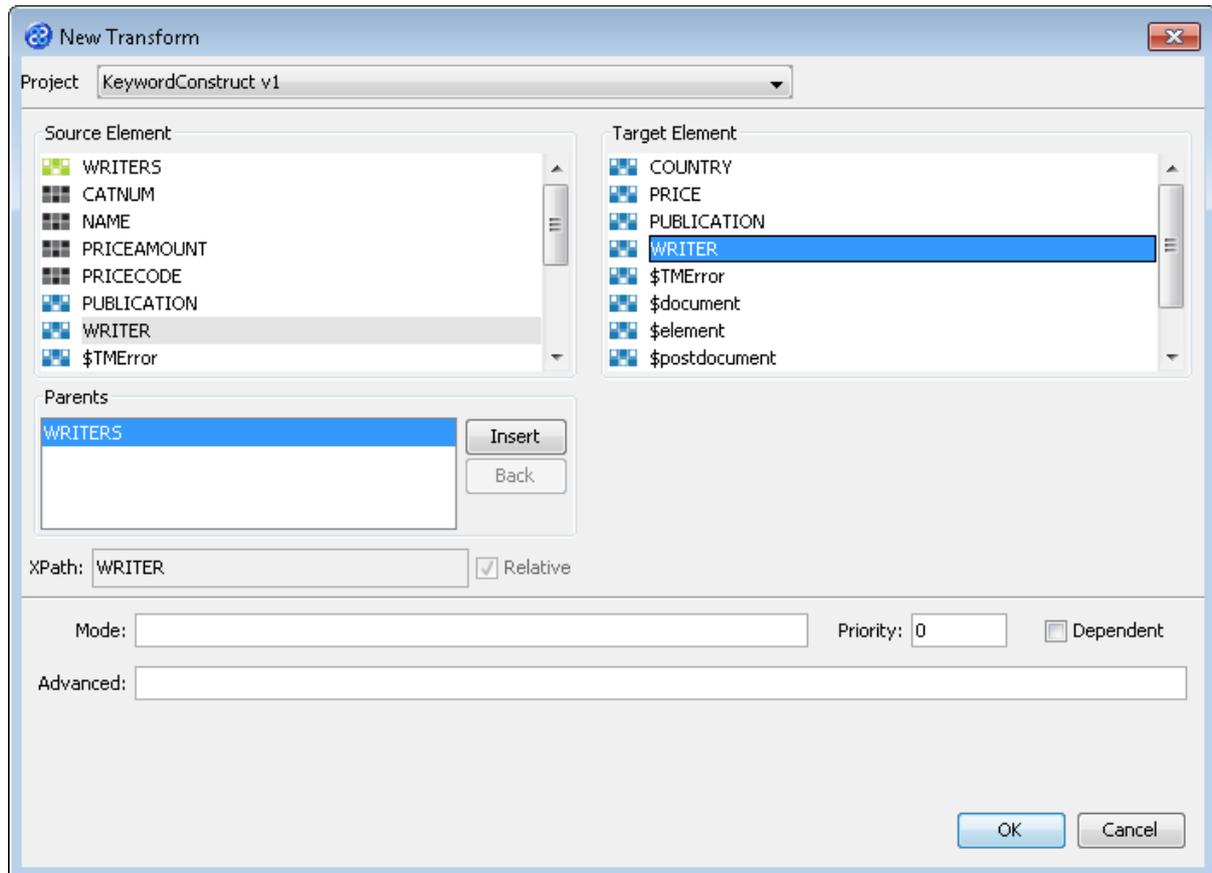
Exercise 3 - Create the CONSTRUCT keyword transform

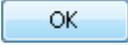
This exercise creates a transform using the **CONSTRUCT** keyword. We will use a local variable called **PRICE_SUM** to hold the book price and will sum the price of each book setting the local variable value as the taxable income.

- 1) Click once on the **File** menu bar option.
- 2) Click once on the **New Transform...** option from the sub-menu.
- 3) This will open the **New Transform** window. Ensure that you have the correct project selected in the **Project** drop down list, in our case this will be **KeywordConstruct v1**.



- 4) With the **New Transform** window open, we will select the elements for the source and target. In this case the source and target element will be the same, **WRITER**. The **New Transform** window will look like the one below.



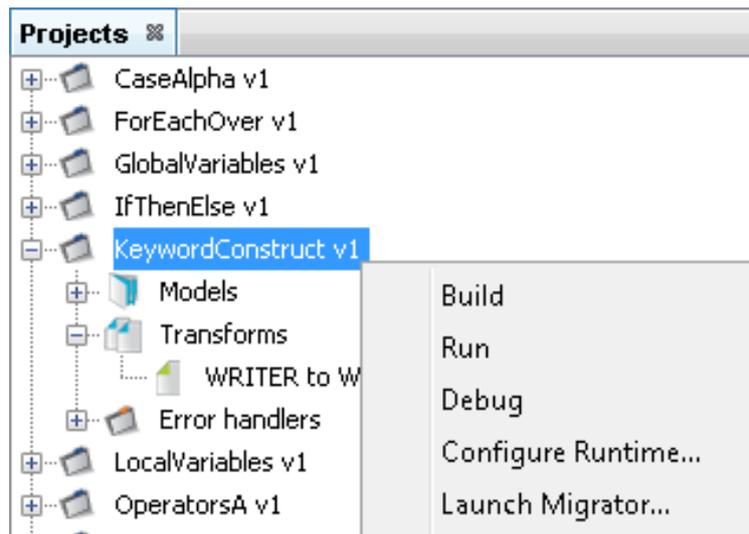
- 5) Click once on the  button to create your new transform.
- 6) The Editor pane will open ready for you to write your transform code once the **New Transform** is created.
- 7) Now we will write our transform. In this transform the **CONSTRUCT** keyword means that writers will only be constructed in the source if the name is Brown.

```
IF (name='Brown') THEN
CONSTRUCT;
<ID> := <id>;
NAME := name;
END_IF;
```

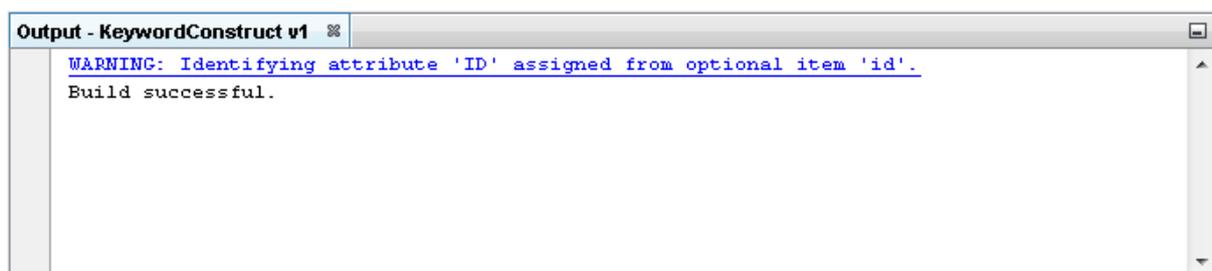
- 8) We have completed our transform.
- 9) Click once on the **File** menu bar option.
- 10) Click once on the **Save** menu bar option to save your transform.

Exercise 4 - Build Your KeywordConstruct Project

- 1) Move your mouse pointer so that it is over the title of the project you are working on and use the right mouse or secondary mouse button to display the context menu.



