Business Objects XI Designer

Lab Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
11-Aug-2009		Mahesh Dubey	Content Creation
19-Aug-2009		CLS team	Review

Table of Contents

Getting Started

Overview

This lab book is a guided tour for learning Business Objects XI Designer. It comprises solved examples and 'To Do' assignments. Follow the steps provided in the solved examples and work out the given 'To Do' assignments.

Setup Checklist for Business Objects XI Designer

Here is what is expected on your machine in order for the lab to work.

Minimum System Requirements

- Intel Pentium 90 or higher (P166 recommended)
- Microsoft Windows 95, 98, or NT 4.0, 2k, XP.
- Memory: 32MB of RAM (64MB or more recommended)
- Internet Explorer 6.0 or higher

Please ensure that the following is done:

- Business Objects XI Designer installed on local machine
- Designer level access to your login in the model repository

Instructions

- Create a directory by your name in drive <drive>. In this directory, create a subdirectory Designer_assgn. For each lab exercise create a directory as lab <lab number>.

Problem Statement/ Case Study

Note: The labs in this lab book are based on the eFashion Data Mart.

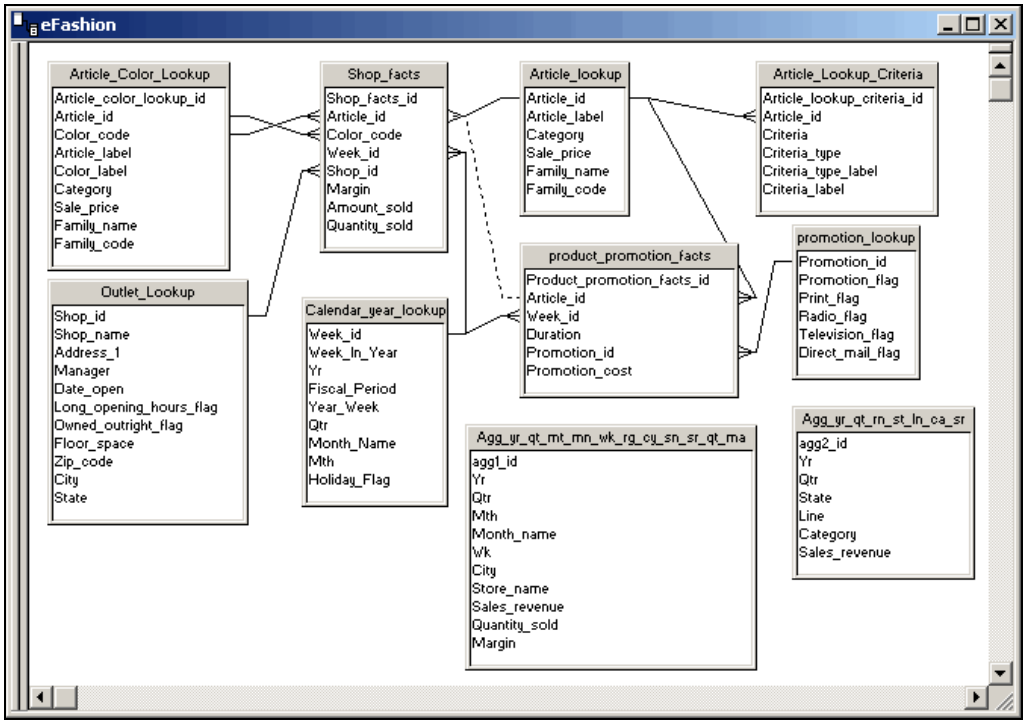

Figure 1: eFashion Database Structure

Lab 1. Universe Creation

Goals	• Create a new universe • Select the required tables
Time	10 – 15 Minutes

1.1: To Create a New Universe

Solution:

Step 1: Start Designer. Select **Start → Programs → BusinessObjects XI Release 2 → BusinessObjects Enterprise → Designer**.

Step 2: Provide the login credential (Collect the login details from Trainer) as shown in the figure given below:

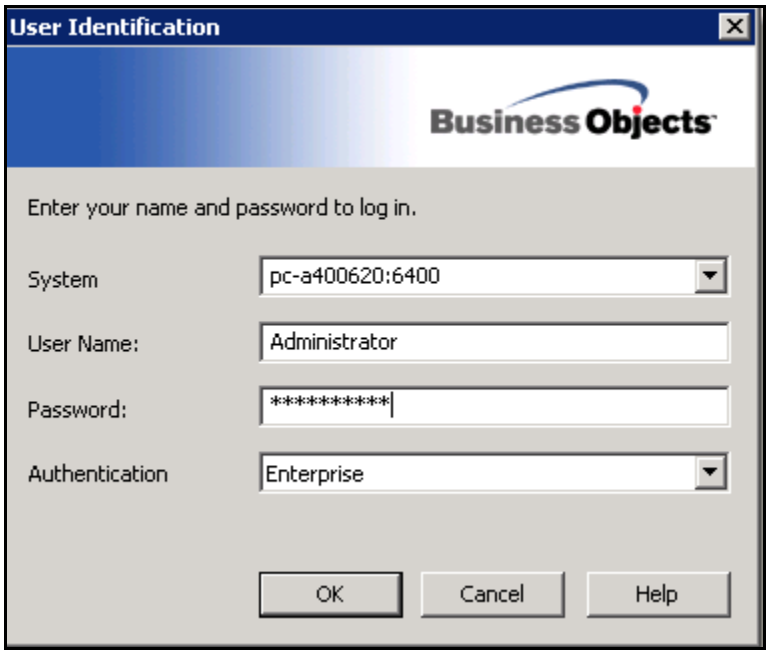

Figure 2: User Identification

Step 3: Select **File → New menu**. The system starts the new Universe creation wizard (**Quick Design Wizard**).

