by experts
for experts

Transformation Manager
Version 5.2

Tutorial 2 - Loading Data Models

Transformation
Manager

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Tutorial 2

Loading Data Models

This tutorial is focussed on the process of loading data models into your repository. In our first tutorial you will have loaded a flat file data model and a Derby database data model. We have included exercises for these here for the sake of completeness. However, Transformation Manager lets you load a number of different types of data store data model. Within this set of exercises we have provided an example of each for you.

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 tutorial 1.

Click on the appropriate link below.

Load a Database Data Model - BasicWriters Derby database

Load an ORACLE Data Model

Load a Flat File Data Model

Load an Excel Data Model

Load an XML Data Model

Load a Java Data Model

Load a Database Using a Derby database

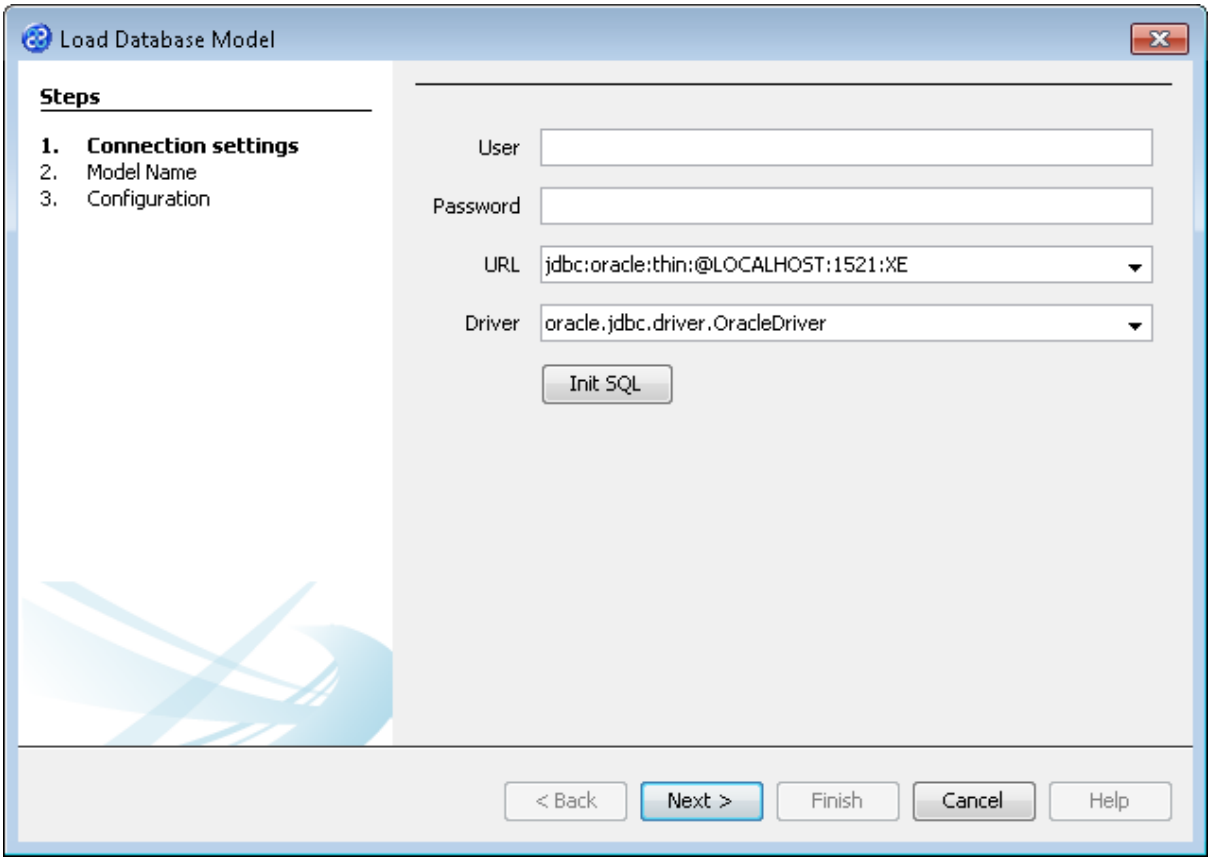
This exercise steps you through the process of importing a database. For the purposes of this exercise we will be importing a Derby database called BasicWriters which we will use in later tutorials. No username or password is required for this data model import.

1) Using your mouse click on the File option from the menu bar of TM Designer.

2) From the sub menu, click once on the Load Model option. This will display a further list of options which represents the variety of data stores that TM Designer can import.

3) From the list presented click once on the Database... option.

4) The **Load Database Model** wizard will open. This wizard steps through the process of importing the data store you want to import. The wizard starts with the Connection settings page.



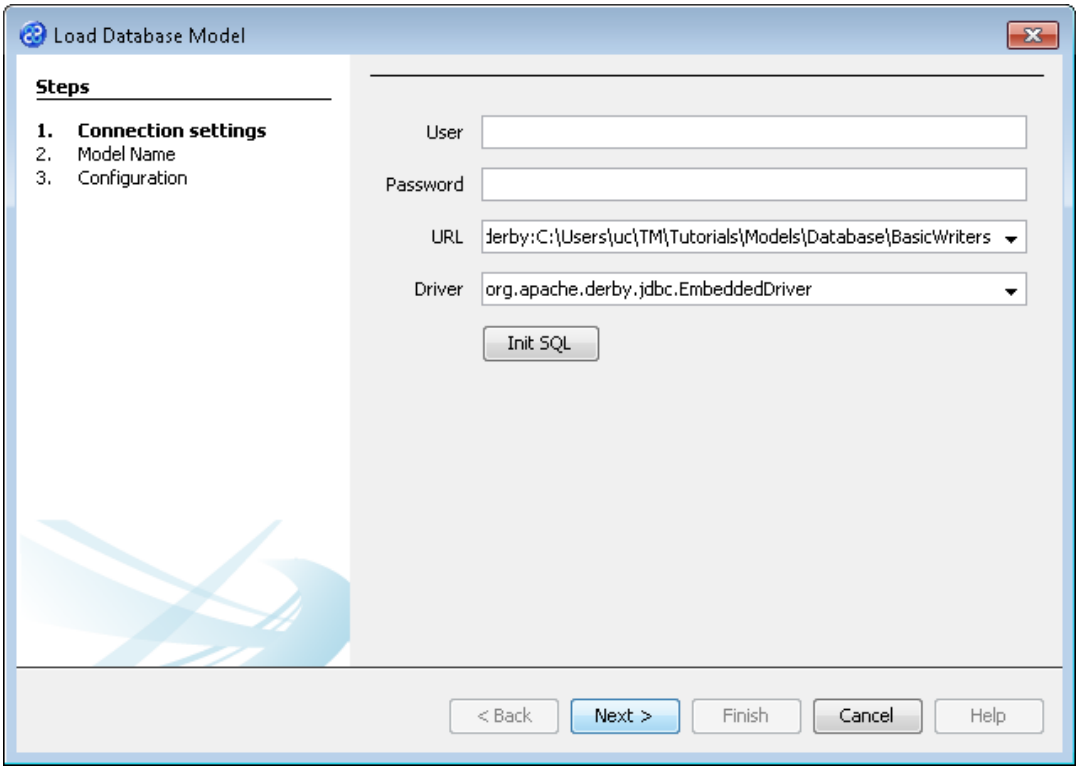
a) In this exercise we do not need **User** or **Password** values to connect to the example relational database.

b) In the URL drop down list we will select **jdbc:derby:<YOUR_NAME>** from the list of options presented. The **<YOUR_NAME>** part of the URL requires the path to the Derby database directory. This will be in the following location.

```
[TMHOME]\Tutorials\Models\Database\BasicWriters\
```

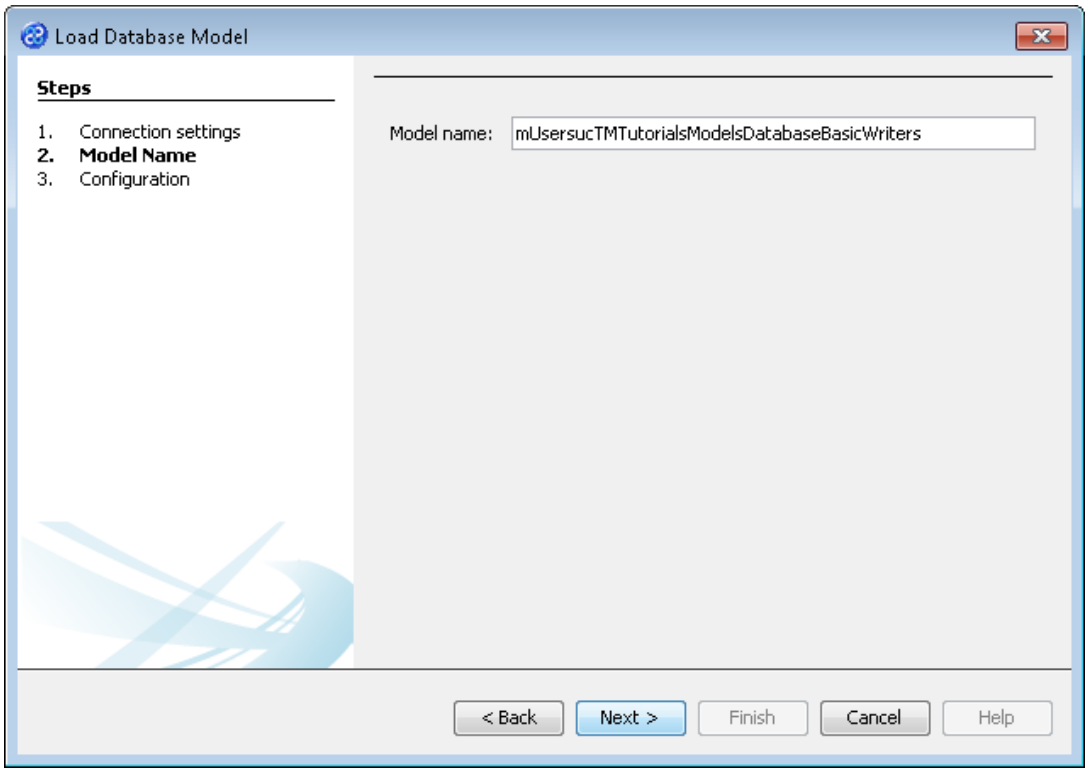
c) We must now specify a driver to use for this example relational database. In the Driver drop down list select **org.apache.derby.jdbc.EmbeddedDriver** from the list provided.

d) In this example we do not need to provide any value for **Init SQL**.

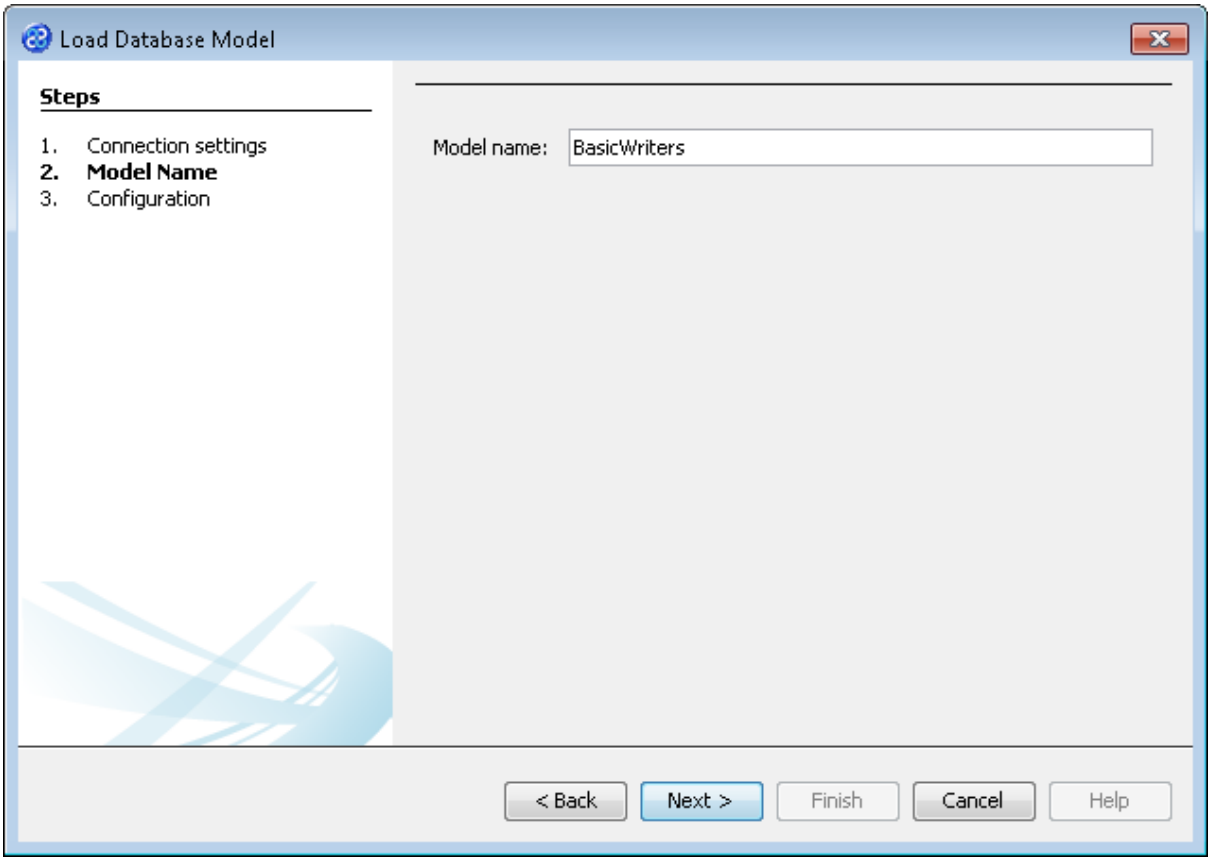


5) The **Connection settings** page is now complete. Click once on the Next > button to move to the next step.

6) The next page is the **Model Name** page. Note that by default TM Designer will insert a lower case m into the **Model name** with the path to the data store added afterwards. So you will see the following value m[TMHOME]TutorialsModelsDatabaseBasicWriters. This can be removed when you give the model your own name. Now we will provide a name for the model.



a) In this example we will give our data model the name BasicWriters.



7) The Model Name page is now complete. Click once on the Next > button to move to the next step.

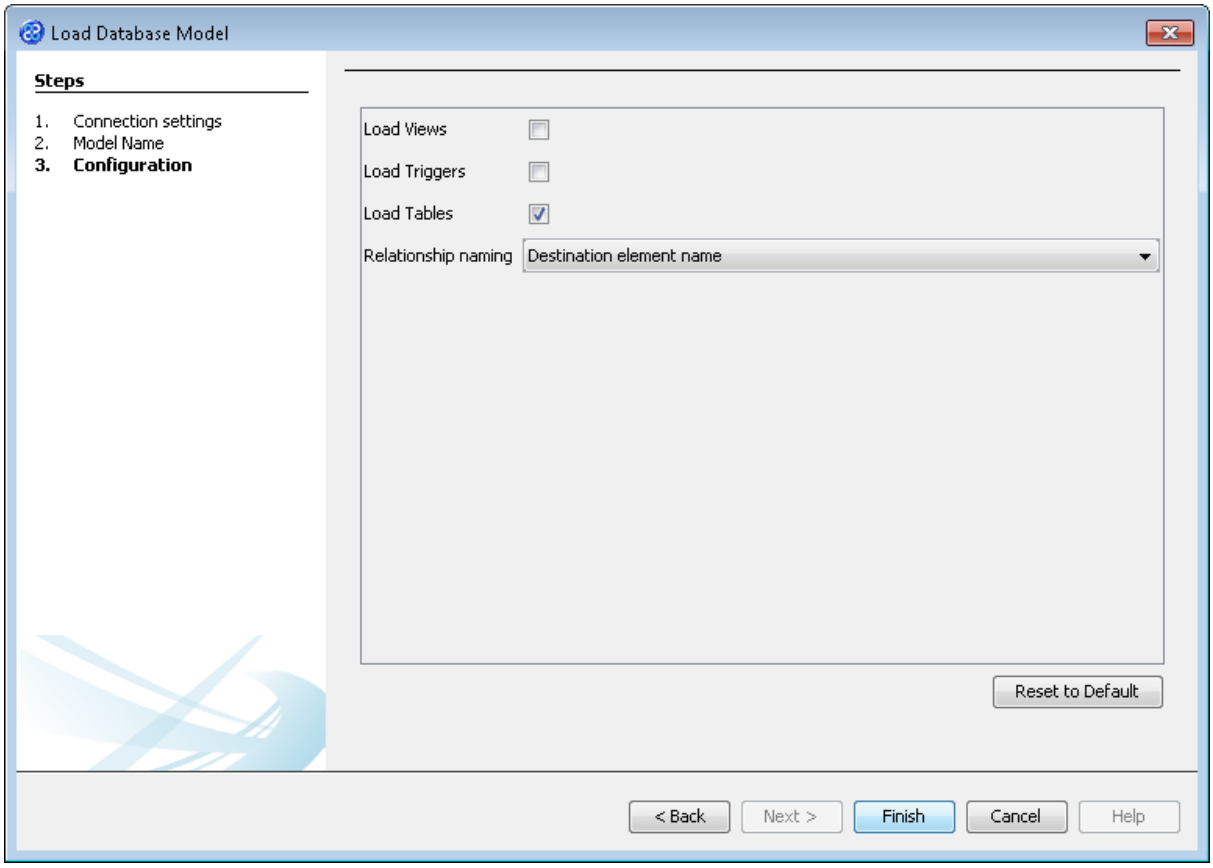
8) The last page is the **Configuration** page. The content of this page is dynamic and will change depending on the type of data store you are connecting to. Our example database is a simple Derby relational database and therefore has a limited set of items to select.

   a) We will not **Load Views**.

   b) We will not **Load Triggers.**

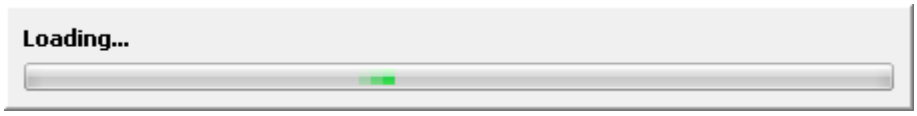
   c) We will **Load Tables** so make sure that the tick box has a tick in it.

   d) **Relationship naming** lets you specify how a data model relationship will be named in TM Designer. The default value is **Destination element name** which, as an example, is the child element or table name in a parent child relationship. We will use that value for this exercise.