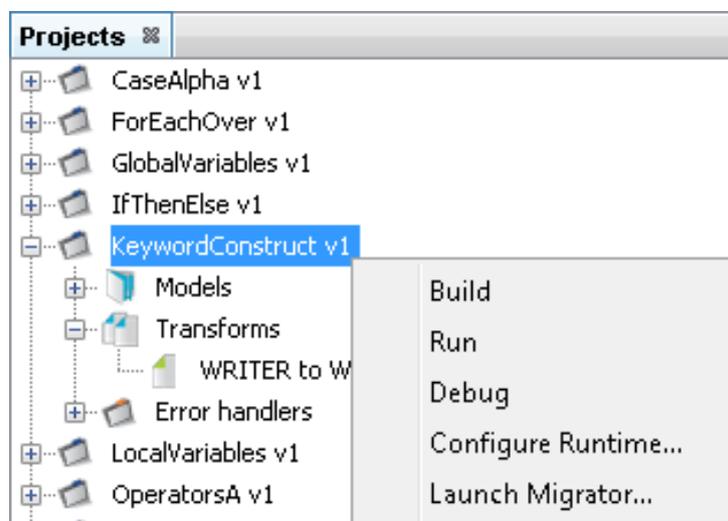
- 2) Click once on the **Build** option from the menu.
- 3) The **Output** pane will open and show you if there are any errors in your transform code. In this exercise you should not have any error messages and you should see a message stating **Build successful..**



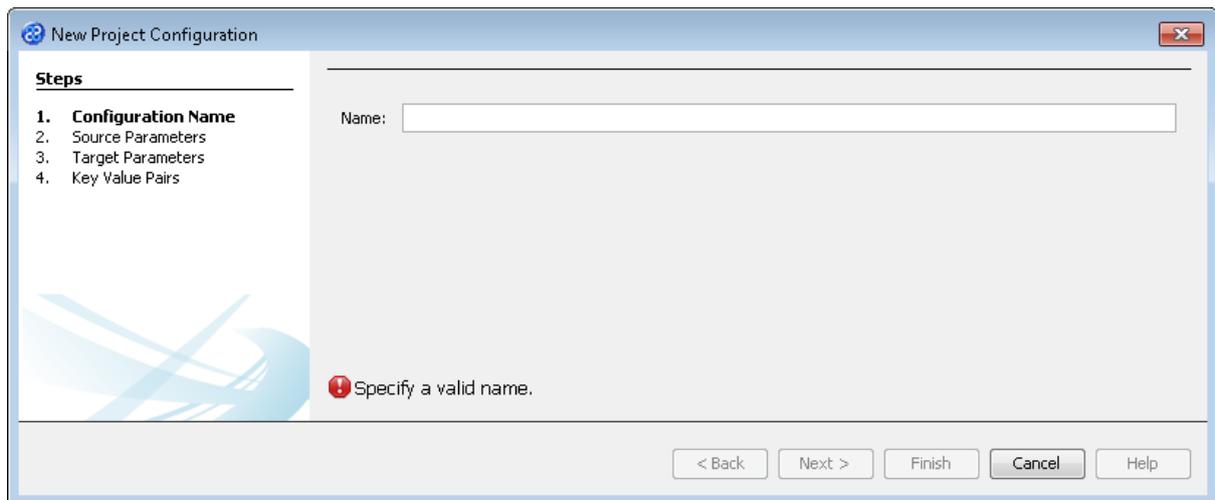
Exercise 5 - Run the Project

Now let's Run our transformation to see what results are produced.

- 1) Move your mouse pointer so that it is over the title of the project you are working on and use the right mouse or secondary mouse button to display the context menu.



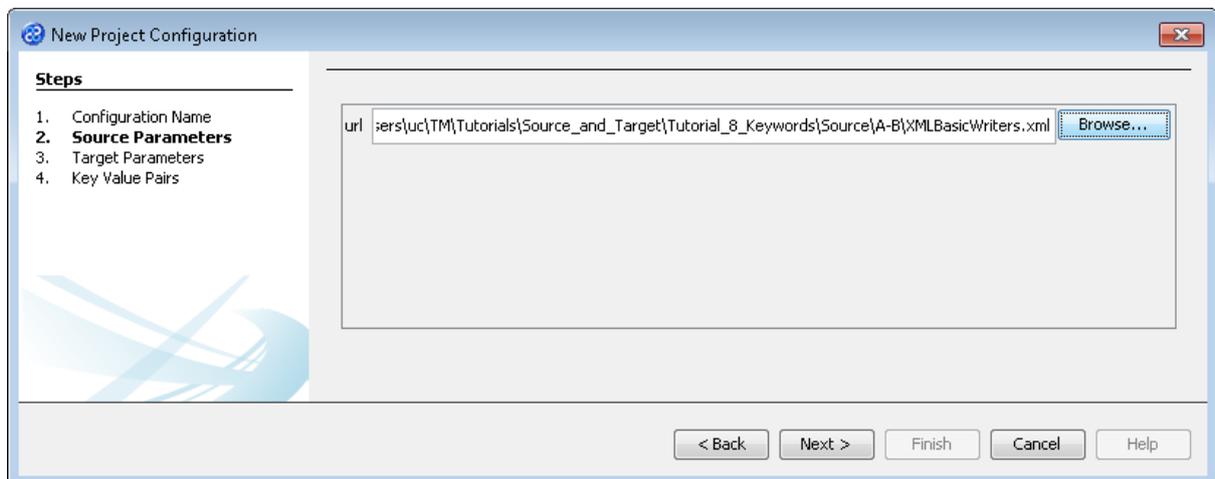
- 2) Click the **Run** option from the menu. TM Designer will now open the New Project Configuration window where you will set the connection information for the project.



- 3) Let's give this configuration the name Config1. Type **Config1** into the **Name** field.
- 4) Click the **Next >** button to move to **Step 2. Source Parameters** where we will provide the details for the source data store connection.
- 5) Go to the **url** field of the **Source Parameters** step. In this field we will specify the location of the source data store. You can type the path and file name manually or you can use the button to select the directory and file. This will be in the following directory.

[TMHOME]\Tutorials\Source_and_Target\Tutorial_8_Keywords\Source\A-B

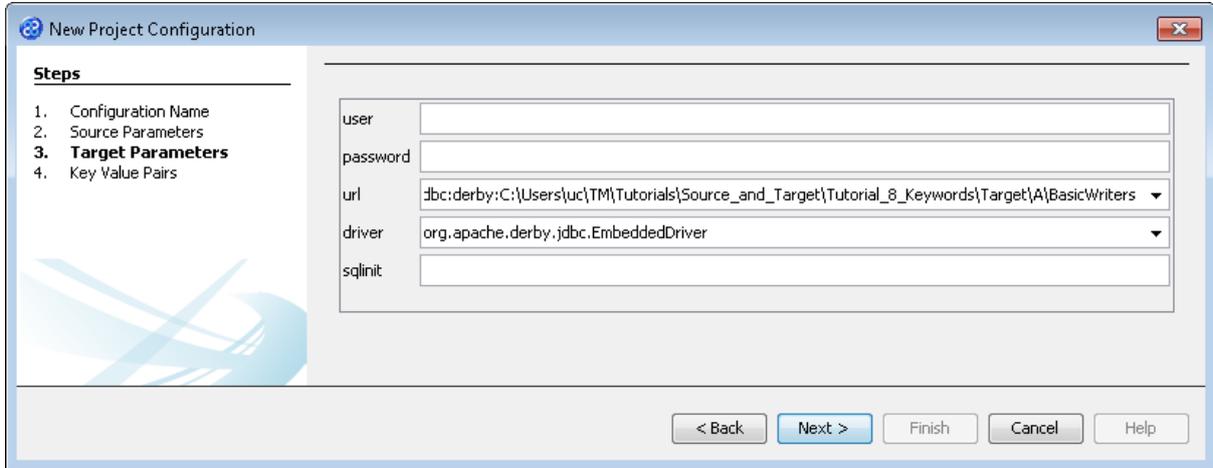
- 6) The **Source Parameters** step should look similar to the image below.