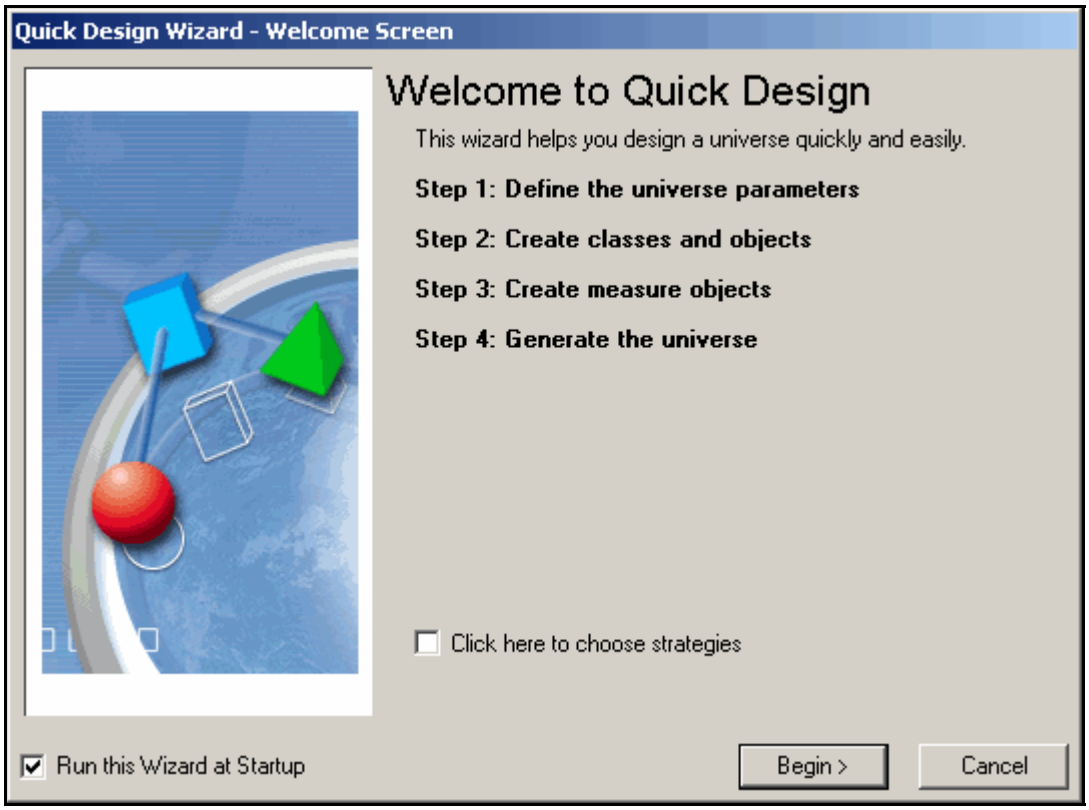

Figure 3: Quick Design Wizard - Welcome Screen

Step 4: Key in the Universe name as TRG_<id>_LAB.

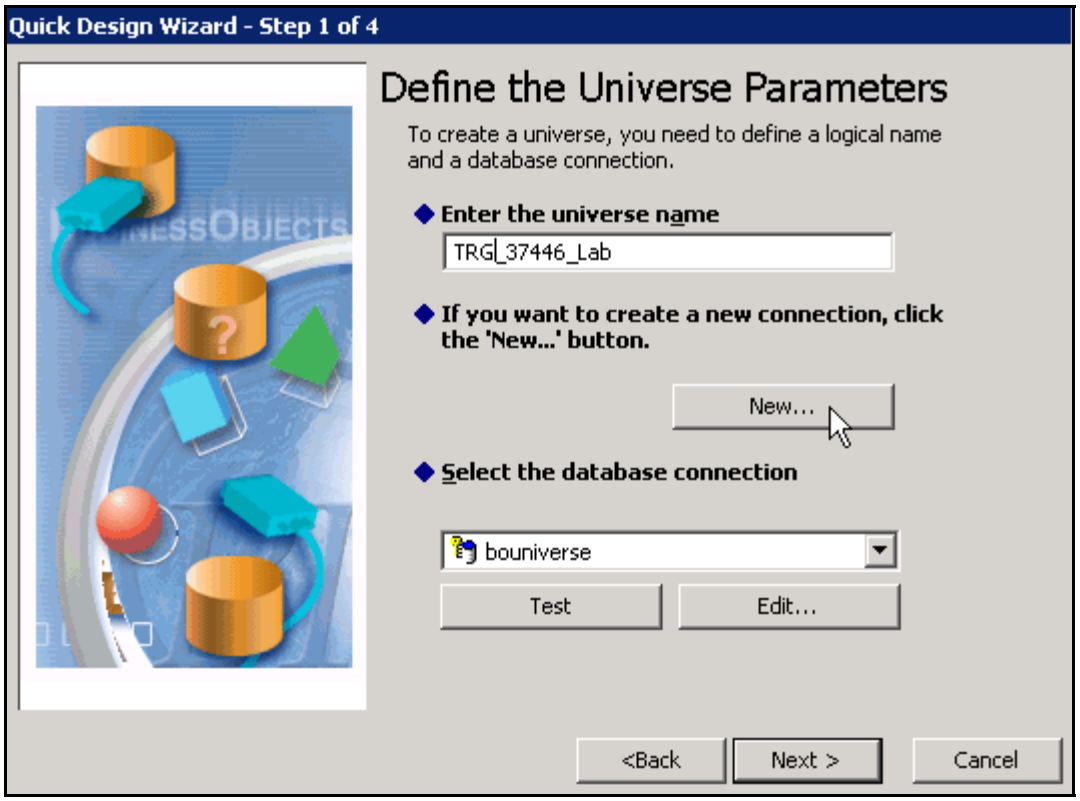

Figure 4: Quick Design Wizard

Step 5: Create a new Database Connection for the eFashion database, which is in Access.

a. Click the **New** button, and select **ODBC Drivers** from the network layer list.

b. Key in the **Connection name** as TRG_<id>_Con.

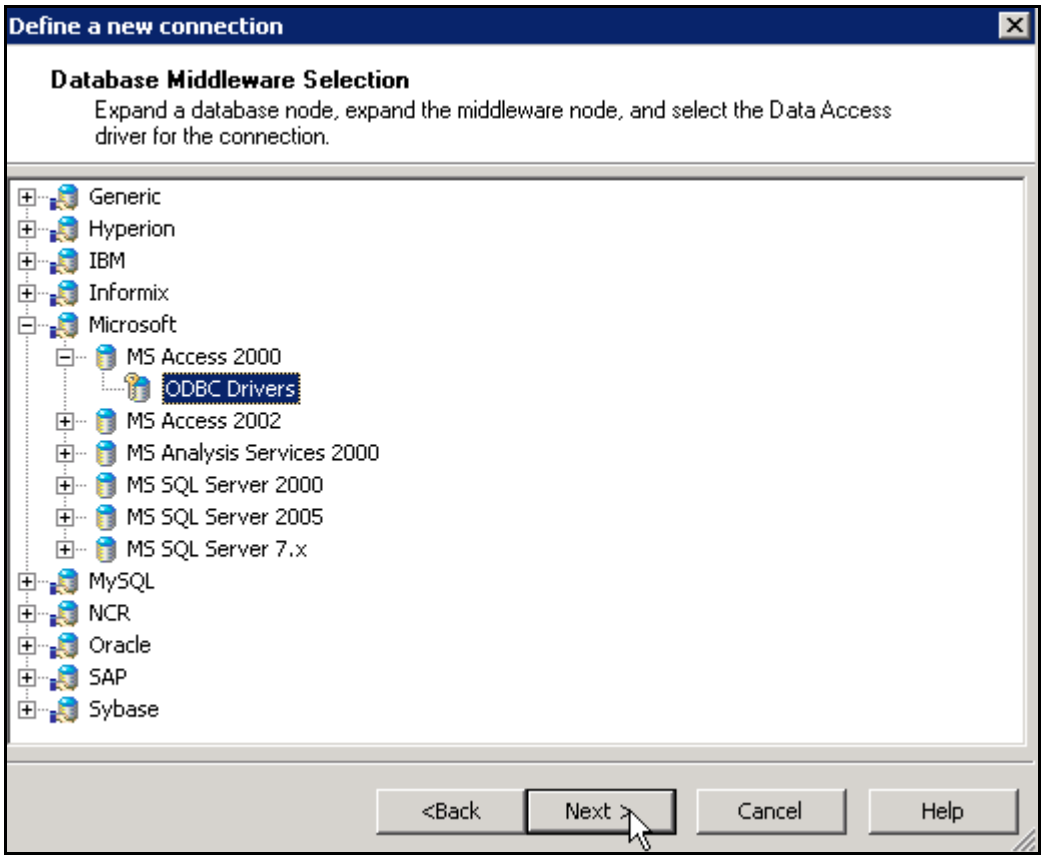

Figure 5: Define a new connection

Step 6: Click **Next** to provide connection details.