9) Now let's import the Derby database and create our data model by clicking once on the Finish button.

10) You will now see the loading message box. When the data model has been loaded this will disappear and you will return to the main interface.



11) Now look at the Models pane to see that your relational database model has been created. It will be called **BasicWriters v1**. Additional elements are added to the data model by default. These are prefixed with the $ sign and include the following elements.

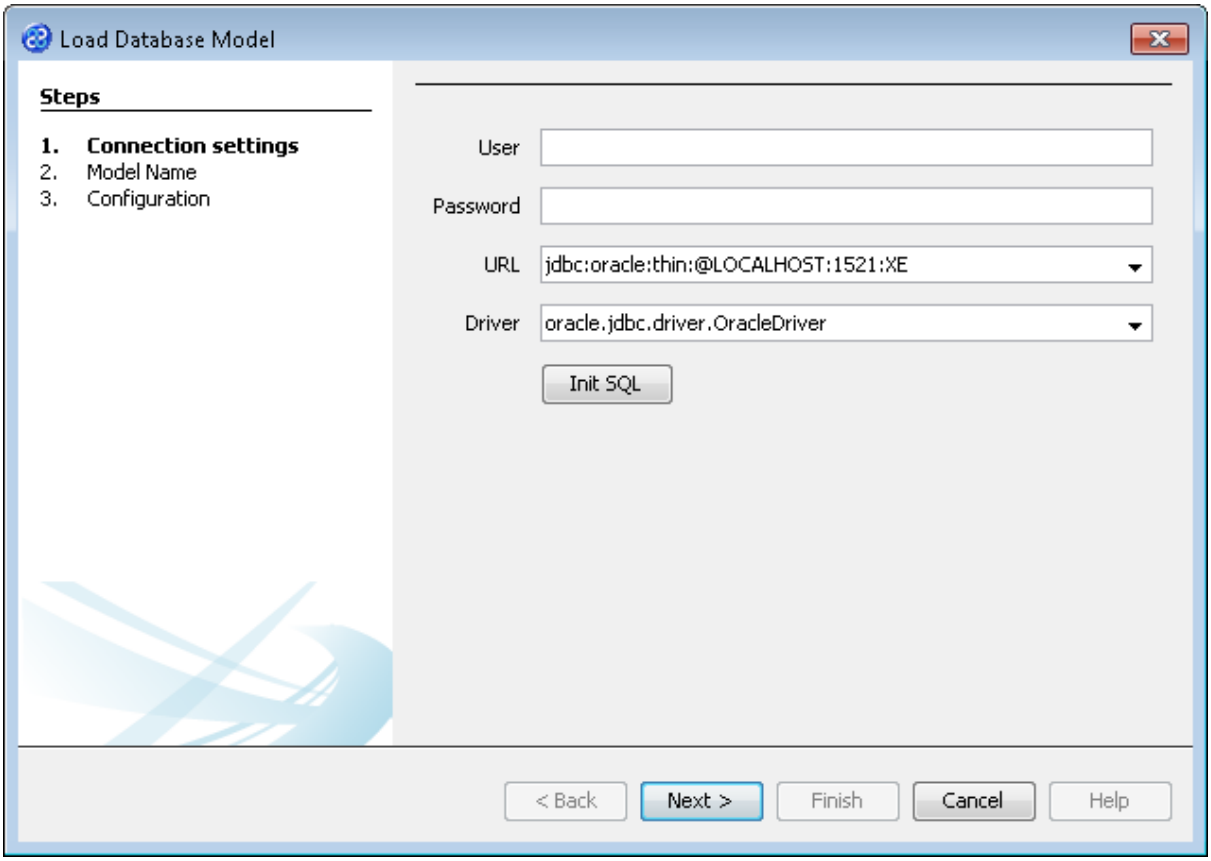
- $TMError
- $document
- $element
- $postdocument
- $predocument
- $static

Load an ORACLE database

This exercise steps you through the process of importing an ORACLE® relational database. For the purposes of this exercise we will be providing examples of the information necessary for importing an ORACLE® database. We have not provided an ORACLE® database as a sample for you to load but you can use one of your own local ORACLE® databases for this exercise as an alternative.

This exercise assumes that you are familiar with ORACLE® databases and you know how to install and connect to an appropriate database. If this is not the case then this exercise is probably unnecessary.

1) Using your mouse click on the File option from the menu bar of TM Designer.
2) From the menu, click once on the Load Model option. This will display a further list of options which represents the variety of data stores that TM Designer can import.
3) From the list presented click once on the Database... option.
4) The Import Database Model wizard will open. This wizard steps through the process of importing the data store you want to import. The wizard starts with the Connection settings page which opens with the default settings shown below.



a) In this exercise you will need the **User** and **Password** values to connect to your ORACLE® database.

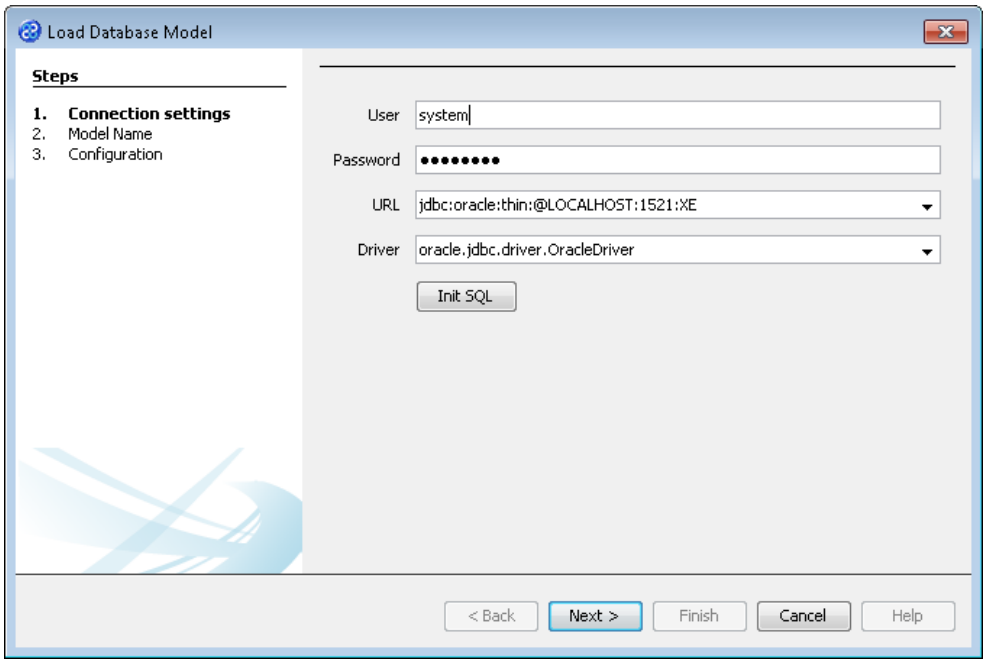
b) In the URL drop down list we will select **jdbc:oracle:thin:@ <IP.ADD.RES.S> :1521:ORCL** from the list of options presented. The **<IP.ADD.RES.S>** part of the string can be a specific IP Address, a hostname or URL path to the database. The listening port is port 1521 but can be

changed if required and the database SID is, by default, ORCL but can again be changed if necessary.

c) We must now specify a driver to use for the relational database data store. In the Driver drop down list select **oracle.jdbc.driver.OracleDriver** from the list provided.

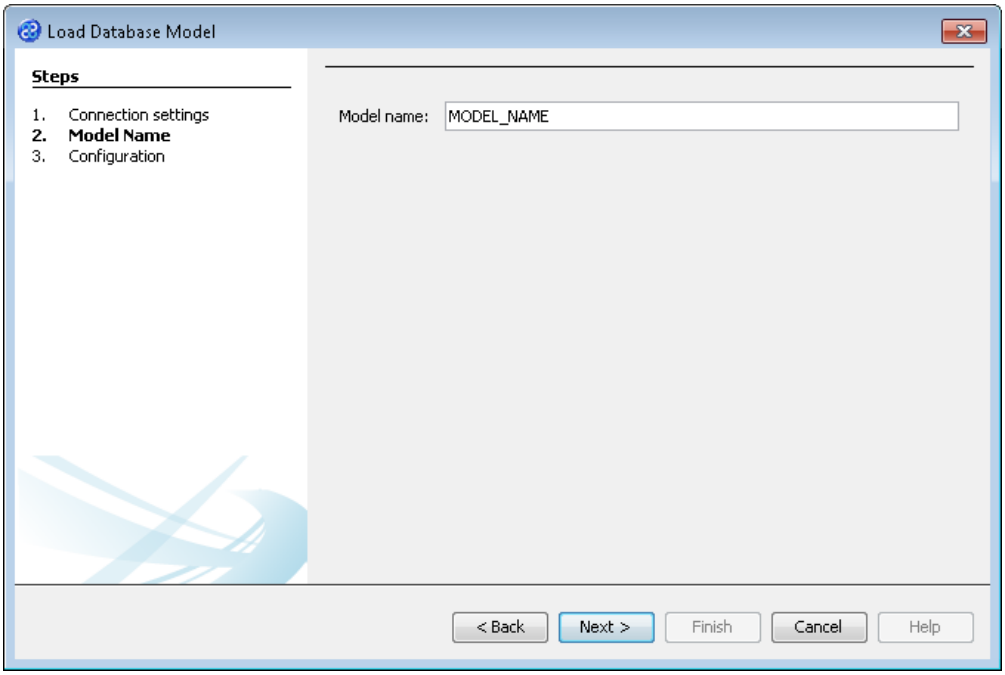
d) In this example we do not need to provide any value for the **Init SQL** field.

5) Add the details as shown above or use your own local values as shown below.



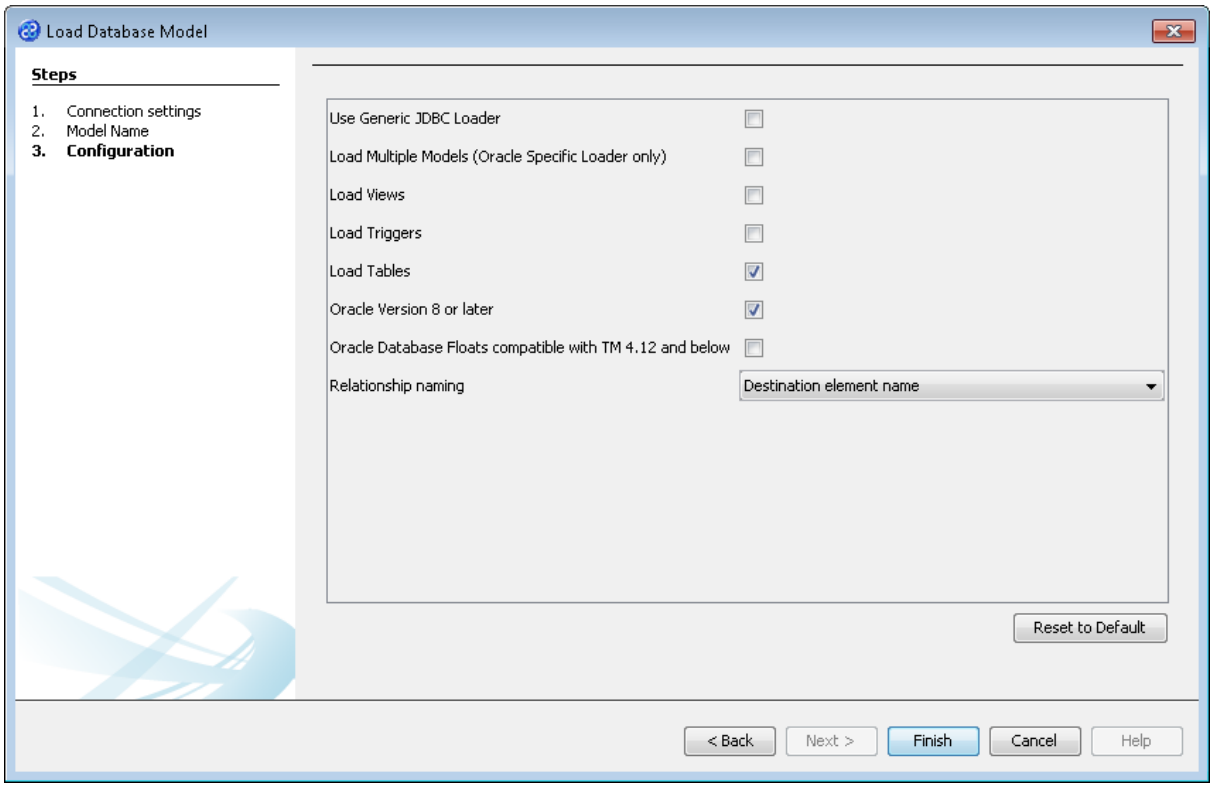
6) The **Connection settings** page is now complete. Click once on the Next > button.

7) The next page is the **Model Name** page. By default, TM Designer will put the name of the default schema for the username entered for step 1 into the **Model name** field, though you may change this if required.



8) The Model Name page is now complete. Click once on the Next > button.

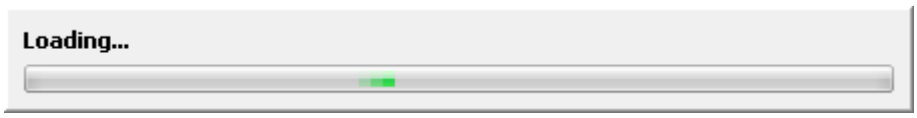
9) The last page is the **Configuration** page. This is specific to ORACLE databases.



10) You can select any of the tick boxes on this page but note that there is a specific option for versions of ORACLE® before version 8.

11) Now let's execute our data model import by clicking once on the Finish button.

12) You will now see the **Loading...** message box. When the data model has been loaded this will disappear and you will return to the main interface.



13) Now click on the Models pane to see that your ORACLE® database model has been created. It will be identified by the name you gave it in step 2.