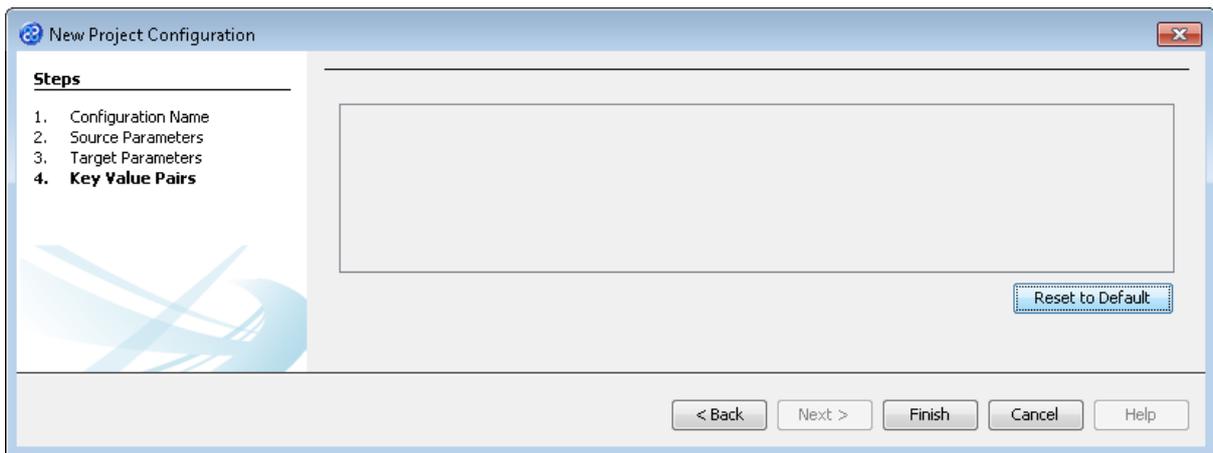
- 7) Click the **Next >** button to move to **Step 3. Target Parameters** where we will provide the details for the target data store connection.
- 8) Go to the **url** field. You will now need to provide the details of where to go to connect to the source data. View the list of options and select the option called **jdbc:derby:<YOUR_NAME>** from the drop down list. Now replace the **<YOUR_NAME>** part of the list item, including the angle brackets with the directory where the Derby database is stored. This will be in the following location.

[TMHOME]\Tutorials\Source_and_Target\Tutorial_8_Keywords\Target\A\Basicwriters

- 9) Go to the driver field and display the list of options available. Select the option called **org.apache.derby.jdbc.EmbeddedDriver**. The New Project Configuration window will look similar to the image below. **user**, **password** and **sqlinit** do not require values.

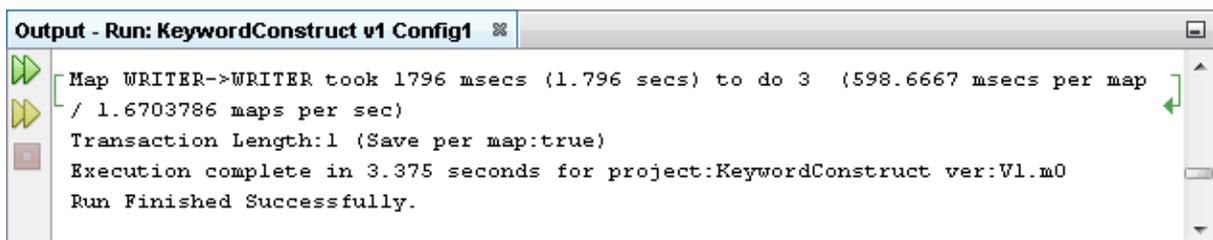


- 10) Click the **Next >** button to move to **Step 4. Key Value Pairs**. We do not need to specify any key value pairs in this exercise.



- 11) Click the **Finish** button to save the project configuration and to run the project within TM Designer. This performs the same execution as the **Launch Migrator...** option from the project context menu.

- 12) TM Designer will open the Output - Run pane with the results of running the project as shown below.

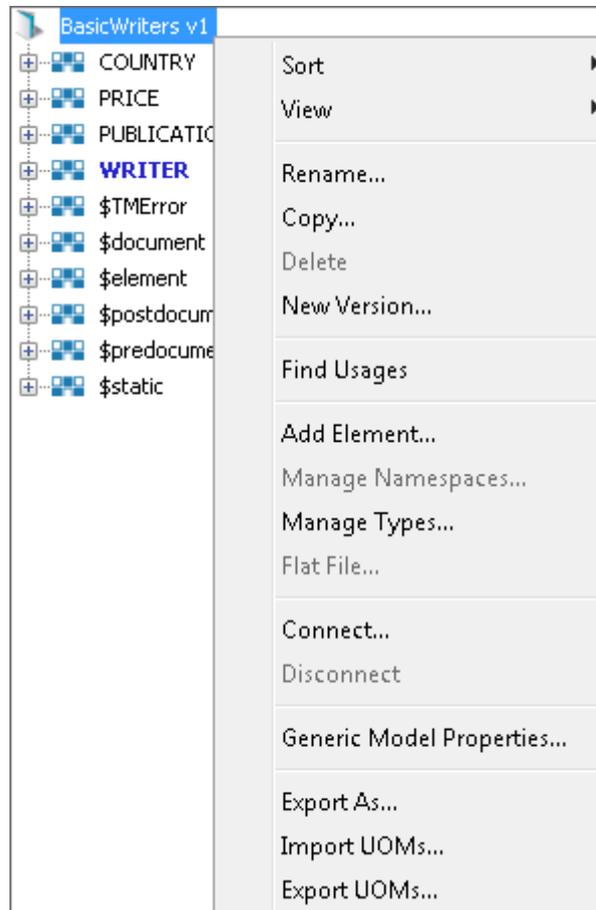


- 13) Let's now check the data using the **View Data...** functionality.

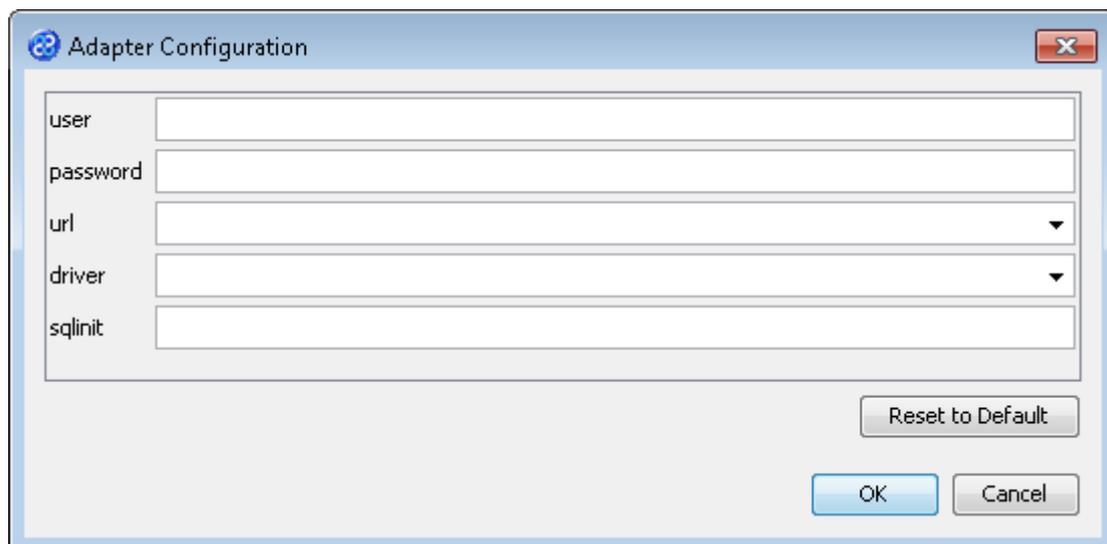
Exercise 6 - View the Target Data

Now let's check our target data store to see if our data has been transformed as expected.

- 1) With the Editor pane still open, move the cursor over the name of the data model in the **Transform Target** pane and display the context menu for the data model.