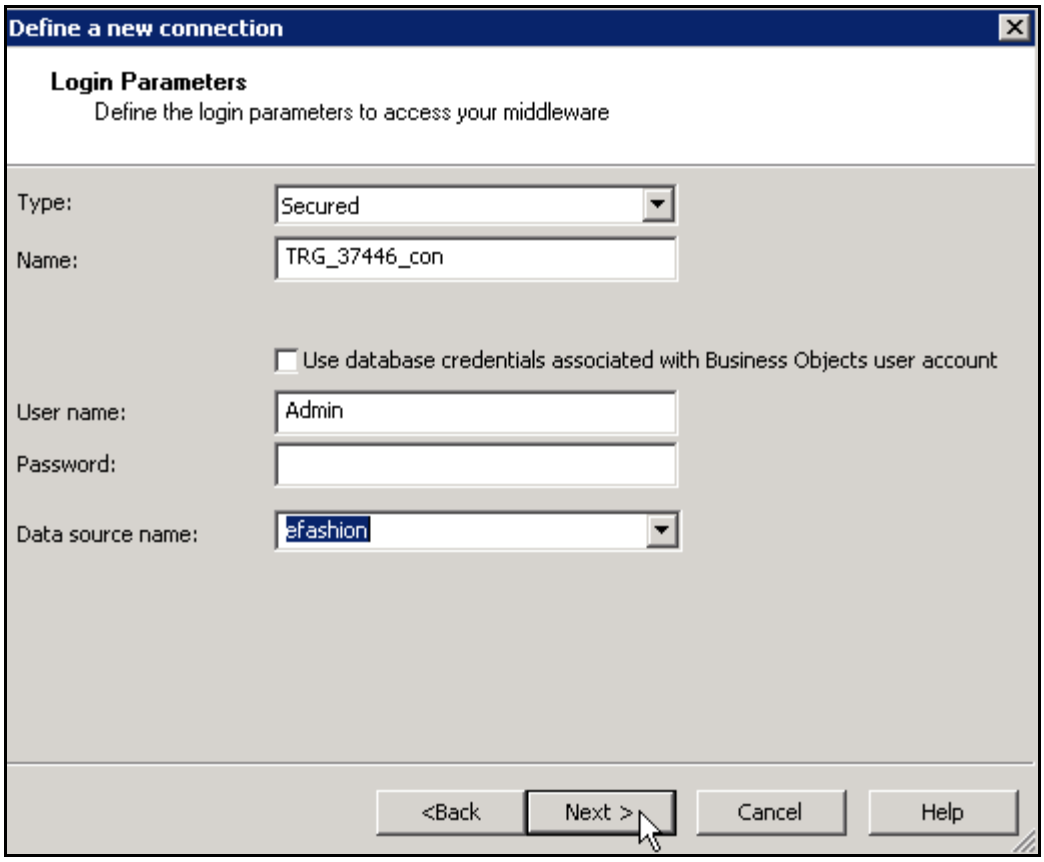

Figure 6: Define a new connection

Step 7: Click **Next** to test the connection.

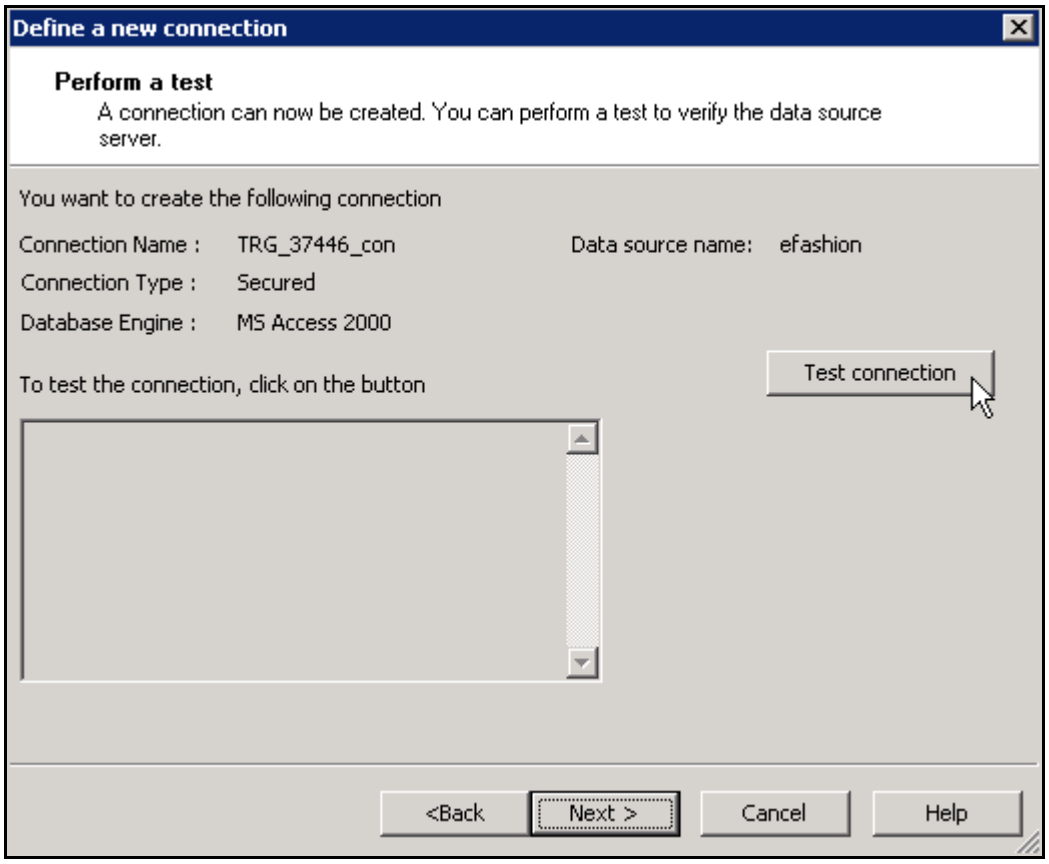

Figure 7: Define a new connection

Step 8: Click **Test Connection** to test the connection.