Load a Flat File

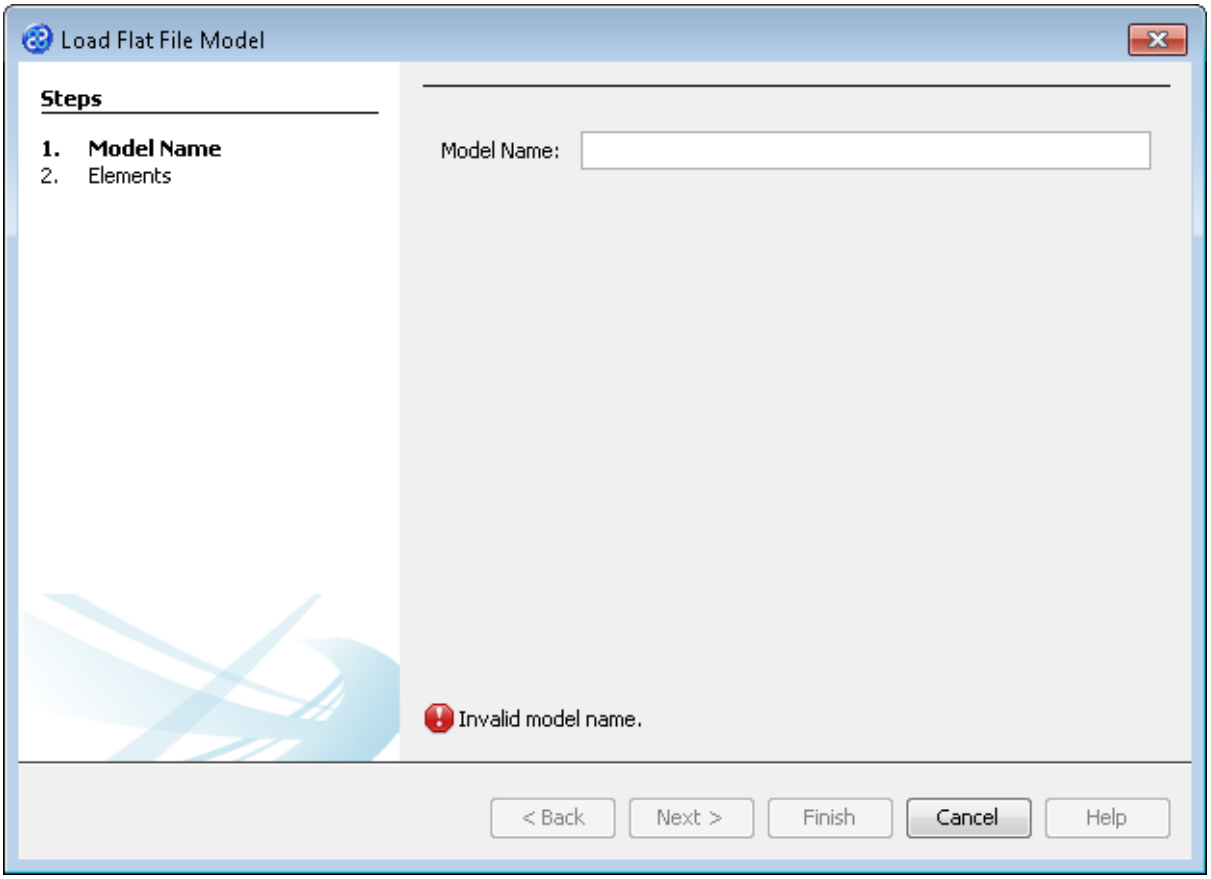
This exercise introduces you to the process of creating a flat file data model. In this exercise we will create two elements in our data model using two separate text files for each element.

1) Using your mouse click on the File option from the menu bar of TM Designer.

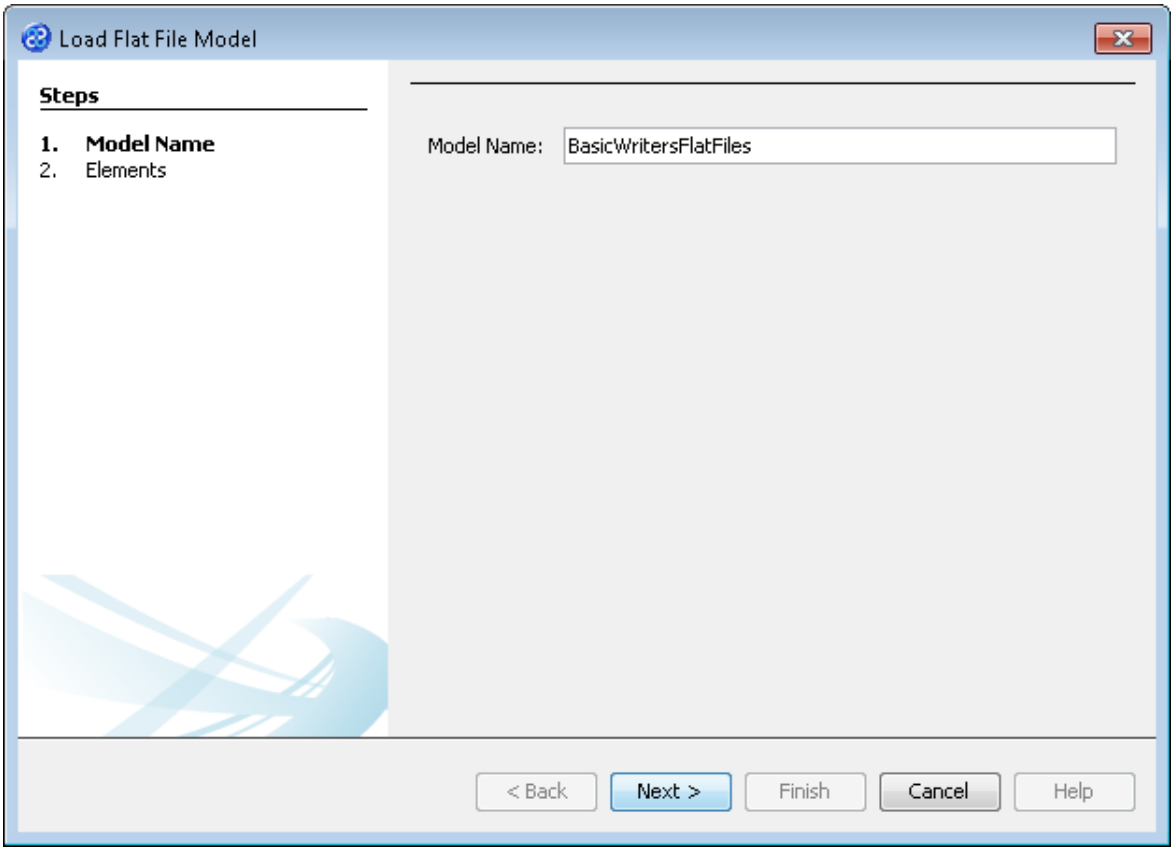
2) From the menu, click once on the Load Model option. This will display a further list of options which represents the variety of data stores that TM Designer can import.

3) From the list presented click once on the Flat File... option.

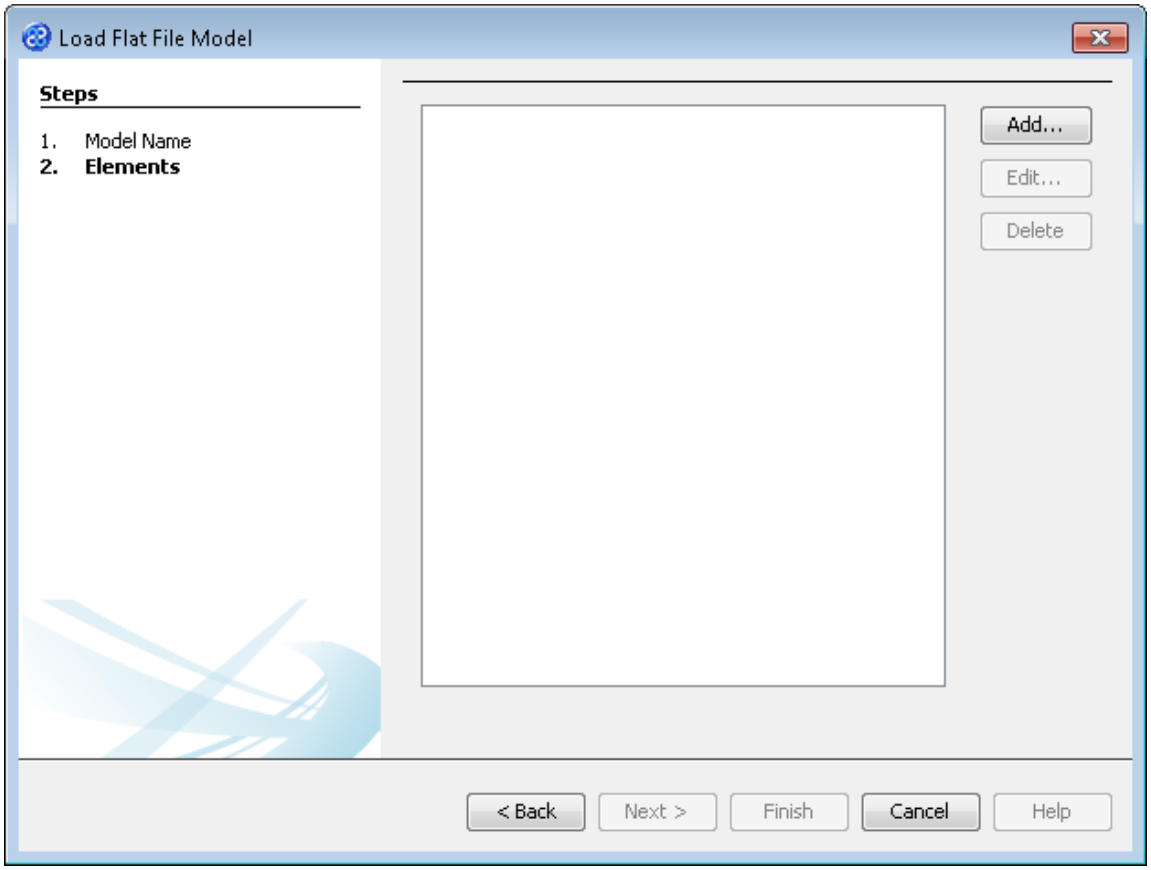
4) The **Load Flat File Model** wizard will open. In this exercise we will use two existing flat files to create our data model.



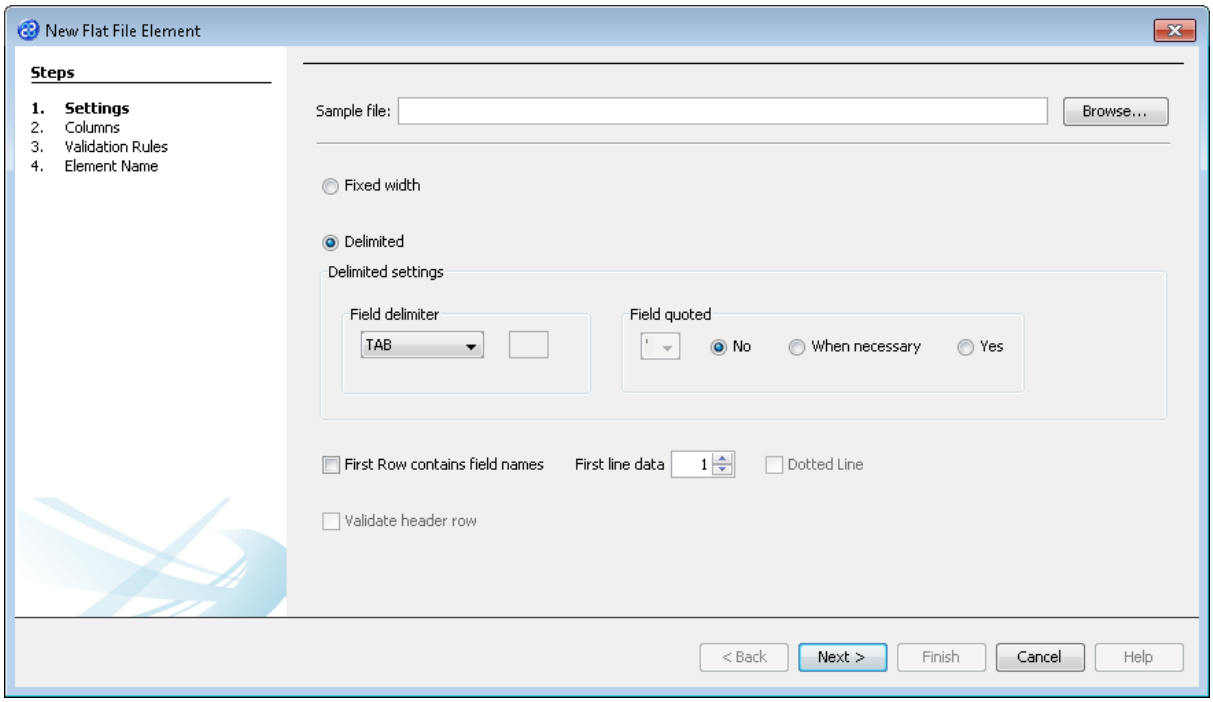
5) Now let's give the model a name. Type BasicWritersFlatFiles into the **Model Name** field. Data model names must not end with a number and must not have spaces.



6) Click once on the Next > button. This will take you to the **Elements** step of the wizard.



7) At this point we will need to click on the button. This opens a secondary wizard that lets you create the elements you need for your data model. The wizard is called **New Flat File Element**.



8) This wizard lets you create your flat file data model. There are two ways to do this. The first is to create each column in the element manually. The second is to import the columns from an existing flat file. In this exercise we will import the columns from an existing file. The wizard has four steps before the task is complete.

9) Click once on the button and navigate to the following directory.

```
[TMHOME]\Tutorials\Models\FlatFile\BasicWritersFlatFiles
```

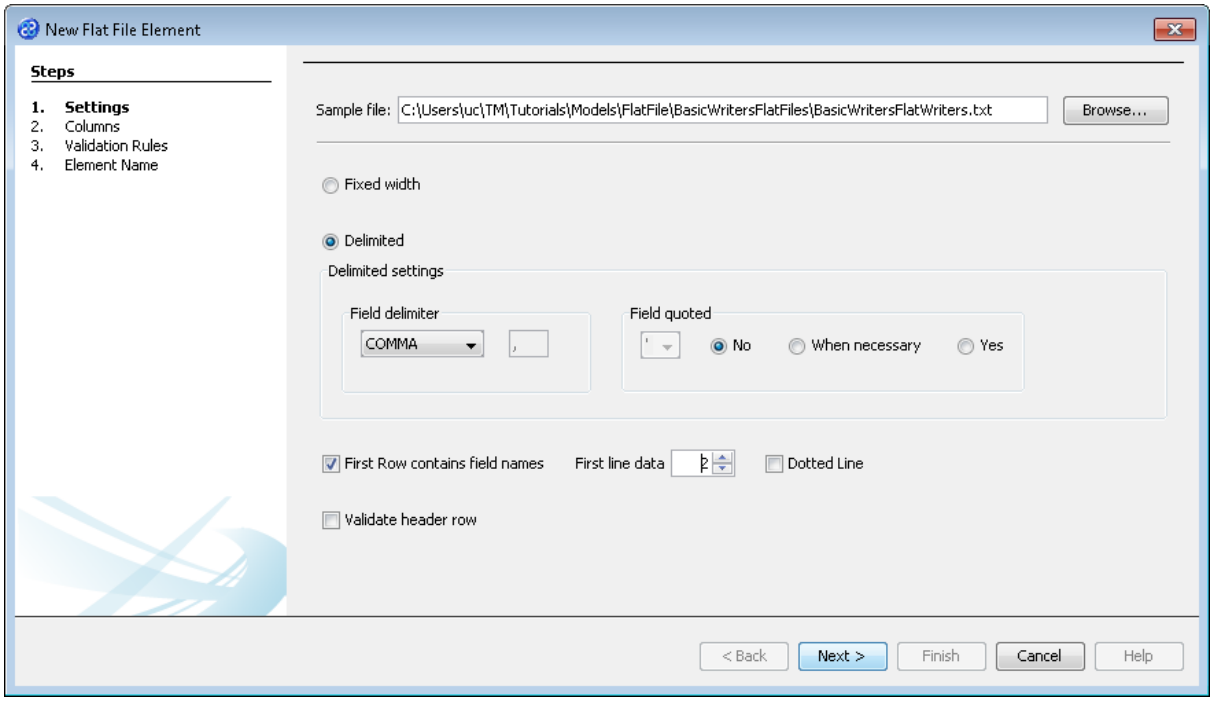
10) There are two flat files. Click on the file called BasicWritersFlatWriters.txt to select the file and then click once on the Select File button.

11) Let's complete the rest of the options for step **1. Settings**.