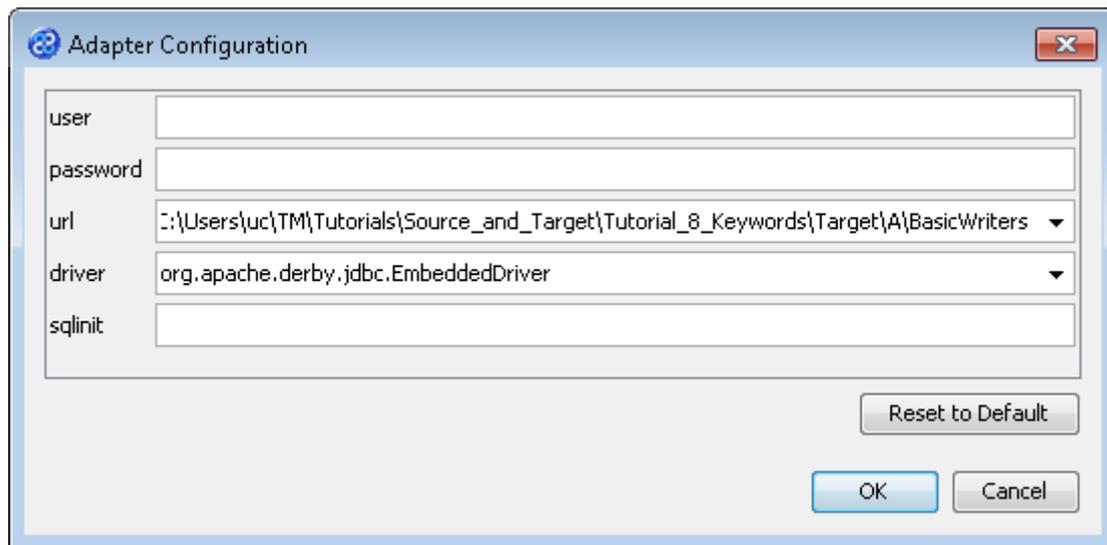
- 2) Select the **Connect...** option from the menu. The Adapter Configuration window will open ready for the connection details to be entered for the target data store.

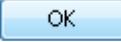


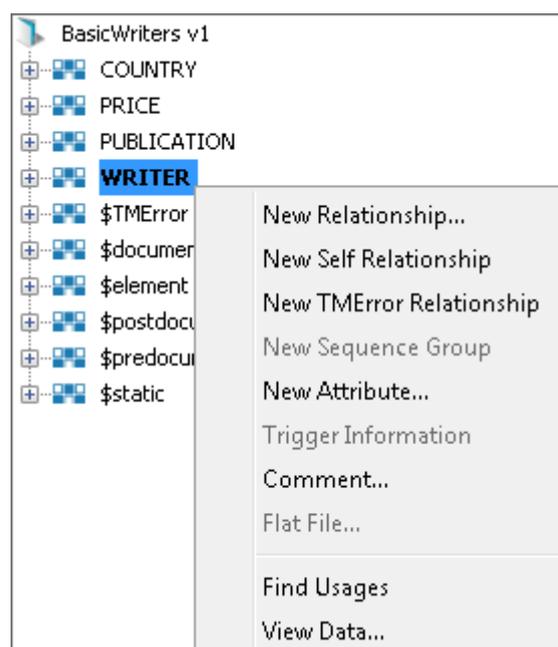
- Let's provide the relevant connection information as shown below. Go to the **url** field. You will now need to provide the details of where to go to get the target data. View the list of options and select the option called **jdbc:derby:<YOUR_NAME>** from the drop down list. Now replace the <YOUR_NAME> part of the list item, including the angle brackets, with the directory where the Derby database is stored. This will be in the following location.

[TMHOME]\Tutorials\Source_and_Target\Tutorial_8_Keywords\Target\A\Basicwriters

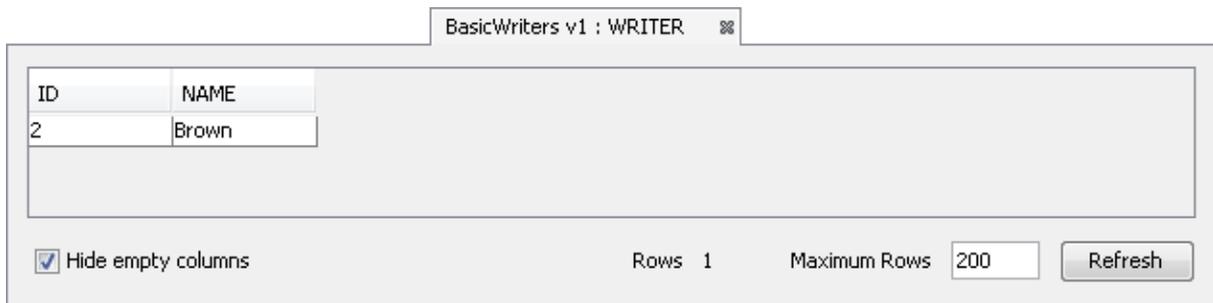
- Go to the driver field and display the list of options available. Select the option called **org.apache.derby.jdbc.EmbeddedDriver**. The Adapter Configuration window will look similar to the image below. **user**, **password** and **sqlinit** are not required.



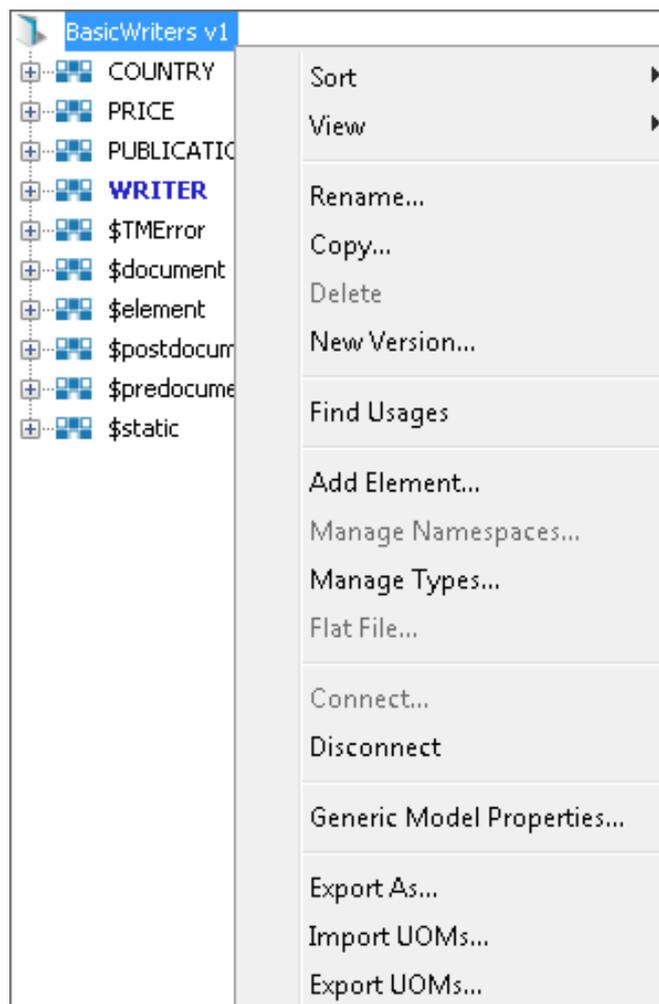
- Click the  button to connect to the data store. A message box will appear telling you that the connection is being made.
- Move your cursor over the **WRITER** element in the data model and display the context menu for the element.



- 7) Select the **View Data...** option from the menu. This will open a new pane in the Editor pane displaying the writer data as shown below.



- 8) Let's look at the **WRITER** element data. Our transform should only have transformed records where the name attribute was Brown. We can see there is only one record that meets our condition and this is reflected in the target where there is only one record as expected.
- 9) Let's close the data pane and disconnect from the data store. Click on the  icon to close the data view pane for **WRITER**.
- 10) Now move the cursor over the name of the data model in the **Transform Target** pane again and display the context menu for the data model.