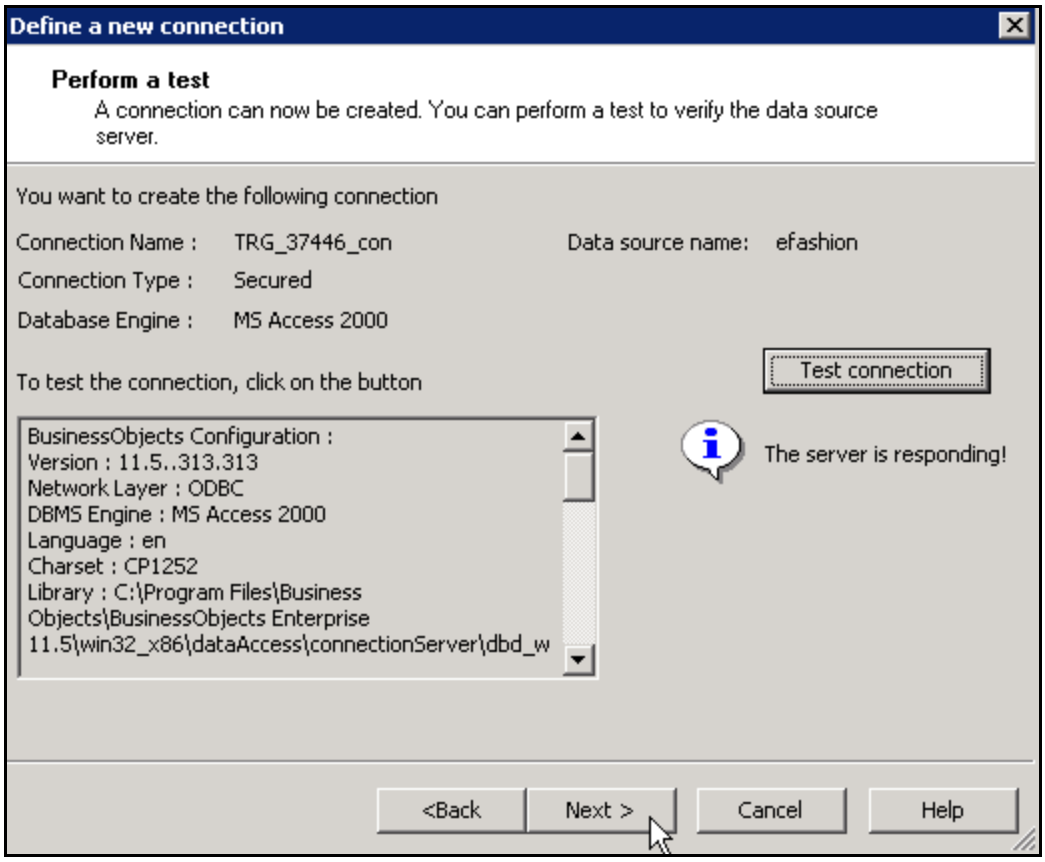

Figure 8: Define a new connection

Step 9: Click **Next** twice to finish the connection creation.

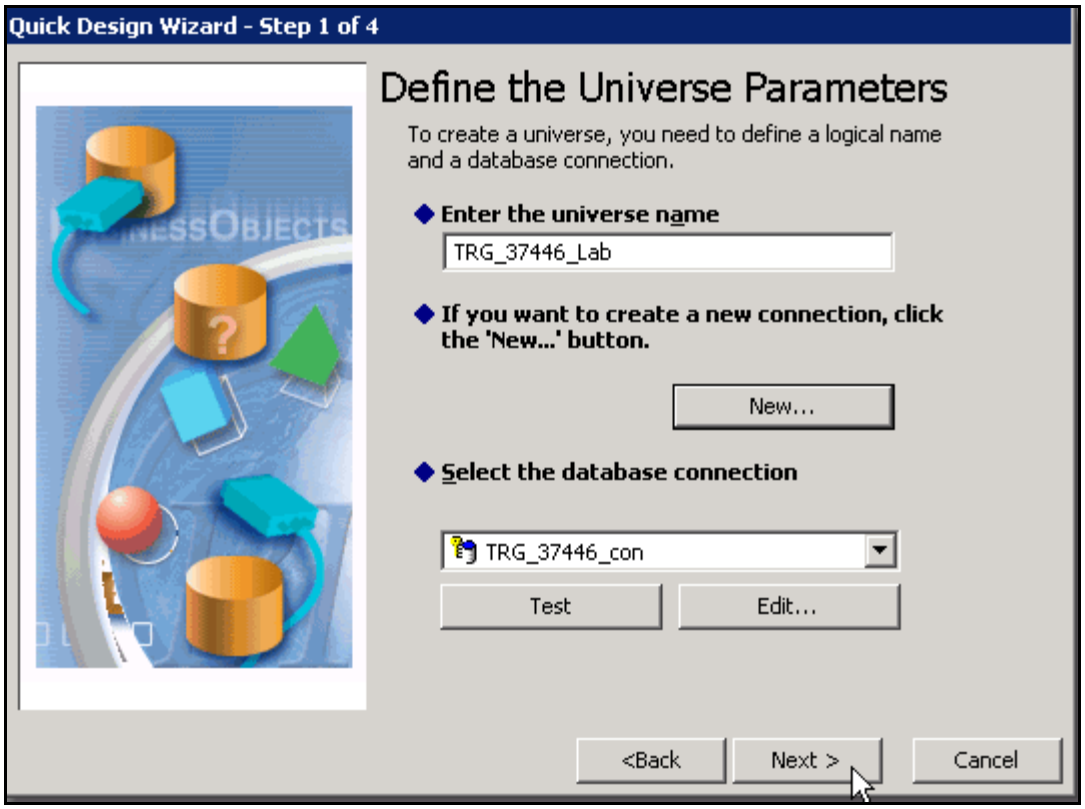

Figure 9: Quick Design Wizard

Step 10: Click **Next** to go to next step.

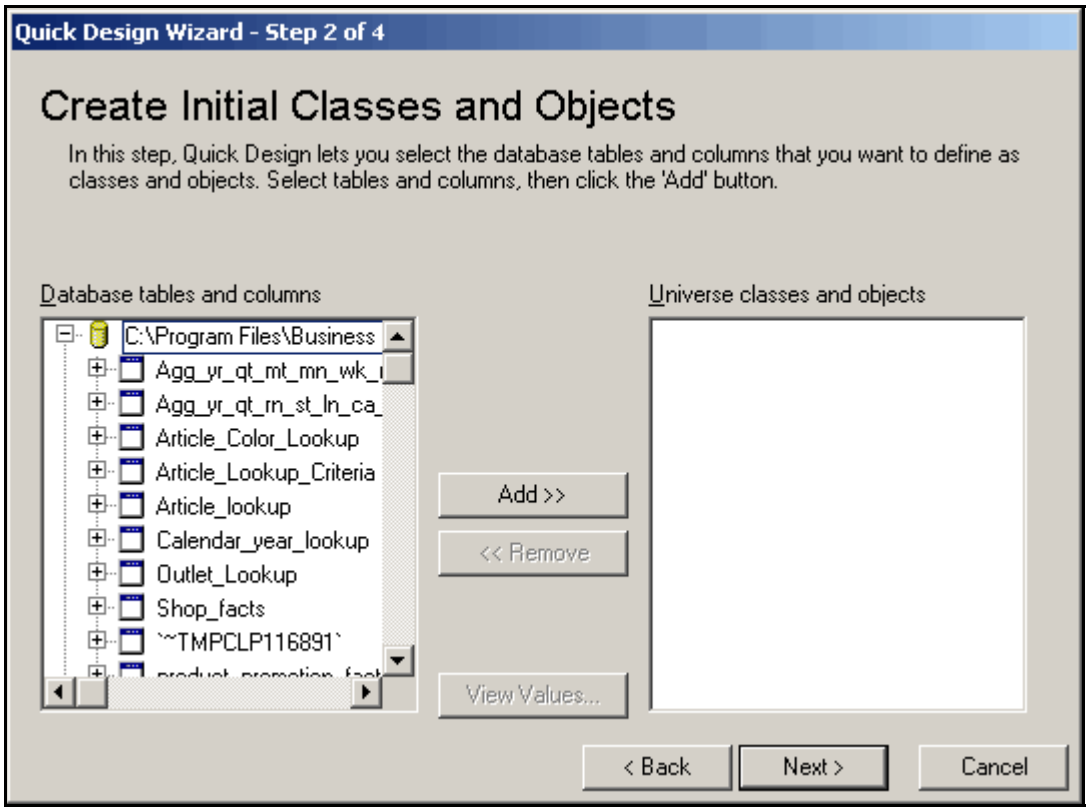

Figure 10: Quick Design Wizard

Step 11: Skip this step and click **Next** for Step 3.