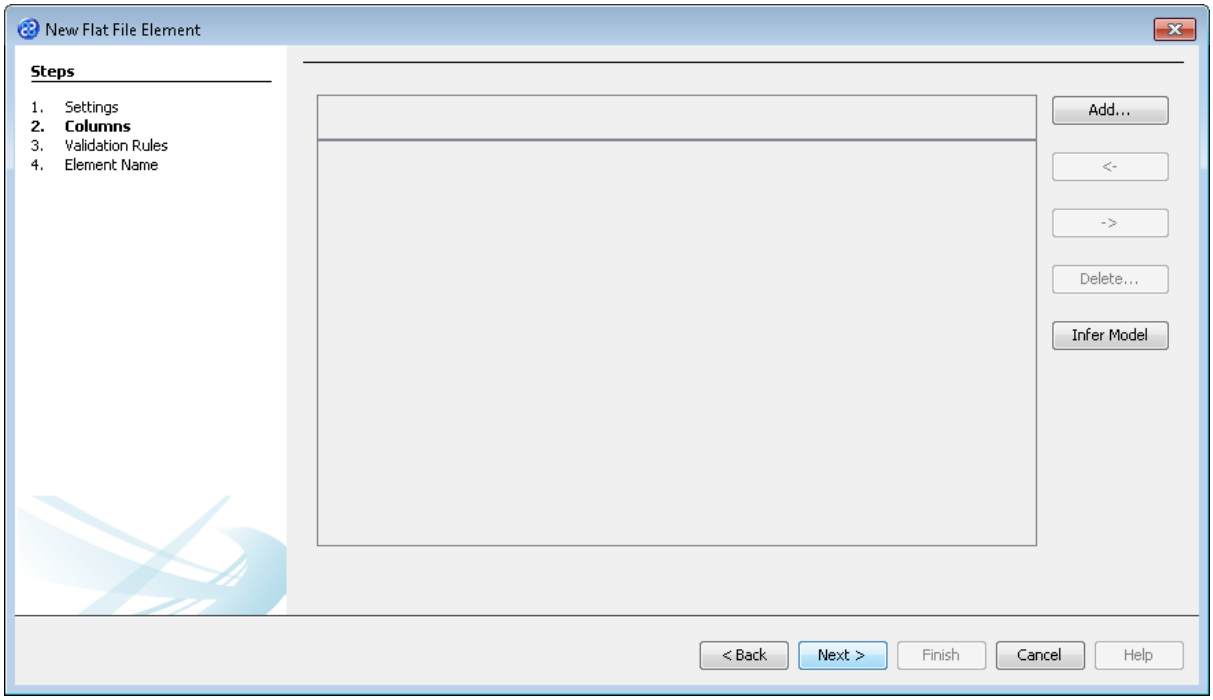
   a) Let's set the **Field delimiter** drop down list box to COMMA.

   b) We shall leave the **Field quoted** value as the default: the radio button **No** is selected.

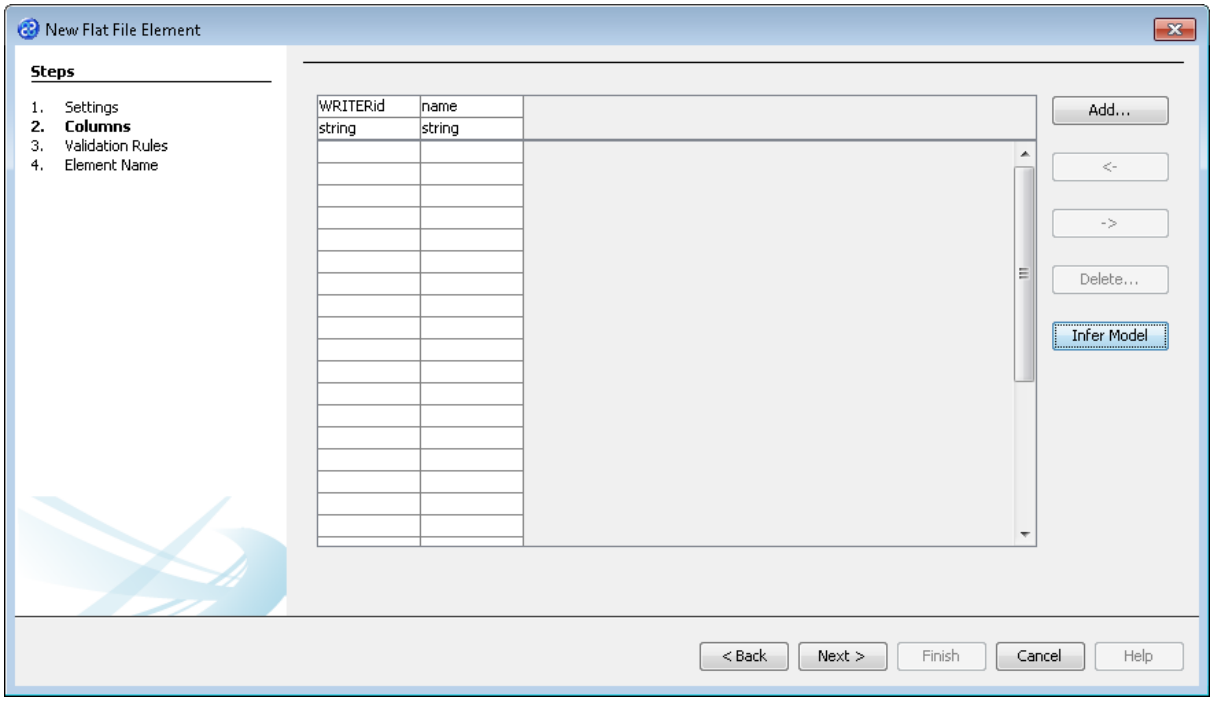
   c) Let's now put a tick into the **First Row contains field names** tick box. You will notice that an error will be displayed, **You have specified a start line of 1. This is not logical with your current header.** This occurs because the **First line data** field will, by default, have the value 1 but this is also the line for the field names. Change this value to 2 to handle the error.



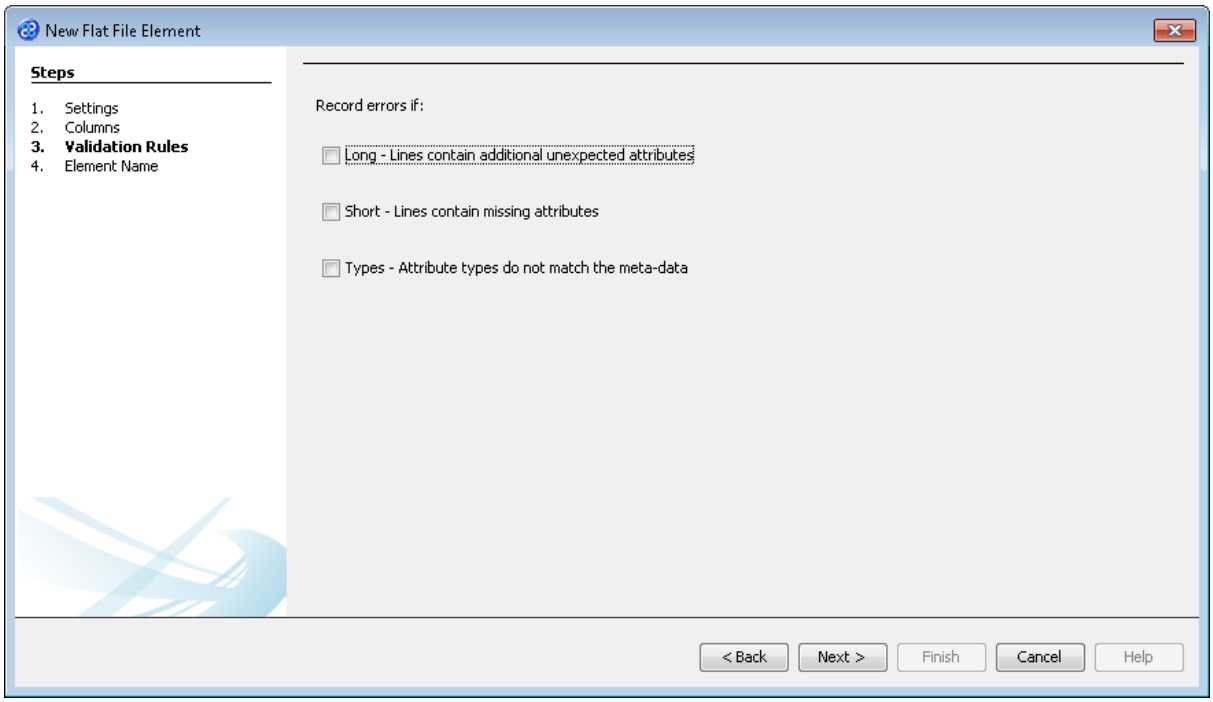
12) Click the Next > button to move to the next step, **2. Columns**.



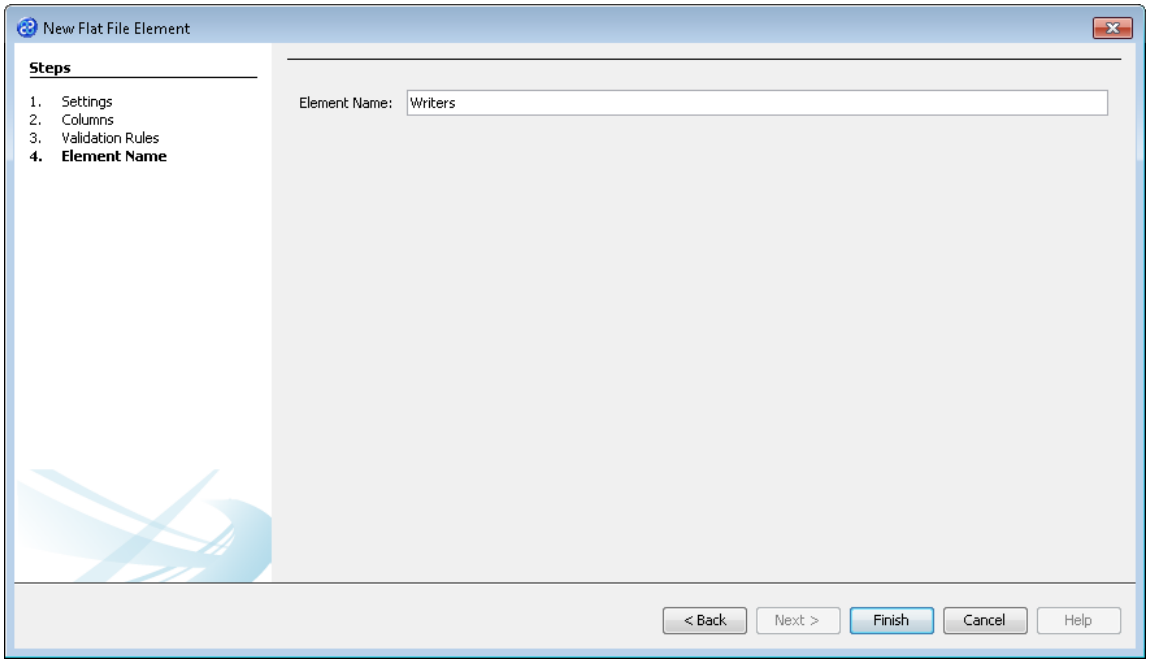
13) Click on the Infer Model button in the **New Flat File Element** window. You will see the columns in the file appear in the page showing the column heading and the data type beneath each, which will be **string** for both columns.



14) Click the Next > button to move to the next step, **3. Validation Rules**. There are three tick boxes on this page. For this flat file data model we will not require any of the validation rules. All tick boxes should be left blank.

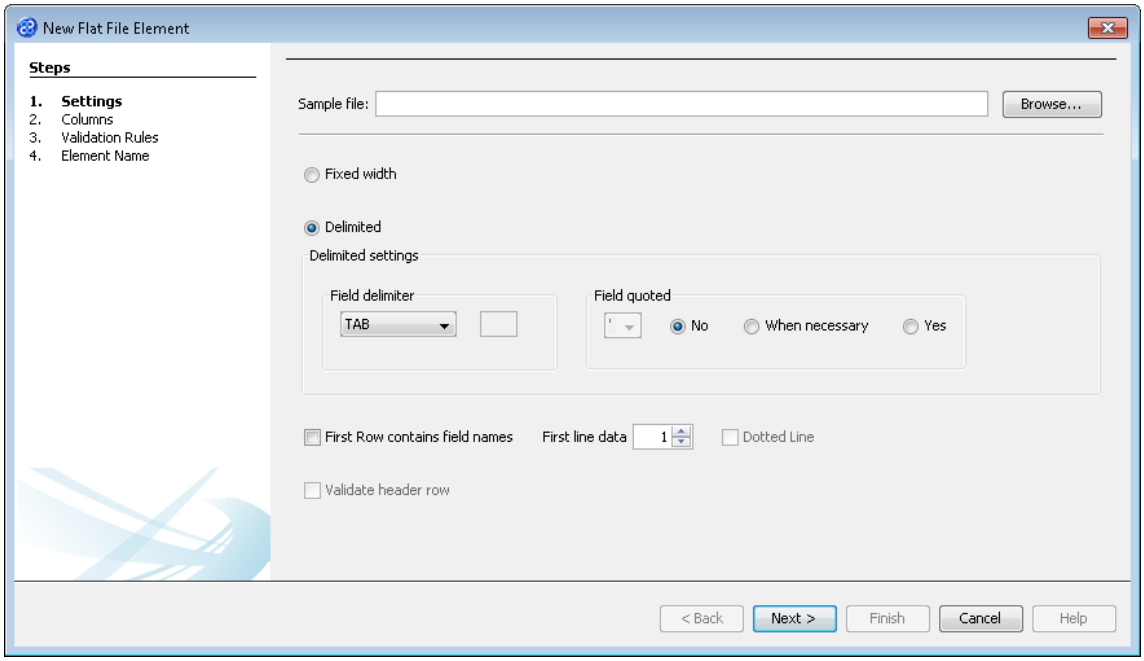


15) Click the Next > button to move to the next step, **4. Element Name**. Let's enter the element name Writers in the **Element Name** field.



16) Click once on the Finish button to return to the **Load Flat File Model** wizard ready to add another element.

17) At this point we will need to click on the button to add our second element to the data model. This will open the wizard that lets you create the elements you need for your data model. The wizard is called **New Flat File Element**.



18) For this step we will import the columns from an existing file. The wizard has four steps before the task is complete.

19) Click once on the button and navigate to the following directory.

```
[TMHOME]\Tutorials\Models\FlatFile\BasicWritersFlatFiles
```

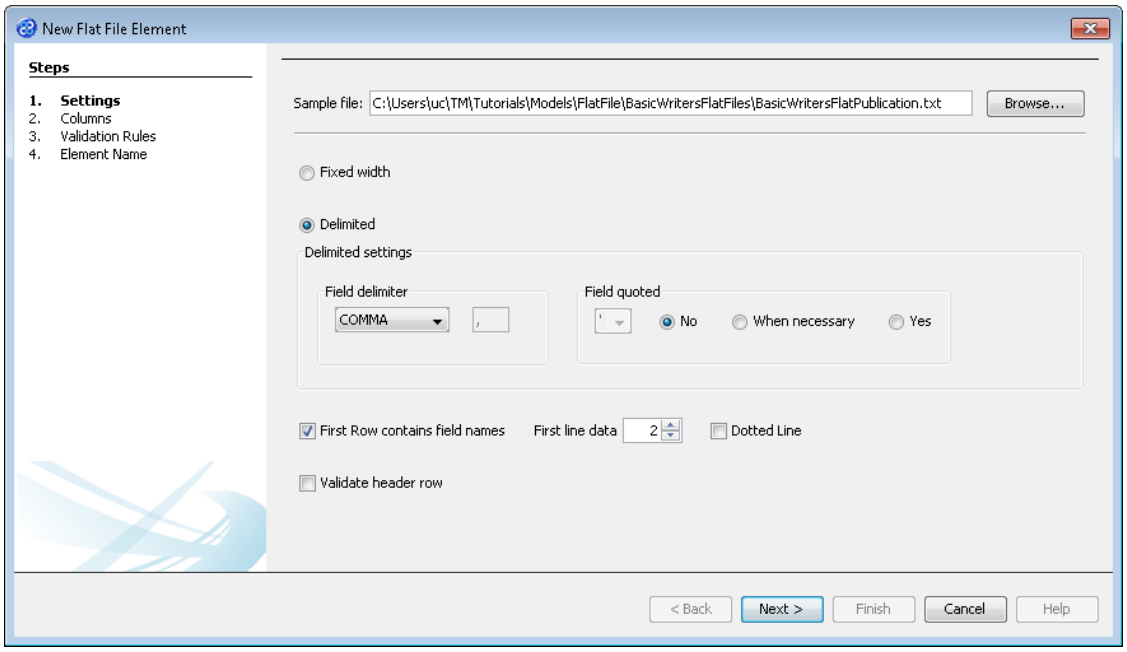
20) There are two flat files. Click on the file called BasicWritersFlatPublication.txt to select the file and then click once on the Select File button.

21) Let's complete the rest of the options for step **1. Settings**.