- 11) Note that the **Disconnect** option is active now. Click on this to disconnect from the data store.

Exercise 7 - Create a New Project

This exercise creates a new project where we will use the flat file data model called **WRITERS v1** as the source data store and a relational database data store called **BasicWriters v1** as the target data model.

- 1) Using your mouse click on the **File** option from the menu bar of TM Designer.
- 2) From the menu, click once on the **New Project...** option.
- 3) The **New Project** window will open.

The screenshot shows the 'New Project' dialog box with the following fields and options:

- Project Name:** An empty text input field.
- Source Model:** A dropdown menu currently showing 'BasicWriters v1'.
- Target Model:** A dropdown menu currently showing 'BasicWriters v1'.
- Set as main project**
- Load Model...** button
- Red error text: **Please specify a valid project name.**
- OK** and **Cancel** buttons at the bottom.

- 4) In the **Project Name** field we will provide a name for the project. Let's call our project **KeywordThisThat** by typing the name into the field.
- 5) Now we must select the target and source models for our project. In the **Source Model** field select **WRITERS v1** from the list. In the **Target Model** field select **BasicWriters v1**.

The screenshot shows the 'New Project' dialog box with the following fields and options:

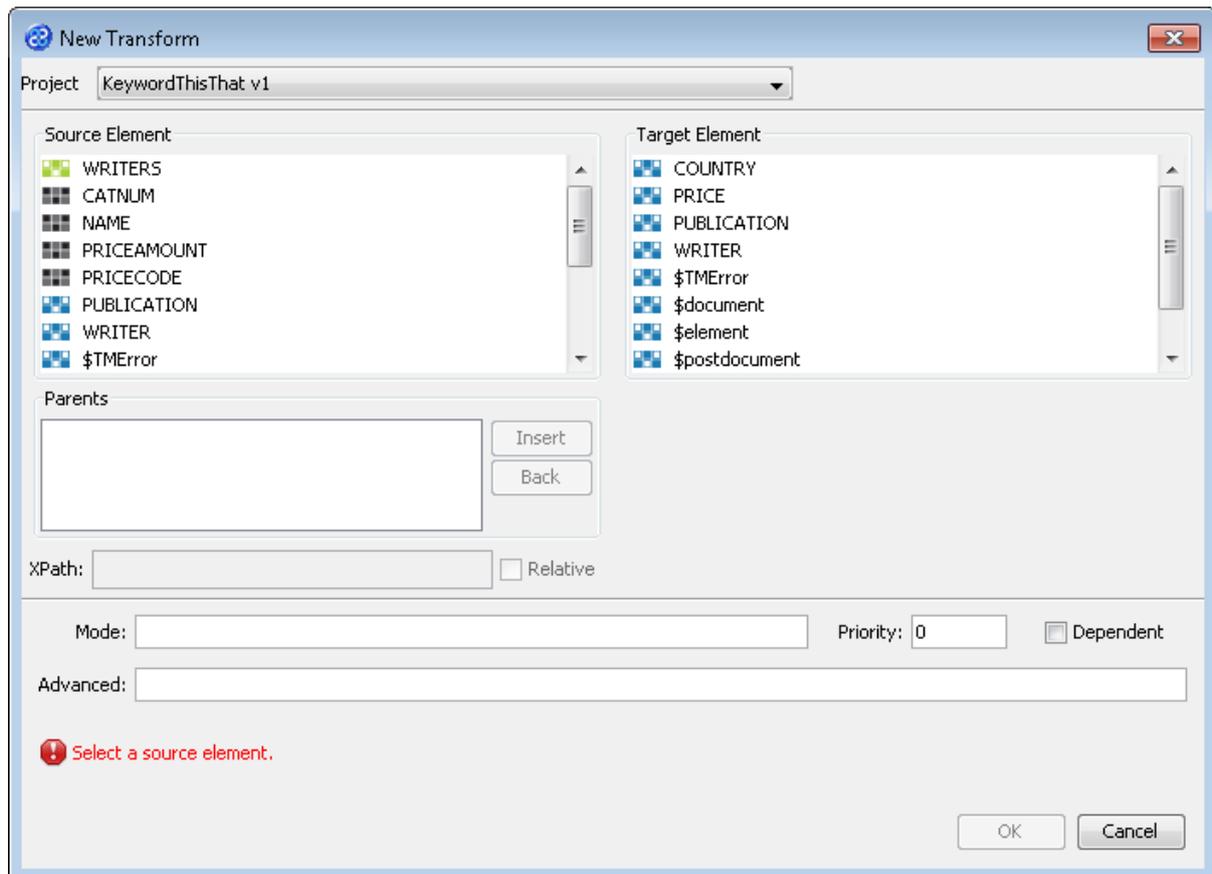
- Project Name:** A text input field containing 'KeywordThisThat'.
- Source Model:** A dropdown menu showing 'WRITERS v1'.
- Target Model:** A dropdown menu showing 'BasicWriters v1'.
- Set as main project**
- Load Model...** button
- OK** and **Cancel** buttons at the bottom.

- 6) Now click once on the **OK** button. Your project will be created and be displayed in the **Projects** pane.

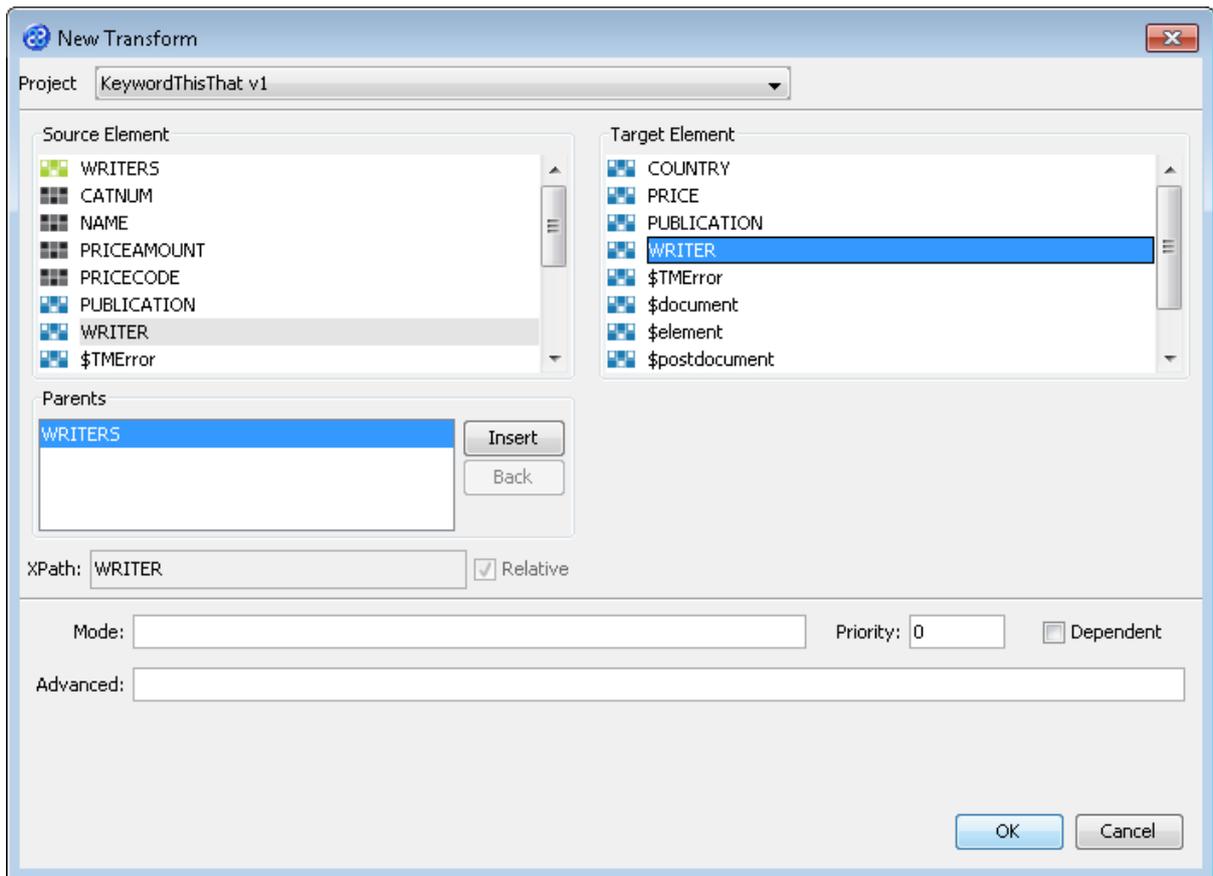
Exercise 8 - Create the THIS and THAT keyword transform

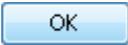
This exercise creates a transform using the **THAT** and **THIS** keywords.