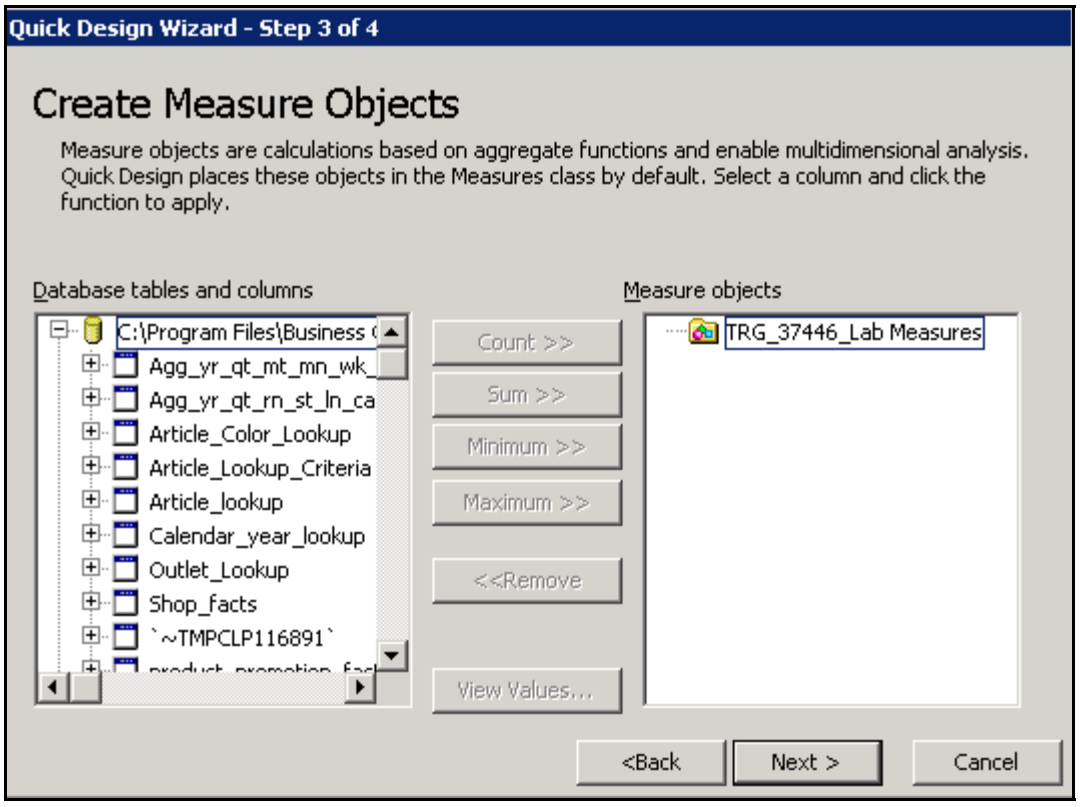

Figure 11: Quick Design Wizard

Step 12: Click **Finish**.

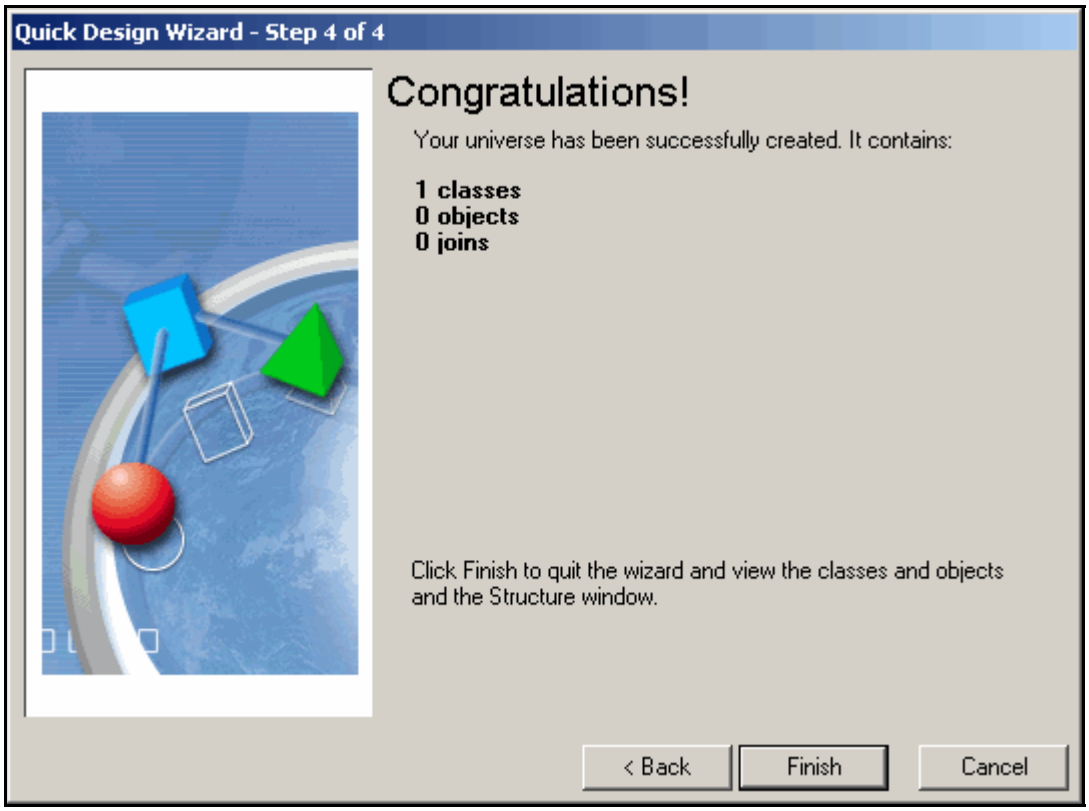

Figure 12: Quick Design Wizard

Step 13: Rename the default class TRG_<id>_LAB Measures as 'Measures'.

Step 14: Select **Insert → Tables**. This opens a table browser. Double click the respective tables to insert the following tables in the **Structure** pane.

- Agg_Yr_Qt_Mt_Mn_Wk_Rg_Cy_Sn_Sr_Qt_Ma
- Agg_Yr_Qt_Rn_St_Ln_Ca_Sr
- Article_Color_Lookup
- Article_Lookup
- Article_Lookup_Criteria
- Calendar_ Year_Lookup

- Outlet_Lookup
- Shop_Facts
- Product_Promotion_Facts
- Promotion_Lookup

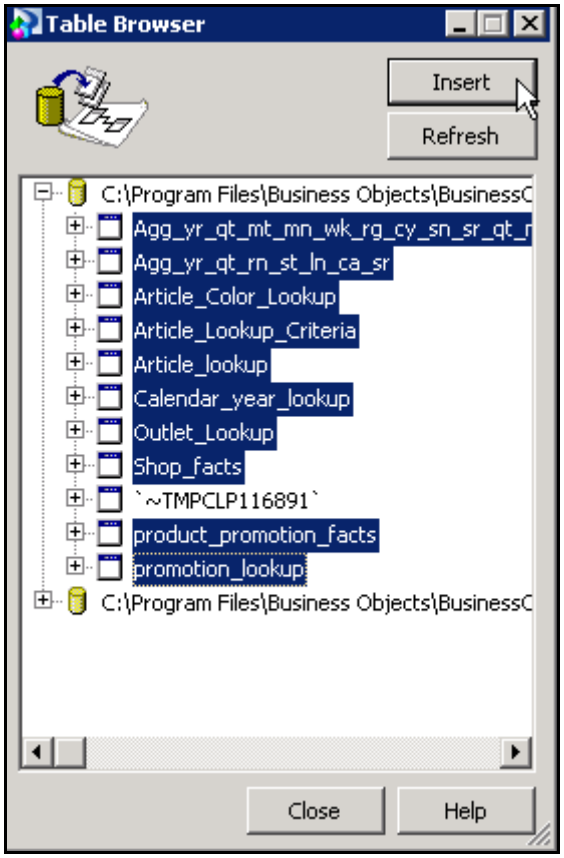

Figure 13: Table Browser

Step 15: Save the universe as TRG_<id>_Lab.unv file.