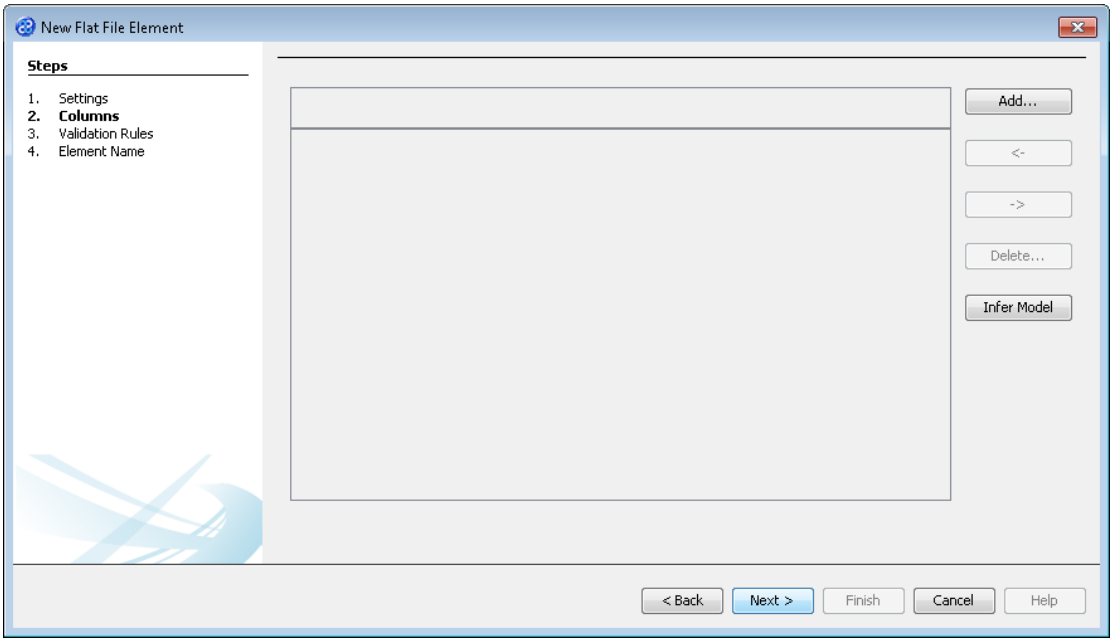
a) Let's set the **Field delimiter** drop down list box to COMMA.

b) We shall leave the **Field quoted** value as the default: the radio button **No** is selected.

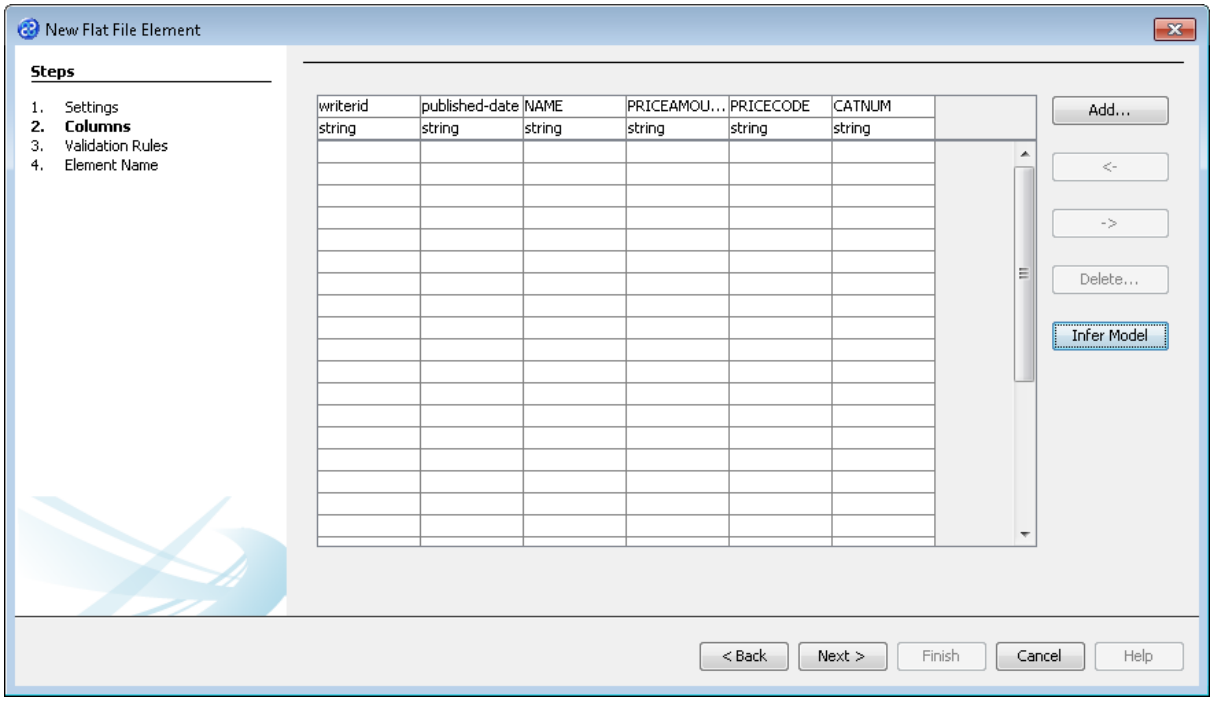
c) Let's now put a tick into the **First Row contains field names** tick box. You will notice that an error will be displayed, **You have specified a start line of 1. This is not logical with your current header.** This occurs because the **First line data** field will, by default, have the value 1 but this is also the line for the field names. Change this value to 2 to handle the error.



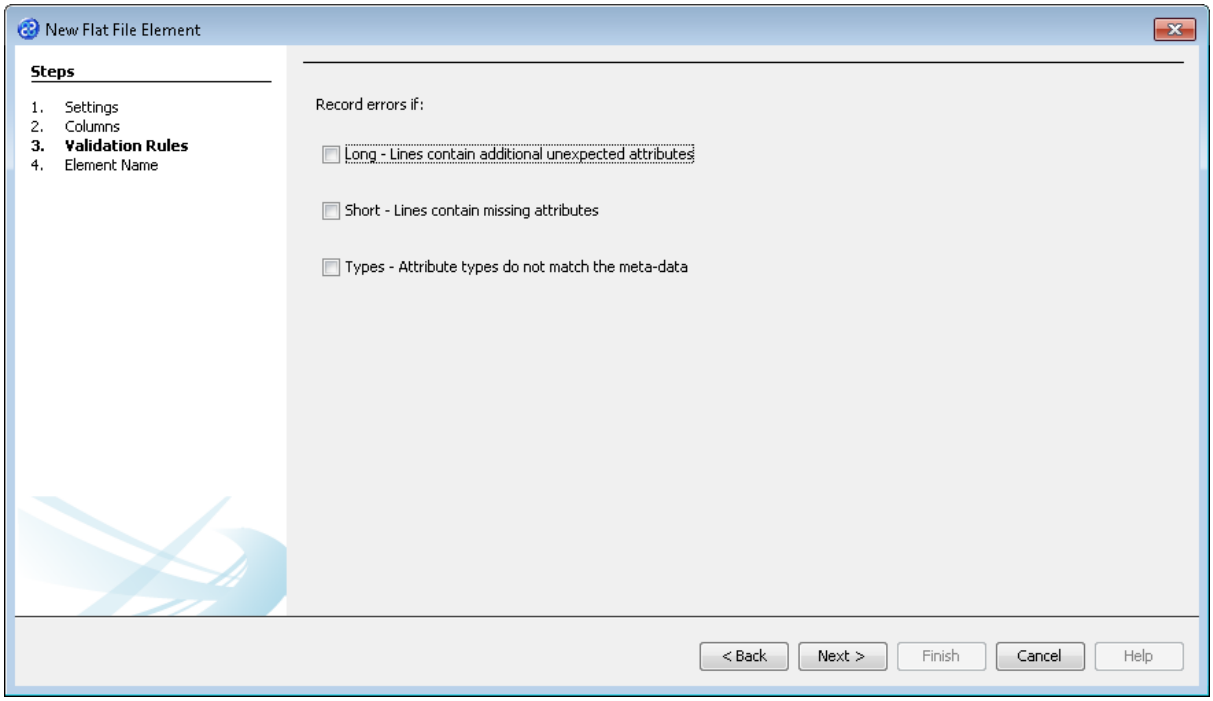
22) Click the Next > button to move to the next step, **2. Columns**.



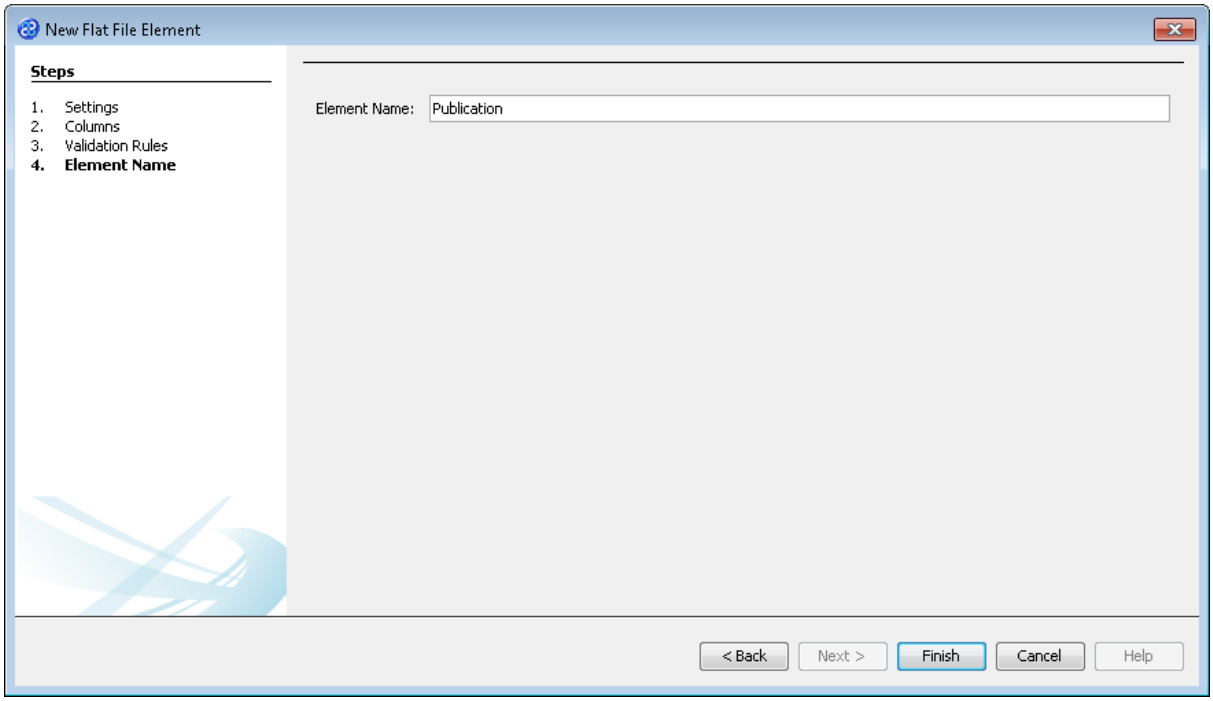
23) Click on the Infer Model button in the **New Flat File Element** window. You will see the columns in the file appear in the page showing the column heading and the data type beneath each, which will be **string** for all the columns.



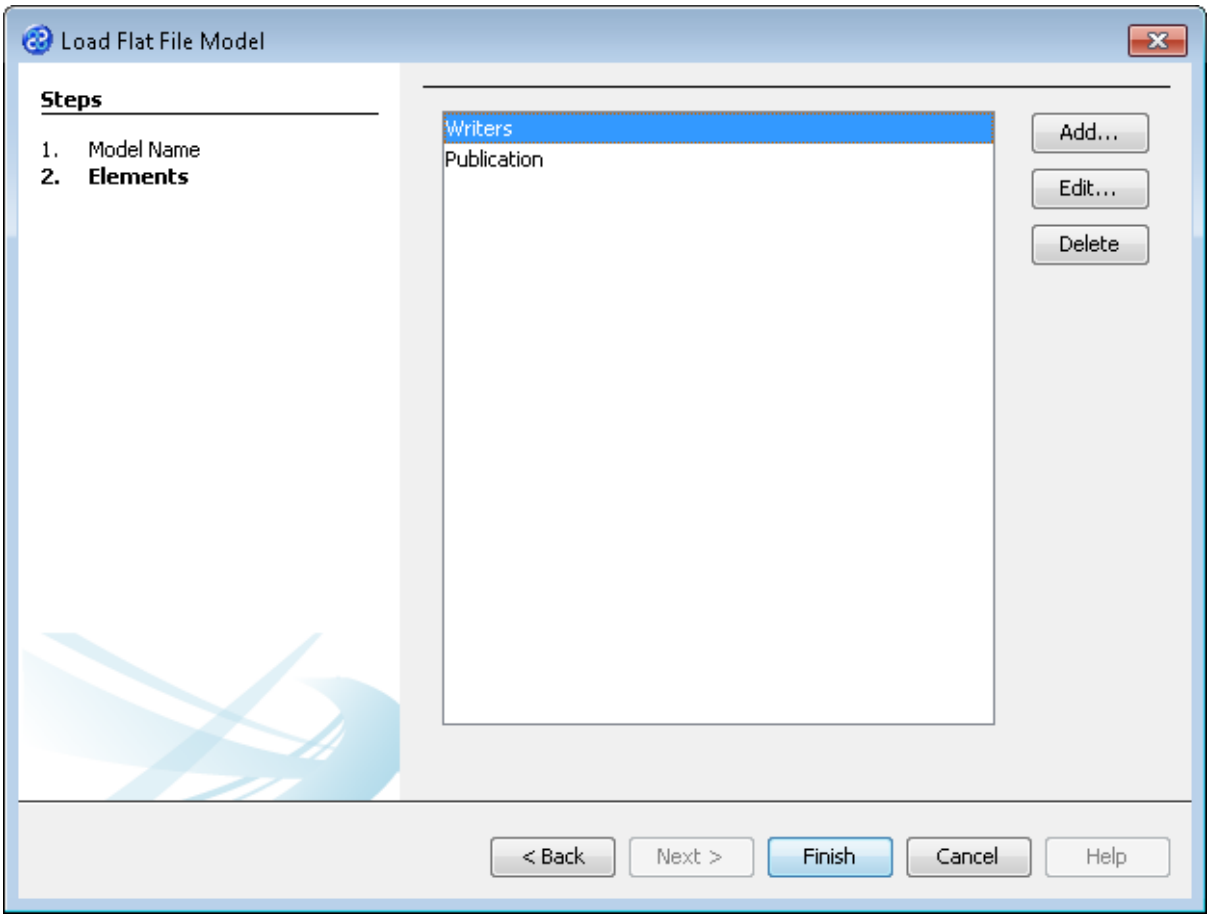
24) Click the Next > button to move to the next step, **3. Validation Rules**. There are three tick boxes on this page. For this flat file data model we will not require any of the validation rules. All tick boxes should be left blank.



25) Click the Next > button to move to the next step, **4. Element Name**. Let's type the element name Publication into the **Element Name** field.

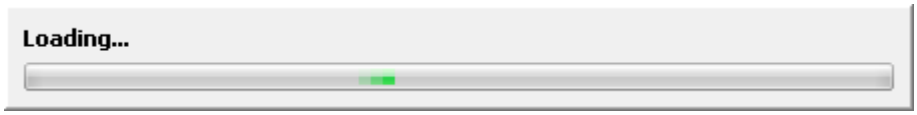


26) Click once on the Finish button to return to the **Load Flat File Model** wizard where you should have two elements defined, Writers and Publication.



27) Click the Finish button to complete the wizard and return to your previous point in TM Designer.

28) Click on the Finish button to complete the **Load Flat File Model** wizard. You will now see the **Loading...** message box. When the data model has been loaded this will disappear and you will return to the main interface.



29) Your new model will appear in the Models pane and be called **BasicWritersFlatFiles v1**. It will have two elements called **Writers** and **Publication**.

Load an Excel Data Model

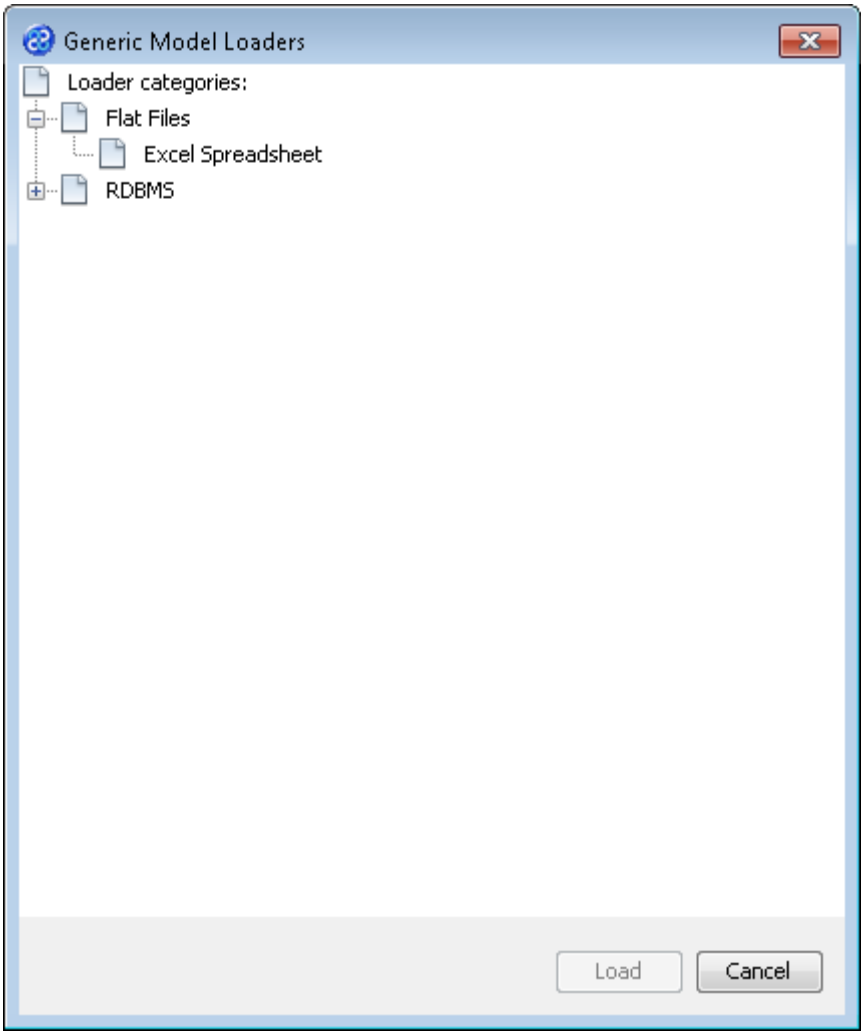
This exercise will create a data model from an Excel file. This task uses a wizard with three steps to simply take you through the process of importing your model.