- 1) Click once on the **File** menu bar option.
- 2) Click once on the **New Transform...** option from the sub-menu.
- 3) This will open the **New Transform** window. Ensure that you have the correct project selected in the **Project** drop down list, in our case this will be **KeywordThisThat v1**.



- 4) With the **New Transform** window open, we will select the elements for the source and target. In this case the source and target element will be the same, **WRITER**. The **New Transform** window will look like the one below.



- 5) Click once on the  button to create your new transform.
- 6) The Editor pane will open ready for you to write your transform code once the **New Transform** is created.
- 7) Now we will write our transform. This first part of the transform is the same as the preceding project where only instances with the name Brown will be transformed but notice that we have added that **THAT** and **THIS** keywords. These will have the effect of appending the name to the **NAME** value.

```

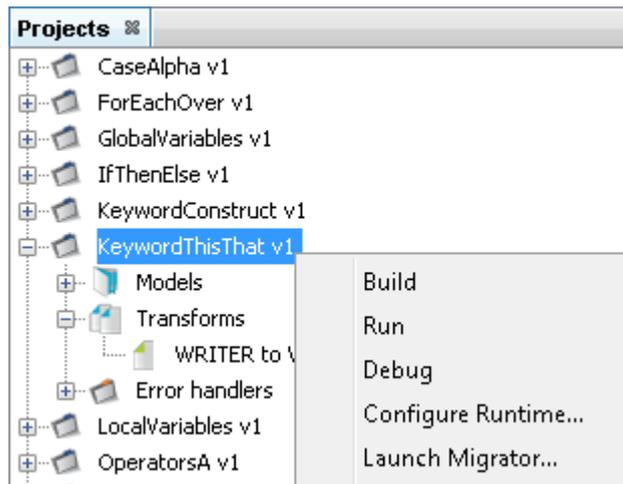
IF (name='Brown') THEN
CONSTRUCT;
<ID> := <id>;
NAME := THAT.NAME & THIS.name;
END_IF;

```

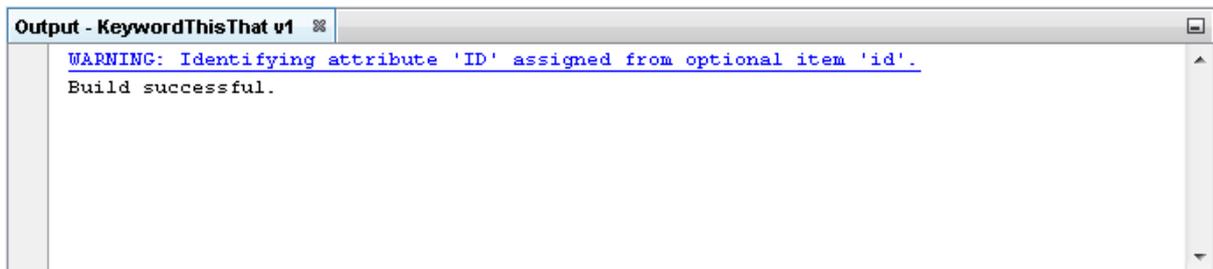
- 8) We have completed our transform.
- 9) Click once on the **File** menu bar option.
- 10) Click once on the **Save** menu bar option to save your transform.

Exercise 9 - Build Your KeywordThisThat Project

- 1) Move your mouse pointer so that it is over the title of the project you are working on and use the right mouse or secondary mouse button to display the context menu.



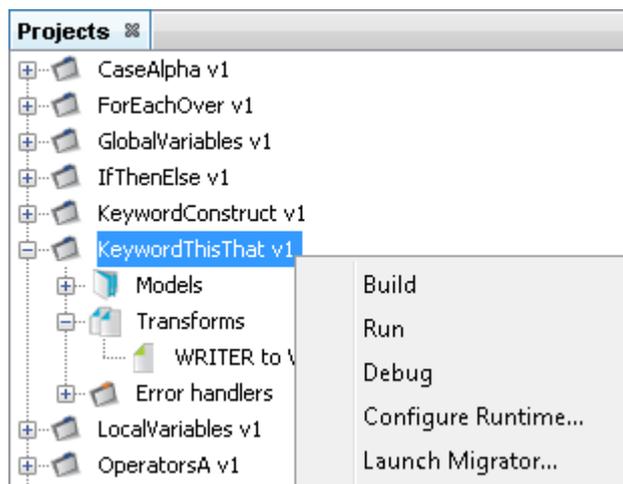
- 2) Click once on the **Build** option from the menu.
- 3) The **Output** pane will open and show you if there are any errors in your transform code. In this exercise you should not have any error messages and you should see a message stating **Build successful..**



Exercise 10 - Run the Project

Now let's Run our transformation to see what results are produced.

- 1) Move your mouse pointer so that it is over the title of the project you are working on and use the right mouse or secondary mouse button to display the context menu.



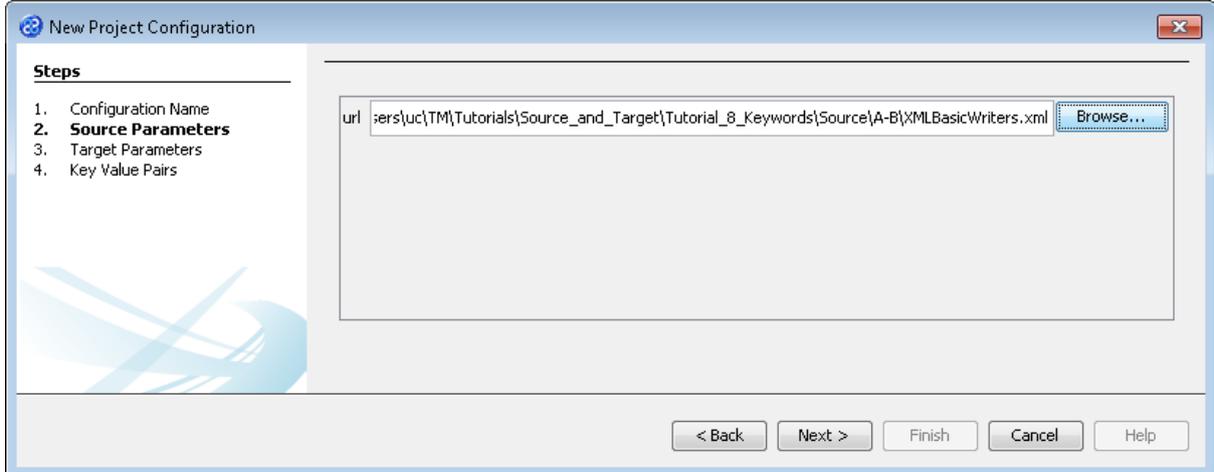
- 2) Click the **Run** option from the menu. TM Designer will now open the New Project Configuration window where you will set the connection information for the project.