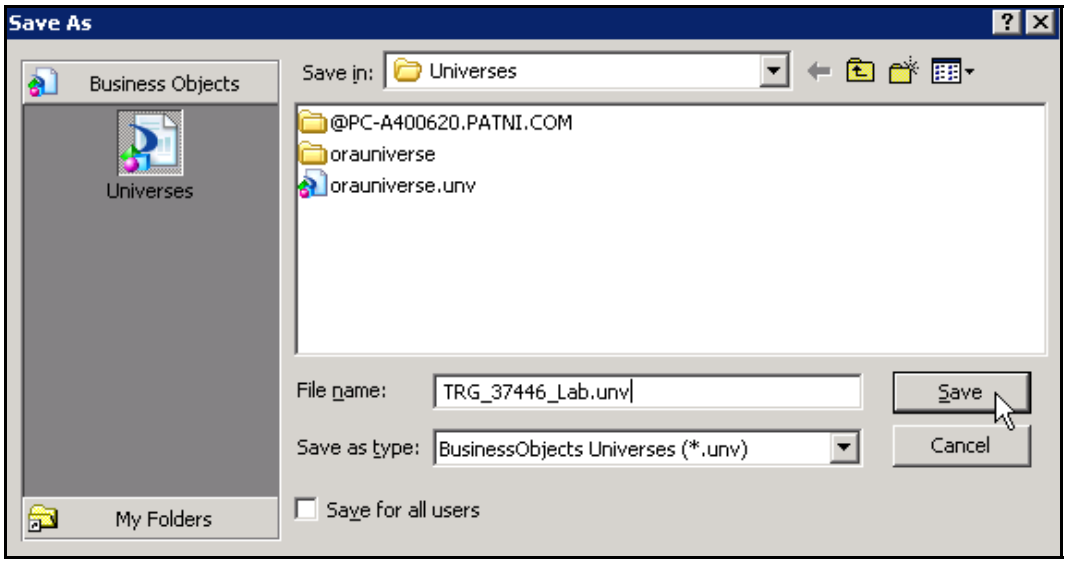

Figure 14: Save As

Lab 2. Detect Joins and Cardinality

Goals	• Define joins between two tables. • Define cardinality applicable to the join. • (Ensure that all previous labs are complete before beginning the current lab.)
Time	25 – 30 minutes

2.1: Define Simple Joins

Solution:

Step 1: Select the menu option **Insert** → **Joins** and define join between **Calendar_year_lookup.Week_id** and **Shop_facts.Week_id**. Detect the cardinality.

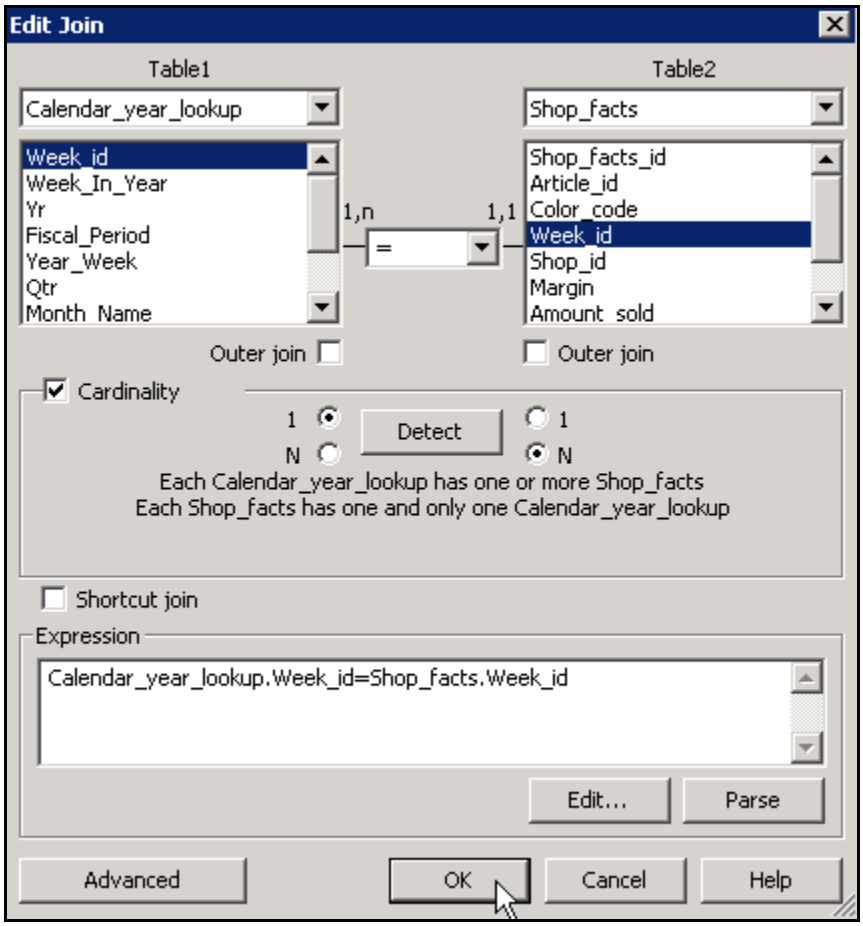

Figure 15: Edit Join

Note: If Designer cannot detect the cardinalities and prompts the **Unknown Cardinality error**, then manually define the cardinality.

Step 2: Define join between **Article_Lookup.Article_id** and **Shop_facts.Article_id** tables and detect the cardinalities. **<< To Do >>**

Step 3: Select the menu option **Tools → Detect Joins**. It will show a list of probable joins. From the list select the join between **Article_Lookup_Criteria** and **Article_Lookup** tables. Right click and select **Detect Cardinalities**.

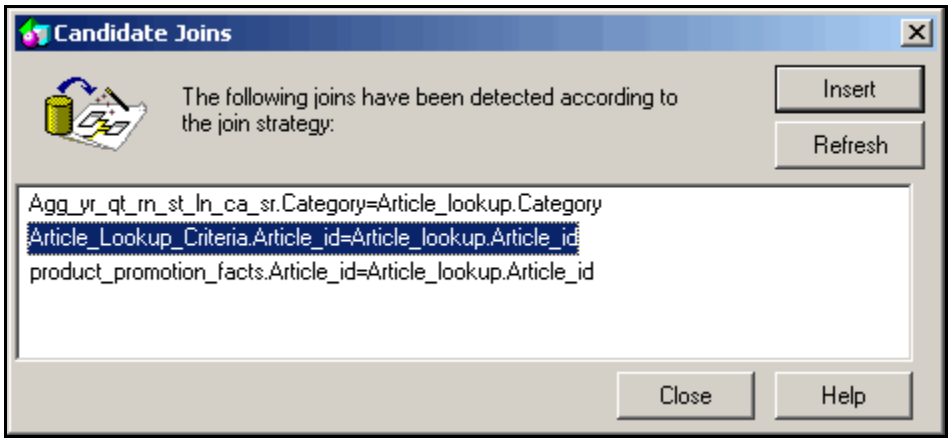

Figure 16: Candidate Joins

Step 4: Create the following Joins and detect cardinality.