1) Using your mouse click on the File option from the menu bar of TM Designer.

2) From the menu, click on the Load Model option. This will display a further list of options which represents the variety of data stores that TM Designer can import.

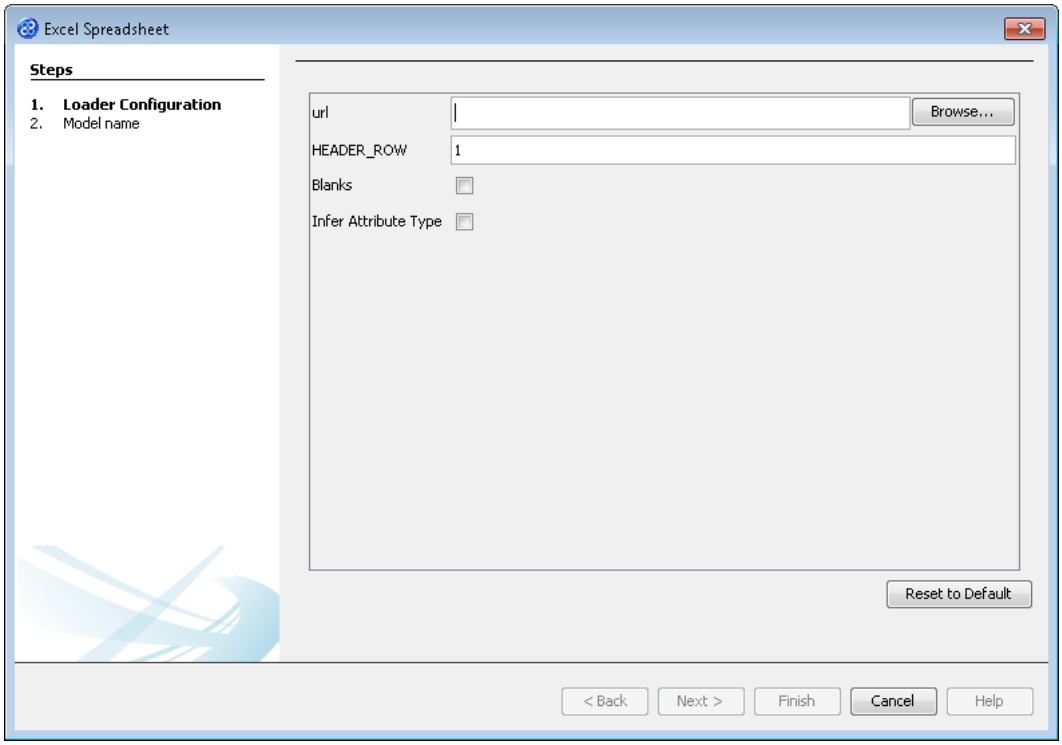
3) From the list presented click once on the Generic... option. This will open the **Generic Model Loaders** window which contains a tree view control with two branches called **Flat Files** and **RDBMS**.

4) Click on the ⊞ icon to expand the **Flat Files** branch as shown below.



5) Click once on the **Excel Spreadsheet** option shown.

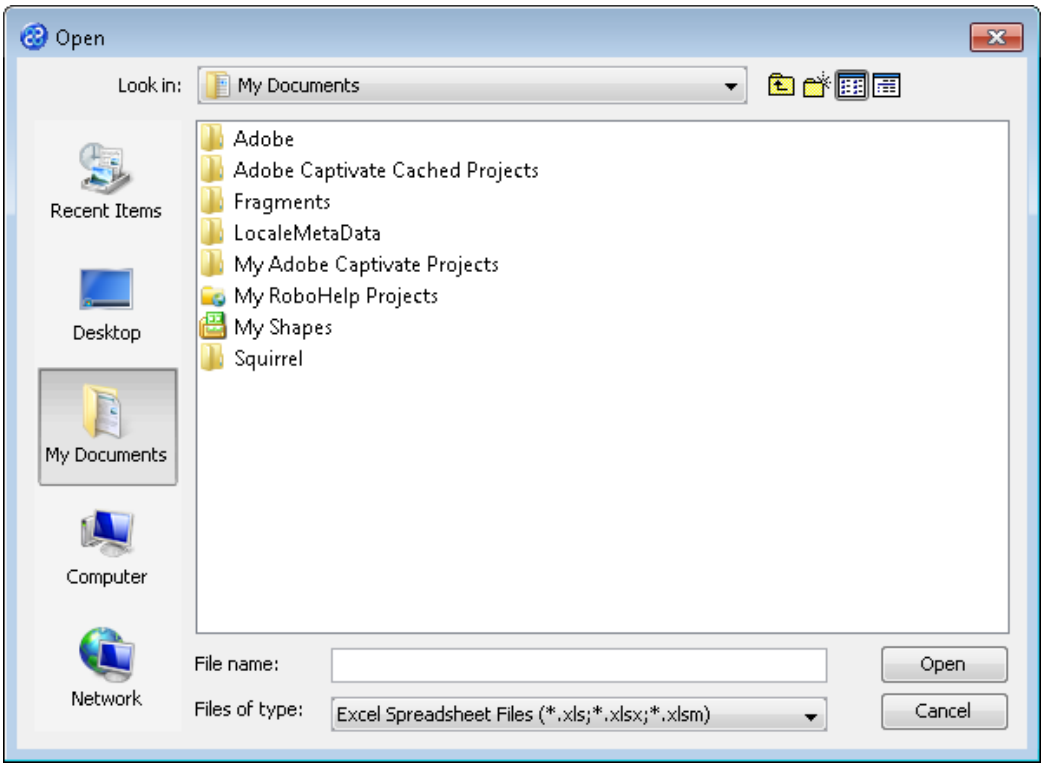
6) Click once on the Load button. This will open the **Excel Spreadsheet** window.



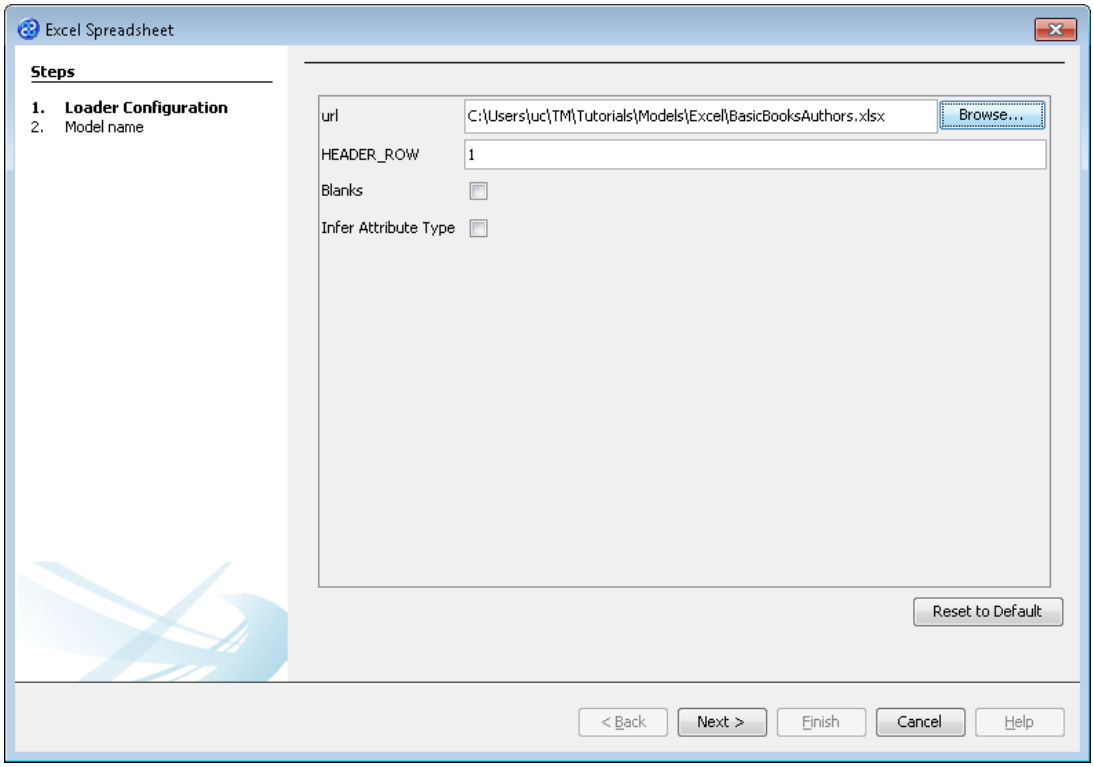
7) Click on the button to navigate to the file you will use. The file is called BasicBooksAuthors.xlsx and is located in the following directory.

   `[TMHOME]\Tutorials\Models\Excel`

8) The **Open** window will be displayed ready for you to find and select the file.



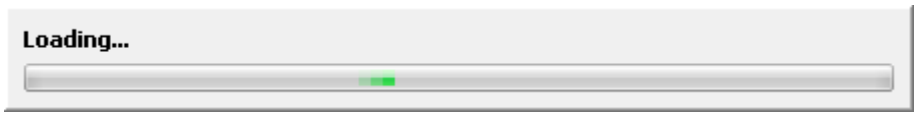
9) Find the file and click once on the  button. This will return you to step one of the wizard and the data store will be shown in the field displayed.



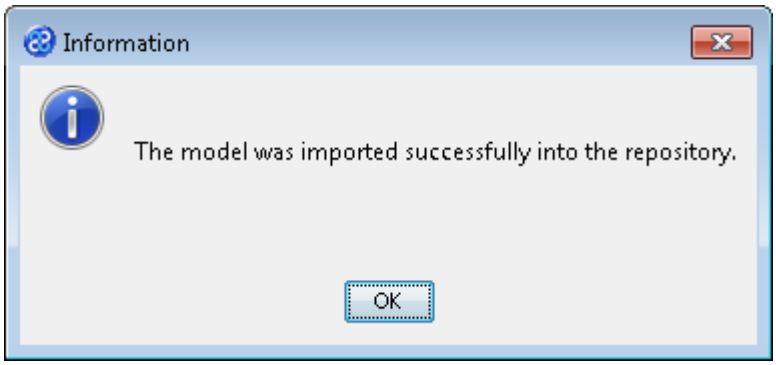
10) Click on the Next > button to move to step two, **Model name**. We can now give our model a name. In this instance we will call the model BasicBooksAuthors.

11) Click the Finish button to load your model.

12) You will now see the **Loading...** message box.



13) Once the model has been loaded you will be presented with a confirmation message.



14) Click the OK button. The Generic Model Loaders window will be displayed.

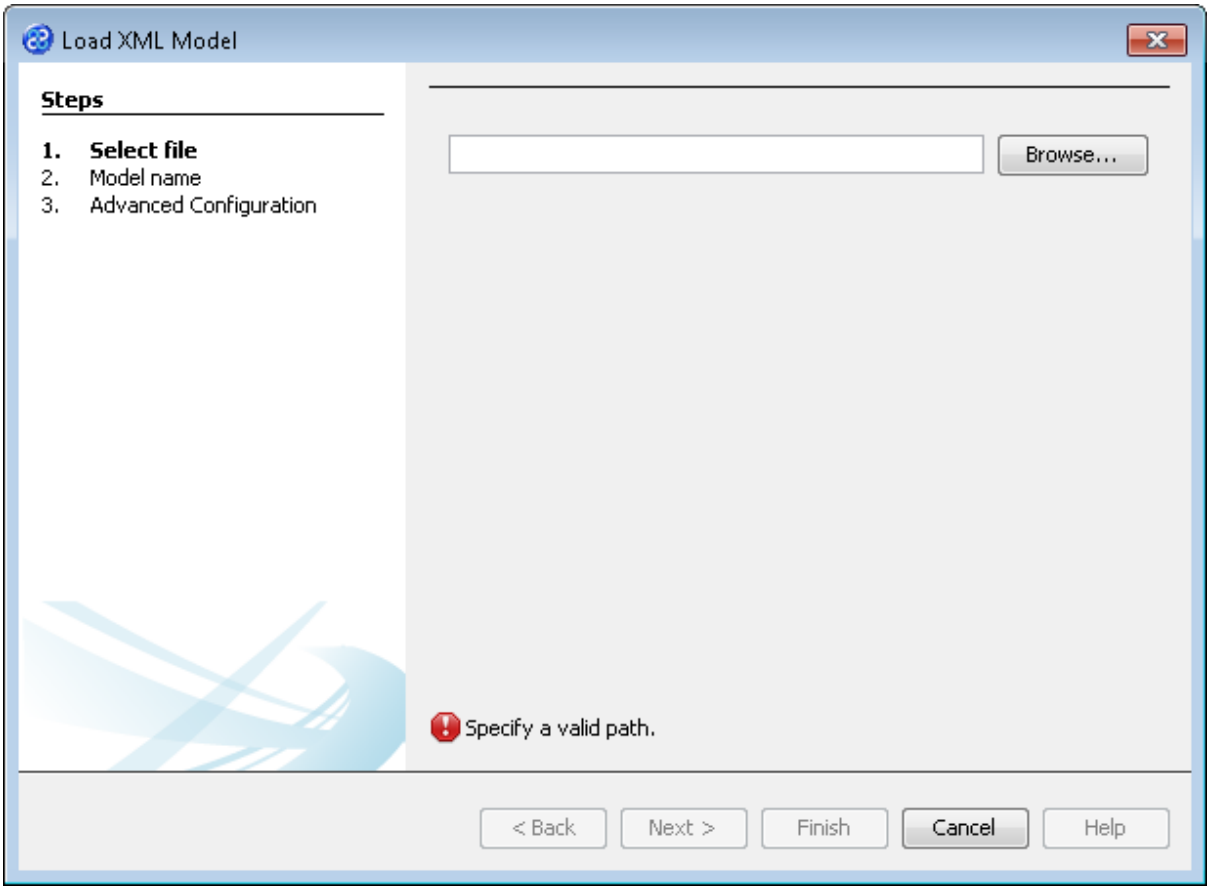
15) Click the Cancel button to close the window and return to the main interface.

16) Go to the **Models** pane to check that your model has loaded. The model will be called **BasicBooksAuthors v1**.

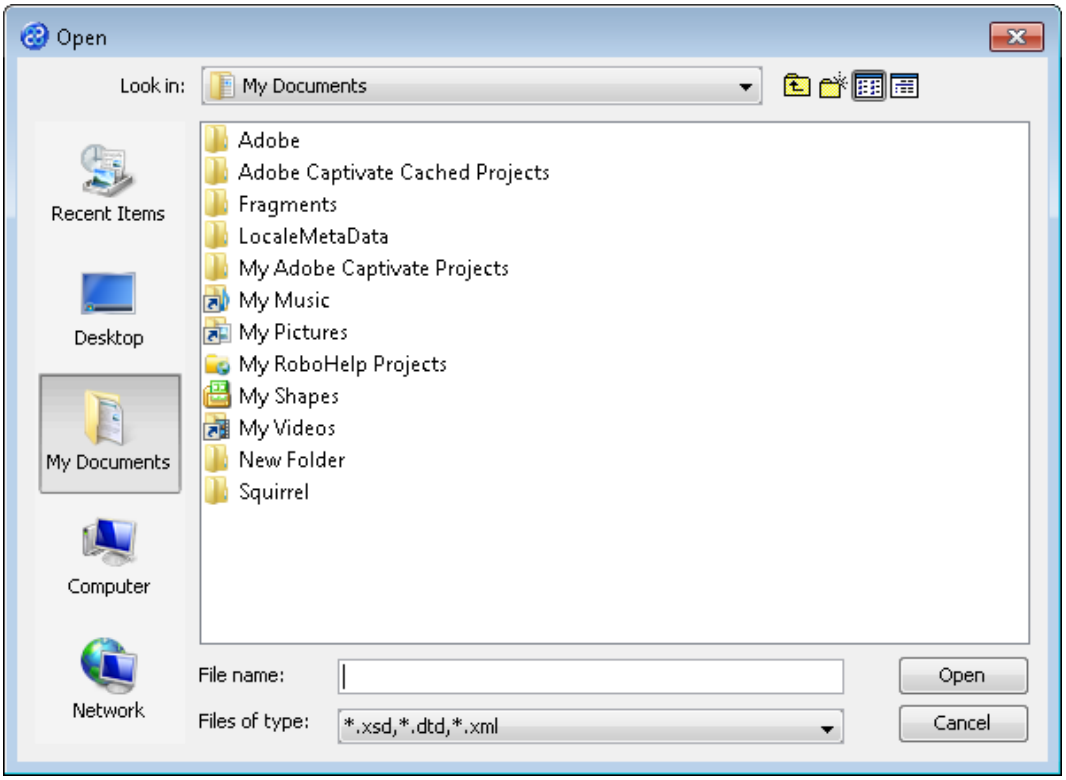
Load an XML Data Store

This will import an XML data store to create a data model. This model loader can be used to load XSD, DTD and XML files. In this tutorial we are using an XML file. This task uses a wizard with three steps to take you simply through the process of loading your 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 Load Model option. This will display a further list of options which represents the variety of data stores that TM Designer can import.
3) From the list presented click once on the XML... option. The **Load XML Model** wizard will open at step one, **Select file**, where you will select the data store whose model you wish to load.