- 3) Let's give this configuration the name Config1. Type **Config1** into the **Name** field.
- 4) Click the **Next >** button to move to **Step 2. Source Parameters** where we will provide the details for the source data store connection.
- 5) Go to the **url** field of the **Source Parameters** step. In this field we will specify the location of the source data store. You can type the path and file name manually or you can use the button to select the directory and file. This will be in the following directory.

[TMHOME]\Tutorials\Source_and_Target\Tutorial_8_Keywords\Source\A-B

- 6) The **Source Parameters** step should look similar to the image below.



- 7) Click the **Next >** button to move to **Step 3. Target Parameters** where we will provide the details for the target data store connection. We will be using the same data store for this project as we did for the KeywordConstruct project.

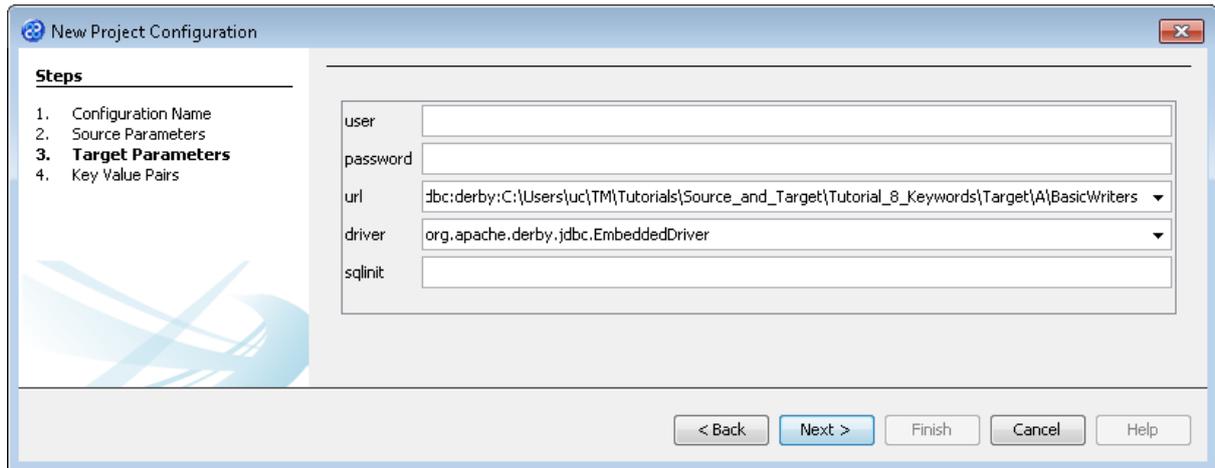


Notice that the target data store for this exercise is the same as the first part of the tutorial where we initially created our **CONSTRUCT** transform. This is so that we can see the effect that the **THIS** and **THAT** keywords have on the data store we have previously populated.

- 8) Go to the **url** field. You will now need to provide the details of where to go to connect to the source data. View the list of options and select the option called **jdbc:derby:<YOUR_NAME>** from the drop down list. Now replace the <YOUR_NAME> part of the list item, including the angle brackets with the directory where the Derby database is stored. This will be in the following location.

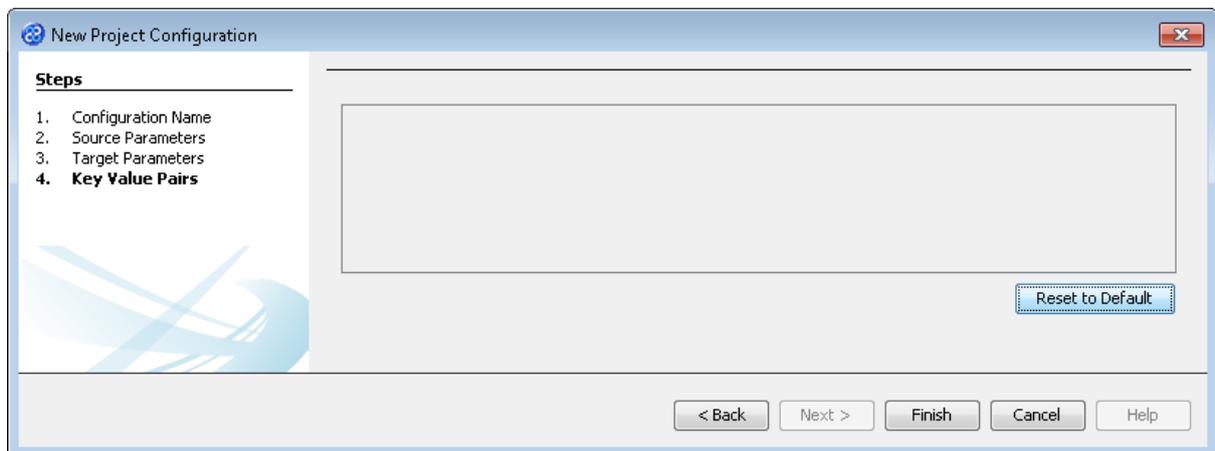
[TMHOME]\Tutorials\Source_and_Target\Tutorial_8_Keywords\Target\A\Basicwriters

- 9) Go to the driver field and display the list of options available. Select the option called **org.apache.derby.jdbc.EmbeddedDriver**. The New Project Configuration window will look similar to the image below. **user**, **password** and **sqlinit** do not require values.



The screenshot shows the 'New Project Configuration' dialog box. On the left, a 'Steps' list shows: 1. Configuration Name, 2. Source Parameters, 3. **Target Parameters**, and 4. Key Value Pairs. The main area contains several input fields: 'user' (empty), 'password' (empty), 'url' (filled with 'jdbc:derby:C:\Users\uc\TM\Tutorials\Source_and_Target\Tutorial_8_Keywords\Target\A\BasicWriters'), 'driver' (filled with 'org.apache.derby.jdbc.EmbeddedDriver'), and 'sqlinit' (empty). At the bottom, there are buttons for '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

- 10) Click the **Next >** button to move to **Step 4. Key Value Pairs**. We do not need to specify any key value pairs in this exercise.



The screenshot shows the 'New Project Configuration' dialog box at Step 4: Key Value Pairs. The 'Steps' list on the left now has 4. **Key Value Pairs** selected. The main area is mostly empty, with a 'Reset to Default' button highlighted in the bottom right corner. The navigation buttons at the bottom are '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

- 11) Click the **Finish** button to save the project configuration and to run the project within TM Designer. This performs the same execution as the **Launch Migrator...** option from the project context menu.

- 12) TM Designer will open the Output - Run pane with the results of running the project as shown below.

```

Output - Run: KeywordThisThat v1 Config1 %
[Map WRITER->WRITER took 1765 msec (1.765 sec) to do 3 (588.3333 msec per map
/ 1.6997167 maps per sec)
Transaction Length:1 (Save per map:true)
Execution complete in 3.781 seconds for project:KeywordThisThat ver:V1.m0
Run Finished Successfully.

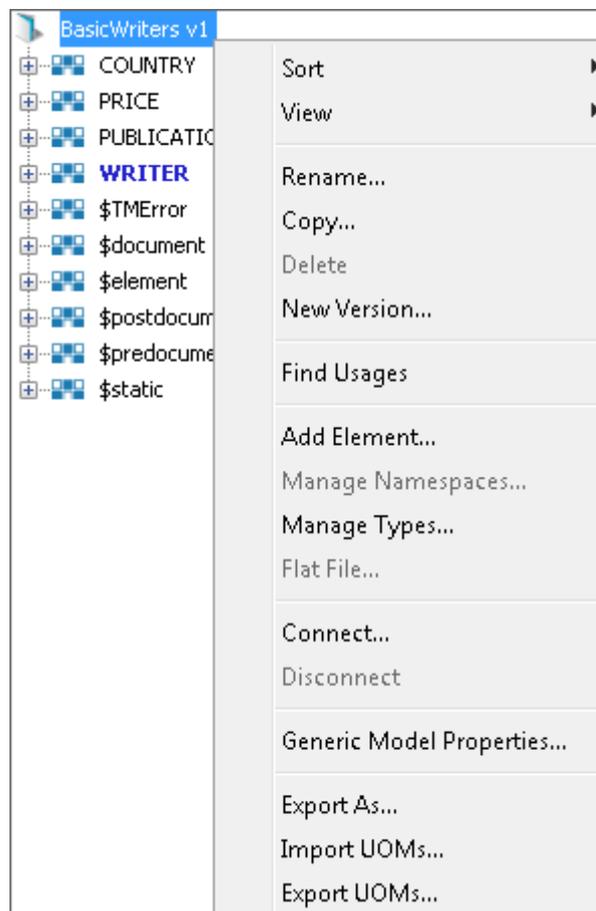
```

13) Lets now check the data using the [View Data...](#) functionality.