Table 1	Table 2	Join column
Outlet_Lookup	Shop_facts	Shop_id
Promotion_Lookup	Product_promotion_facts	Promotion_id
Product_promotion_facts	Calendar_year_lookup	Week_id
Article_lookup	Product_promotion_facts	Article_id
Product_romotion_facts	Shop_facts	Article_id
Product_promotion_facts	Shop_facts	Article_id (Shortcut Join)

Step 5: Define a complex join between **Article_Color_Lookup** and **Shop_facts** tables by selecting the two tables, and select **Insert → Joins menu**.

Step 6: Press the CTRL key and select the **Article_id** and **Color_code** from both the tables.

Step 7: Set the cardinality as **One to Many** as shown in the figure given below.

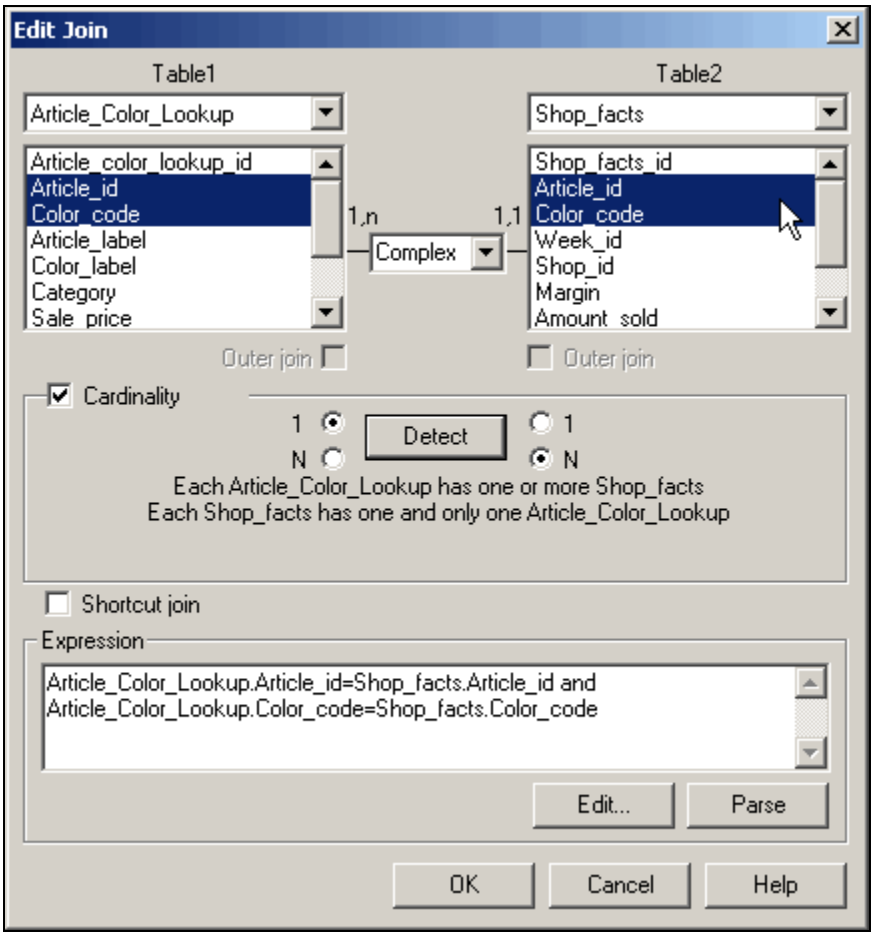

Figure 17: Edit Join

Step 8: Use the **Parse** button to check the validity of the join.

Step 9: Click **OK**.

Lab 3. Define Classes and Objects

Goals	• Define classes or subclasses
	• Create Various types of objects
	  o Dimension objects
	  o Measure objects
	• (Ensure that all previous lab assignments are complete before beginning the current lab.)

Time	60 - 80 Minutes

3.1: Create new classes in the universe.

Solution:

Step 1: Create a class with the name "***Time period***". Use **Insert → Class**.

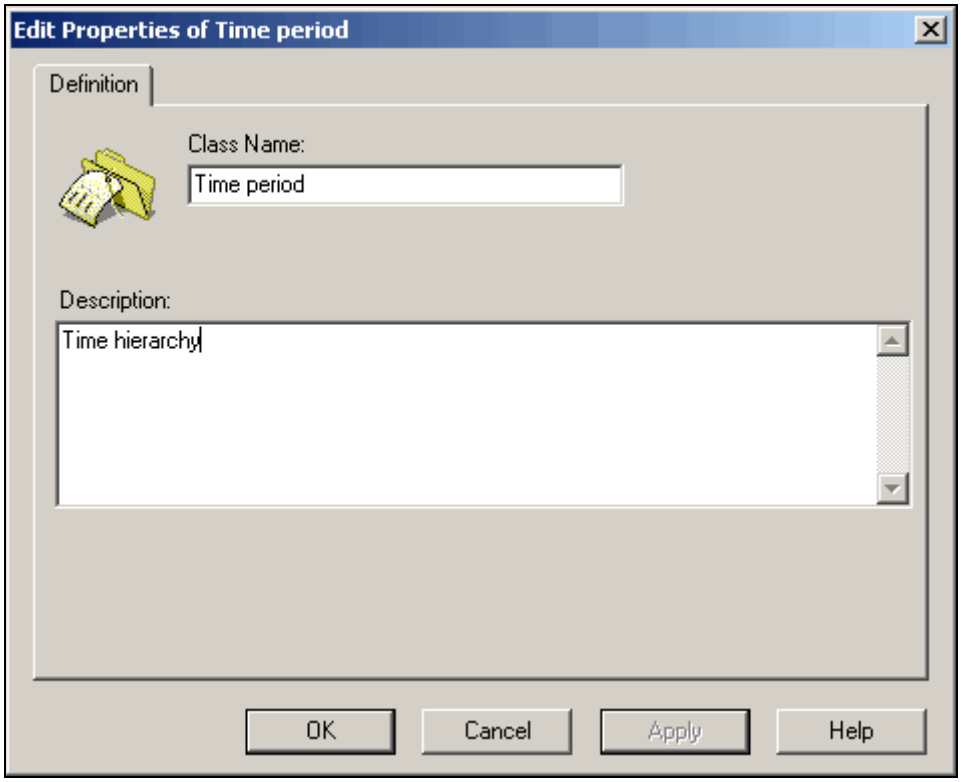

Figure 18: Edit Properties of Time Period

Step 2: Create the following classes with their subclasses, with description as per the specifications. Place the **Measures** class at the end.

Note: To insert a subclass use the menu option **Insert → Subclass**.

Class Name	Description
Store	Geography and store hierarchy.
Store/Store name	Name of store.
Store/Store details	Store details referring to Store name.
Product	Product Hierarchy
Promotion	Promotions by SKU number over time.

3.2: Create dimension objects.

Solution:

Step 1: Create dimension objects with the following specification.