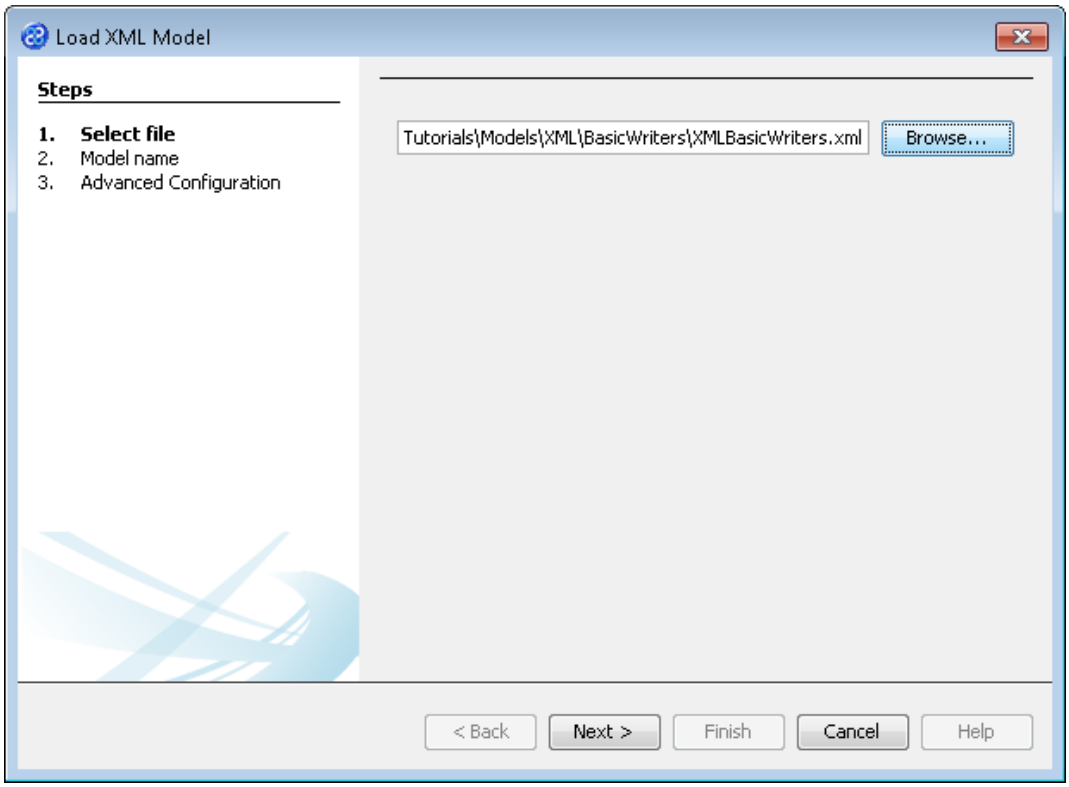


4) Click on the button to find the data store you wish to load. The **Open** window displays ready for you to find and select the data store.



5) Find the data store called XMLBasicWriters.xml and select the file in the window. Click once on the Open button. This will return you to step one of the wizard and the data store will be shown in the field displayed. The file, XMLBasicWriters.xml can be found in the following directory.

```
[TMHOME]\Tutorials\Models\XML\BasicWriters
```

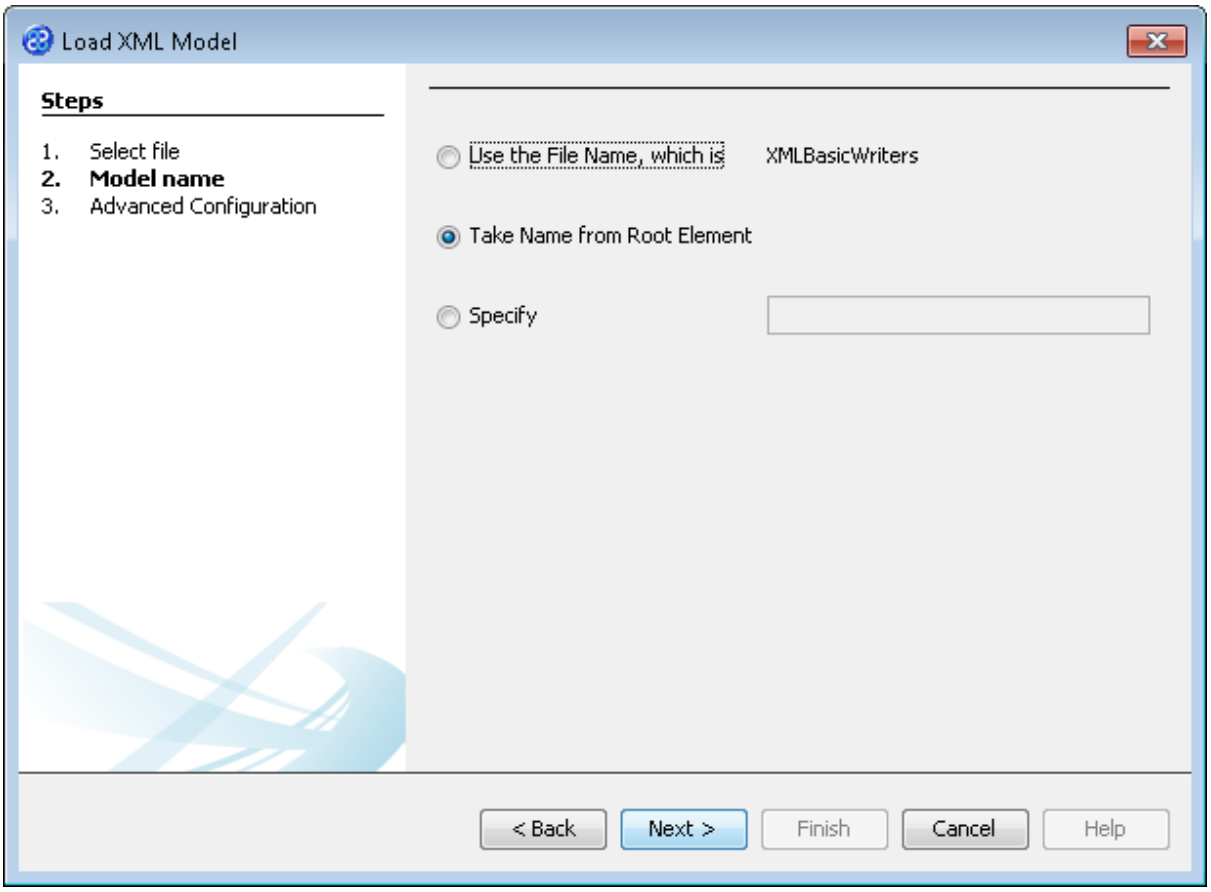


1) Click on the Next > button to move to step two, **Model name**. This provides you with three possible options for naming the model. The default is **Take Name from Root Element** and is the option we will use. This will set the model name to WRITERS. The options are explained below.

   a) **Use the File Name, which is** - this uses the filename of the XML data store as the name for the model. The name must obey model naming rules.

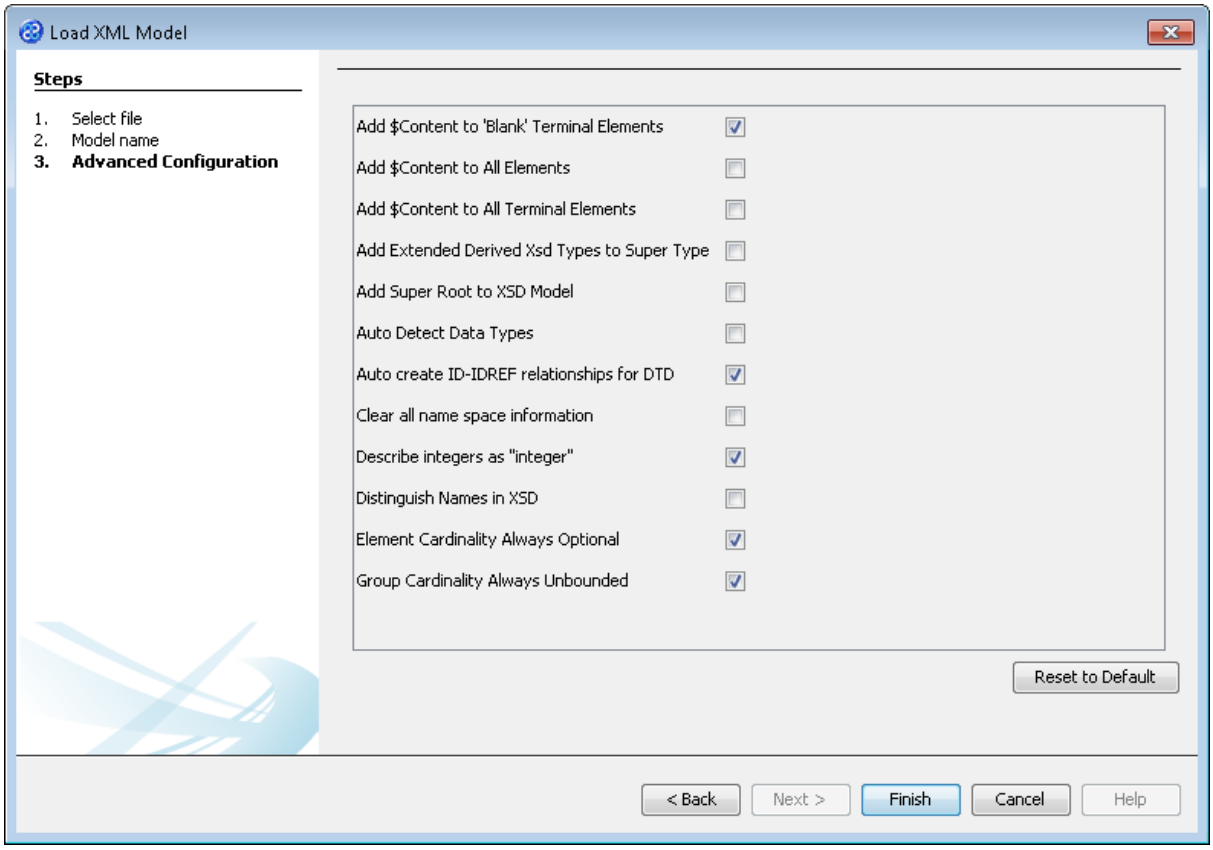
   b) **Take Name from Root Element** - this uses the name of the root element of the data store to name the model.

   c) **Specify** - this lets you provide the model with your own name by typing into the field. The name must obey model naming rules.



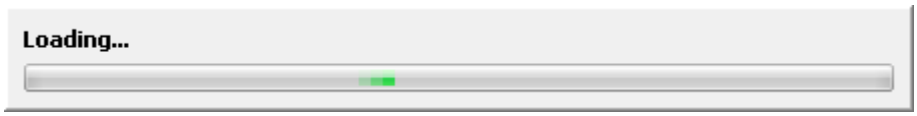
2) Click on the Next > button to go to the third and last step in the process, **Advance Configuration**.

3) We will accept the default settings for the **Advance Configuration** step as shown below.



4) Click once on the  button to load your model.

5) You will now see the **Loading...** message box. When the data model has been loaded this will disappear and you will return to the main interface.



6) Go to the **Models** pane to check that your model has loaded. As expected,using the **Take Name from Root Element** option, the model is called **WRITERS v1**.

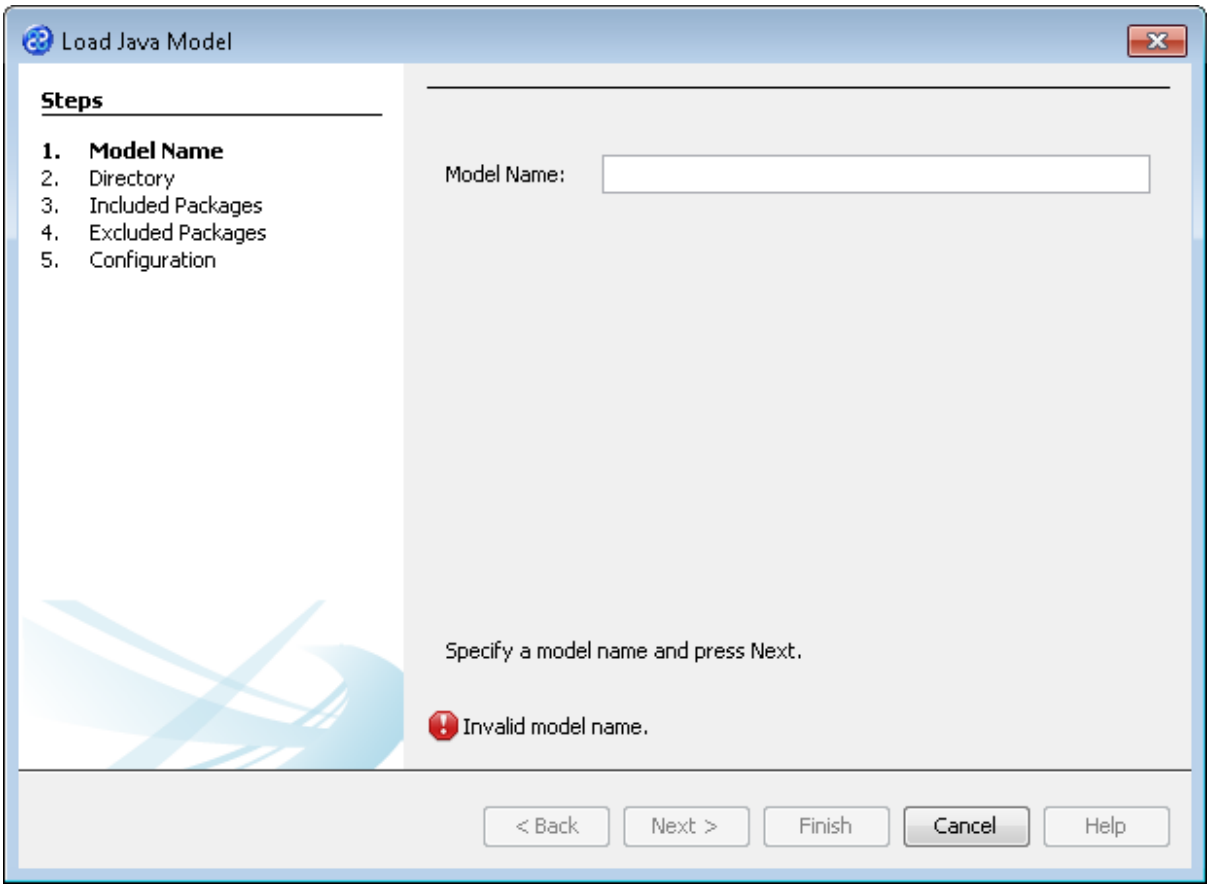
Load a Java Data Model

This exercise will create a data model from a Java object. This task uses a wizard with five steps to simply take you through the process of importing your model.