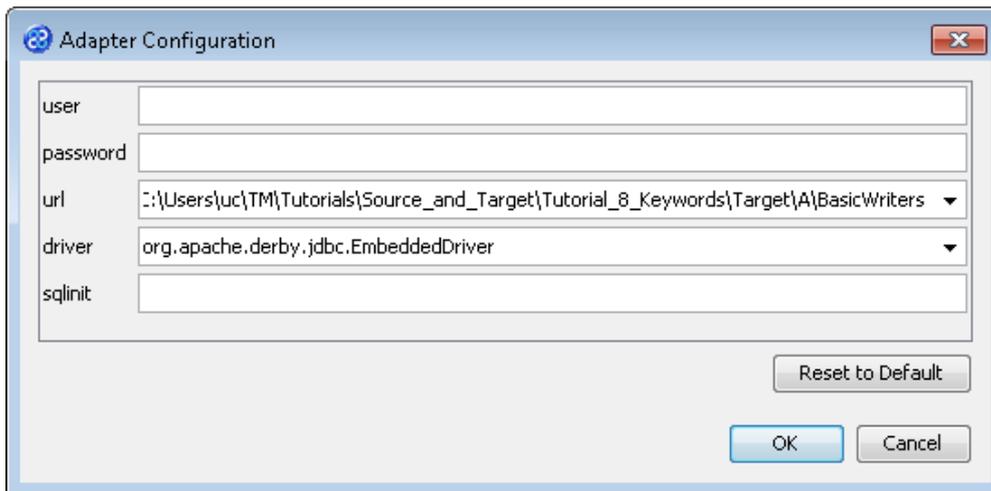
Exercise 11 - View the Target Data

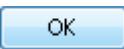
Now lets check our target data store to see if our data has been transformed as expected.

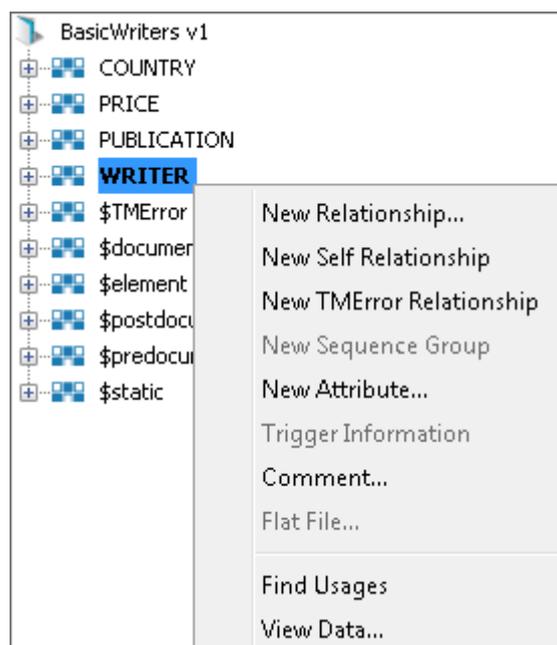
- 1) With the Editor pane still open, move the cursor over the name of the data model in the **Transform Target** pane and display the context menu for the data model.



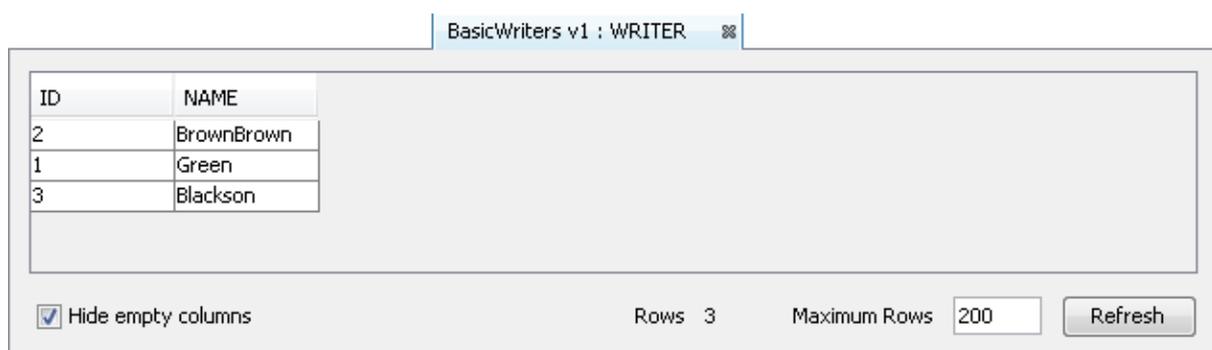
- 2) Select the [Connect...](#) option from the menu. The Adapter Configuration window will open populated with the connection information we require.



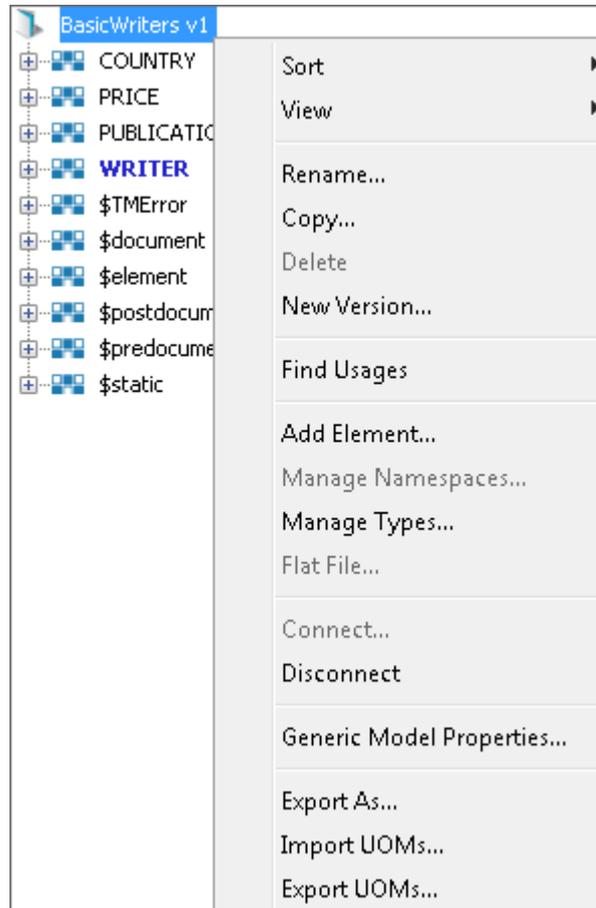
- 3) Click the  button to connect to the data store. A message box will appear telling you that the connection is being made.
- 4) Move your cursor over the **WRITER** element in the data model and display the context menu for the element.



- 5) Select the **View Data...** option from the menu. This will open a new pane in the Editor pane displaying the writer data as shown below.



- 6) Let's look at the **WRITER** element data. We can see that our use of the THIS and THAT keywords have appended the **name** to the **NAME** value to give us BrownBrown as expected.
- 7) Let's close the data pane and disconnect from the data store. Click on the  icon to close the data view pane for **WRITER**.
- 8) Now move the cursor over the name of the data model in the **Transform Target** pane again and display the context menu for the data model.



- 9) Note that the **Disconnect** option is active now. Click on this to disconnect from the data store.