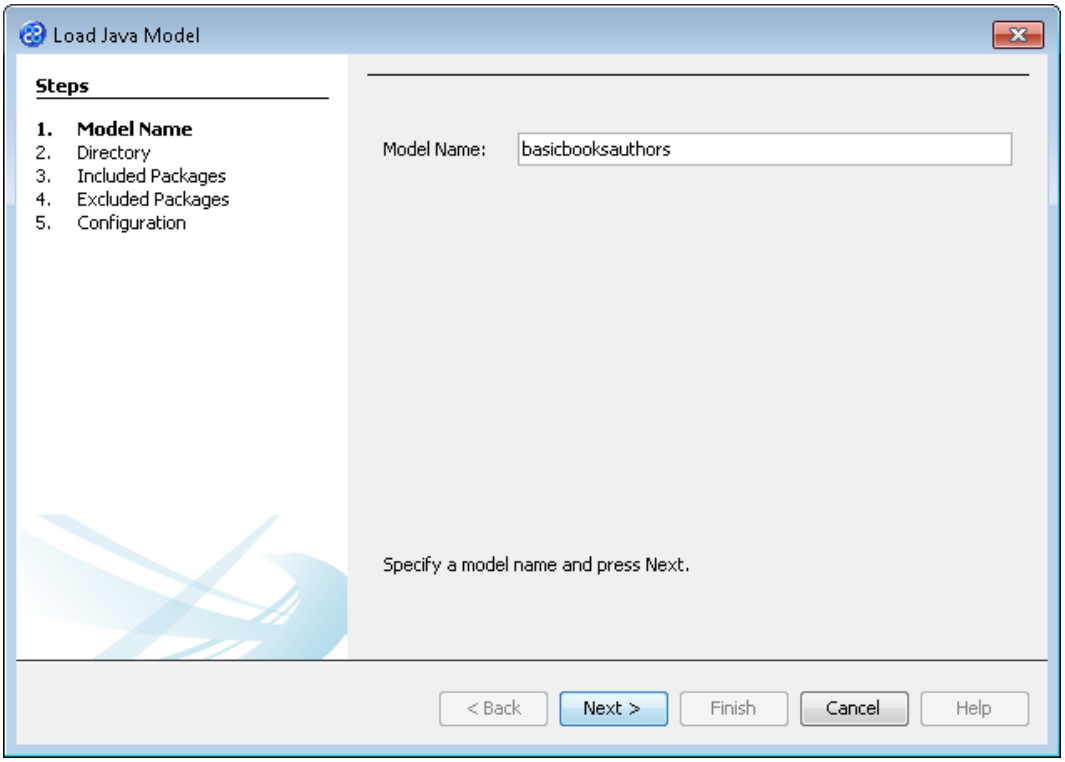
1) Using your mouse click on the File option from the menu bar of TM Designer.

2) From the menu, click once on the Load Model option. This will display a further list of options which represents the variety of data stores that TM Designer can import.

3) From the list presented click once on the Java... option. This will open the Load Java Model wizard at step 1, **Model Name**.



4) Type into the **Model Name** field basicbooksauthors using lowercase letters as shown.

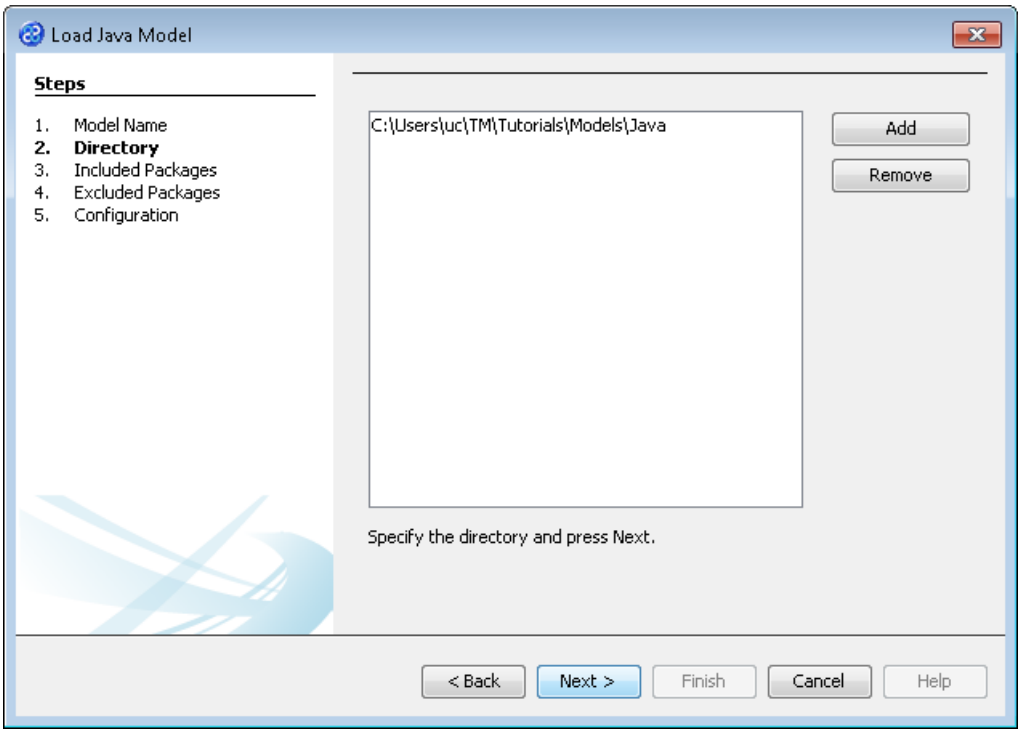


5) Click on the Next > button to move to step 2, **Directory** where we will provide the location of the Java object to load.

6) Click on the Add button to display the **Open** window and navigate to the directory where the Java object is. This will be in the following directory.

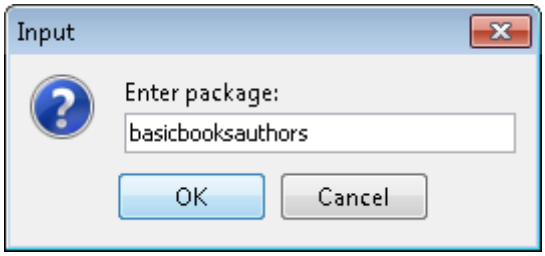
```
[TMHOME]\Tutorials\Models\Java\
```

7) Click on the Open button to select the directory for the **Load Java Model** wizard.

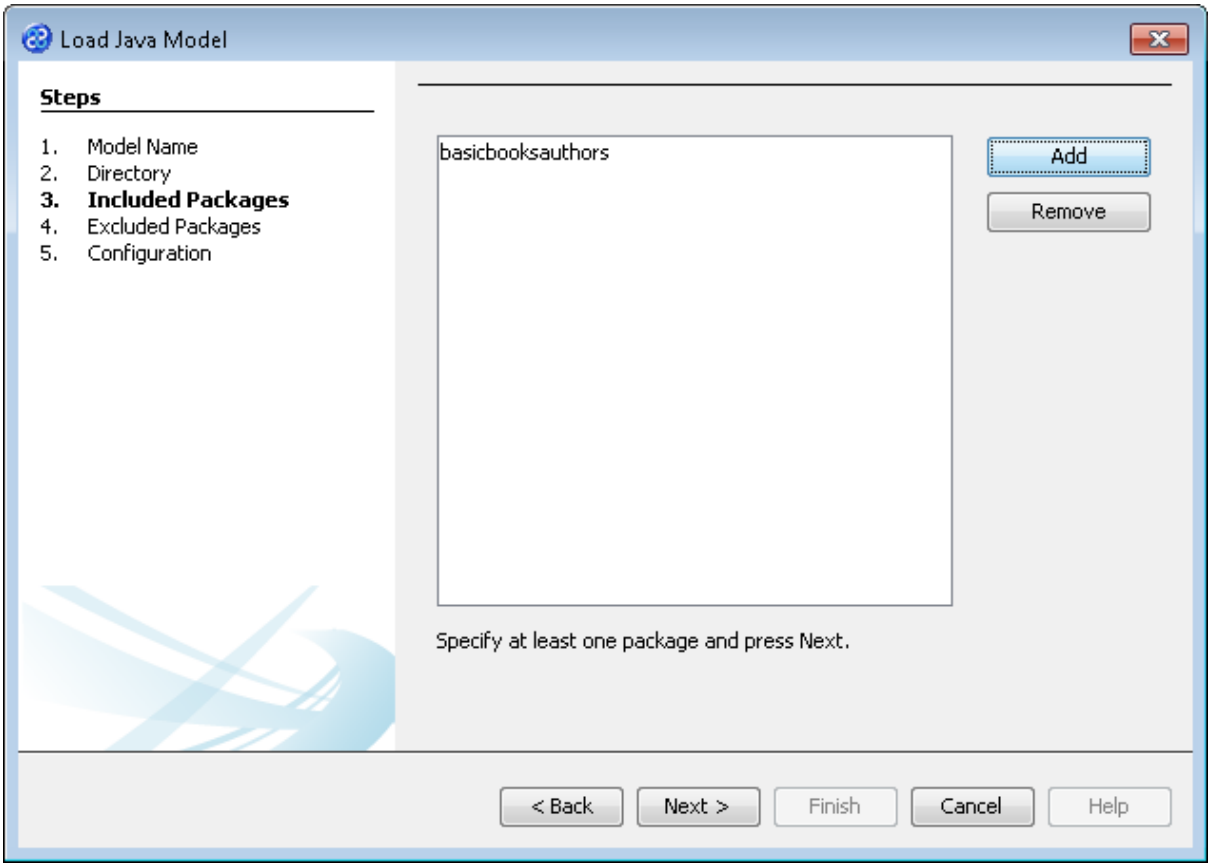


8) Click on the Next > button to move to step 3, **Included Packages**.

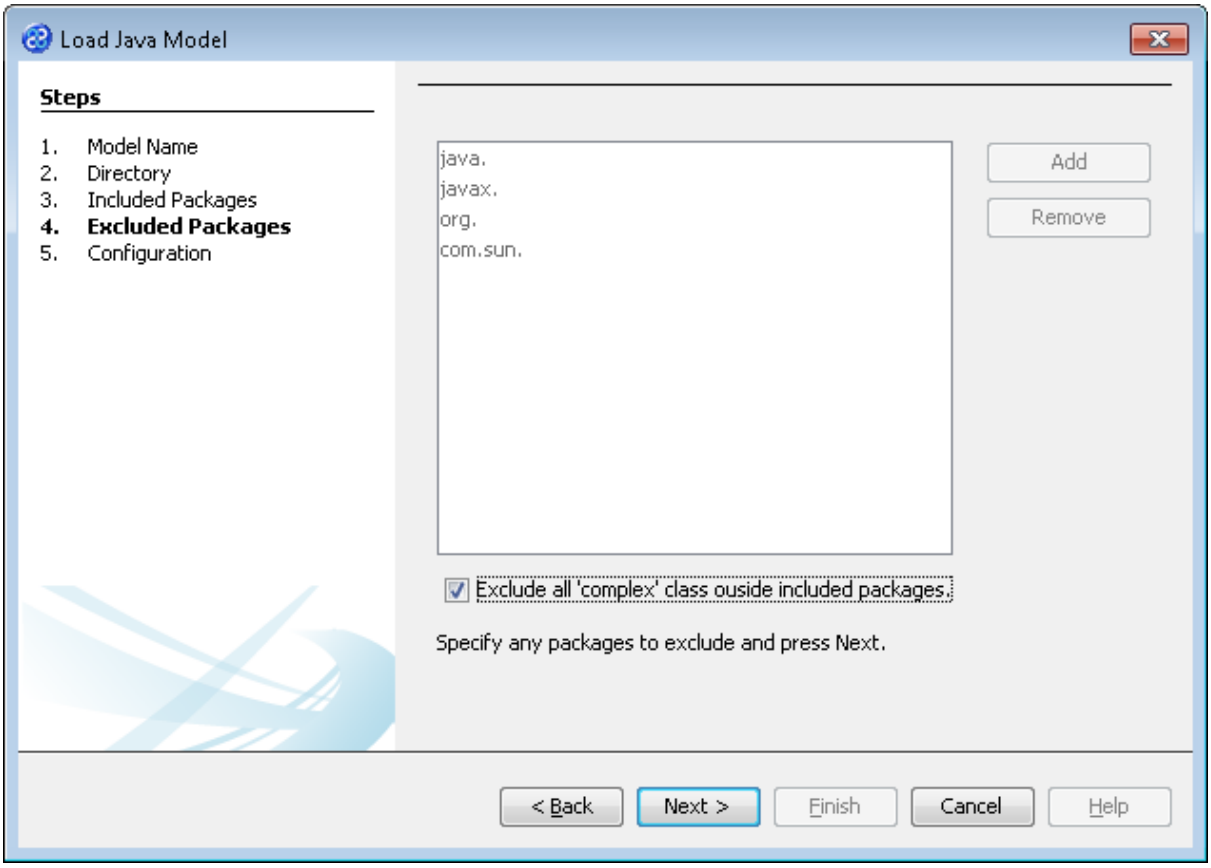
9) Click on the Add button. This will open the Input window where we will specify the Java source. In our case this will be basicbooksauthors.



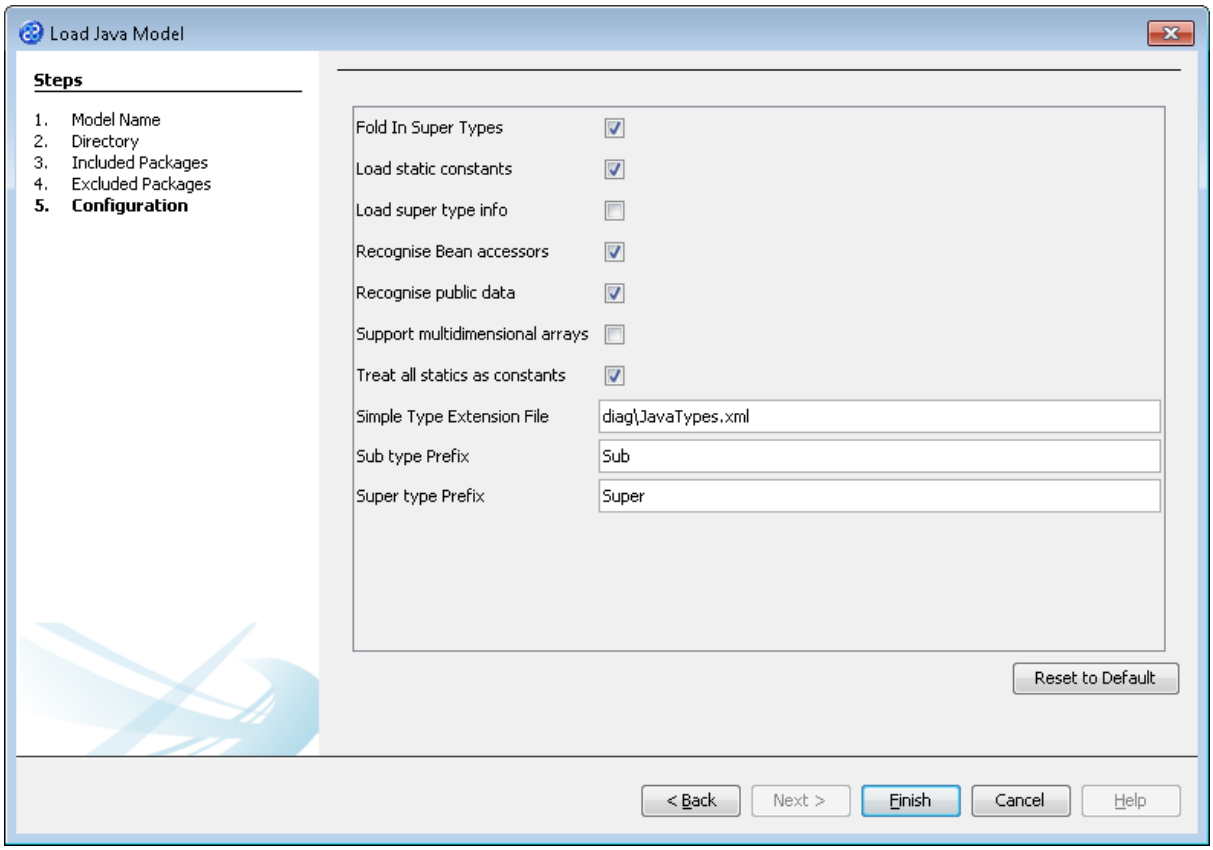
10) Click on the OK button. This sets the included package value.



11) Click on the Next > button to move to step 4, **Excluded Packages**. We will use the default setting at this point, as shown below.

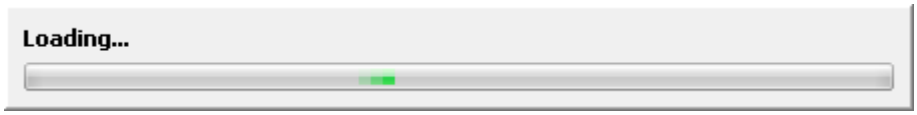


12) Click on the Next > button to move to step 5, **Configuration**. We will use the default setting at this point, as shown below.



13) Click the Finish button to load your model.

14) You will now see the **Loading...** message box.



15) Go to the **Models** pane to check that your model has loaded. The model will be called **basicbooksauthors v2**. The model has a name that already exists in our repository. Transformation Manager recognises this fact and makes our new model version 2 even though the sources are completely different for each model.