Object Name	Path (Class)	Object Type	Object Desc	eFashion Data Table	eFashion Table Column
Year	Time period	Dimension	Year 2001 - 2003.	• Agg_yr_qt_rn_st_ln_ca_sr • Agg_yr_qt_mt_mn_wk_rg_cy_sn_sr_qt_ma. • Calendar_year_lookup	@Aggregate_Aware(Agg_yr_qt_rn_st_ln_ca_sr.Yr, Agg_yr_qt_mt_mn_wk_rg_cy_sn_sr_qt_ma.Yr, Calendar_year_lookup.Yr)
Fiscal Period	Time period	Detail	Year FY01 - FY03	Calendar_year_lookup	Calendar_year_lookup.Fiscal_period

Standard Format Explained

Title	Description
Object Name	Name of the object by which it is referred in the universe
Path	Specifies the name of the class in which the object is to be created
Object Type	Type can be • Dimension • Measure • Detail

	• Condition
Object Description	Text describing the object in detail
eFashion Data Table	The table name in EFASHION database
eFashion Data Column	This field contains the name of the database column from which the data needs to be retrieved. But the data may not be retrieved as it is, it should be manipulated depending on the output requirement

Hint: Henceforth all the specifications will be given to you in this format in a separate spreadsheet. Refer to Appendix – B for the individual report specifications. The same is also available in a soft-copy format in the worksheet Lab 2-2(a) of Lab Report Description.xls file in the folder Reference Material\Lab Files\Developer\Lab 2-2\Prerequisites on your individual CD.

Step 2: Select the **Time period** class, and use **Insert → Object** menu. Type the name and the description as given.

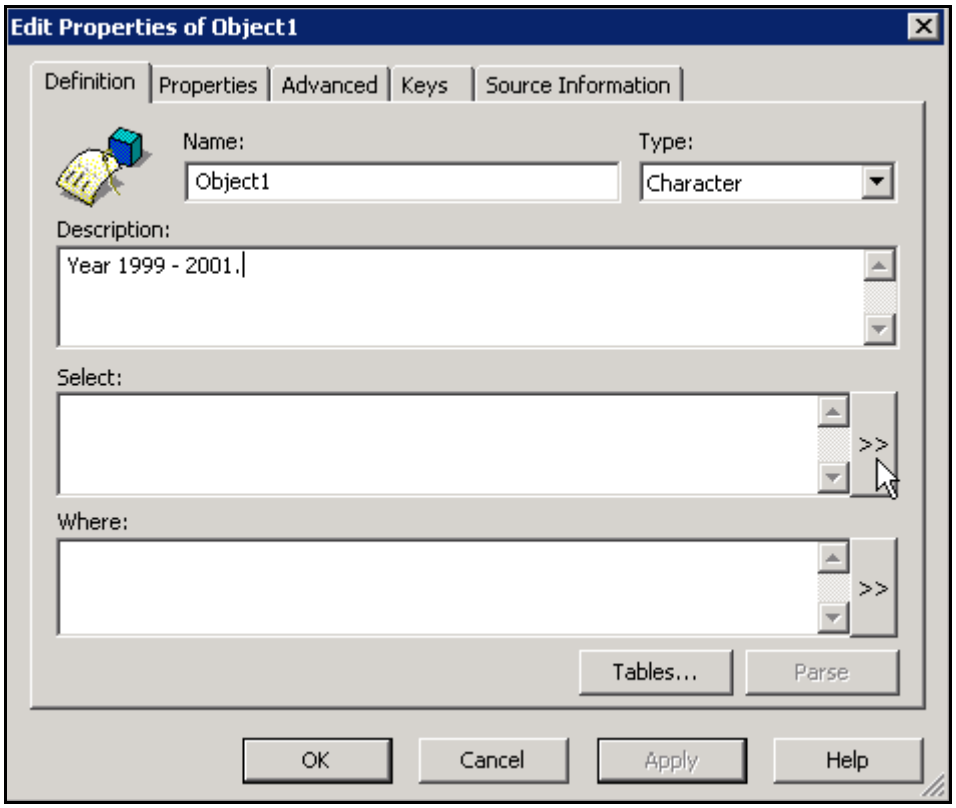

Figure 19: Edit Properties of Object1

Step 3: Click **>>** button on the right of the select text box.

Step 4: Expand the **Agg_yr_qt_rn_st_ln_ca_sr** table from **Tables and Columns** List and double-click **Yr** column.

Similarly select the **Yr** column from **Agg_yr_qt_mt_mn_wk_rg_cy_sn_sr_qt_ma** and **Calendar_year_lookup** tables.

This puts the definition in the textbox as shown in the figure given below.

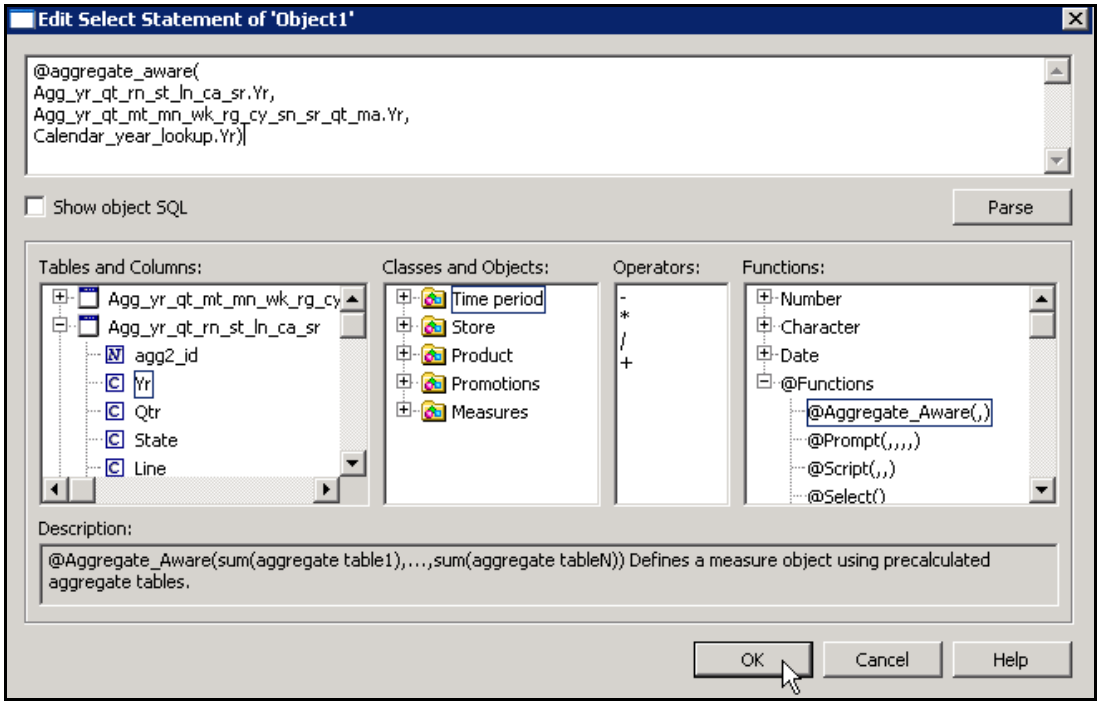

Figure 20: Edit Select Statement of 'Objects'

Step 5: Click the **Parse** button to check correctness of the SQL. Click **OK**.

Step 6: Similarly create **Fiscal Period Detail** object in the **Time period** class as per the specification. **<< To Do >>**

Step 7: Create the objects as specified in worksheet Lab 2.2(b) of **Lab Report Description** file. **<< To Do >>**

3.3: Create Measure objects.

Solution:

Step 1: Create **Measure** objects as specified in worksheet Lab 2.2(c) of **Lab Report Description** file.

Step 2: Select **Measures** class. Use **Insert** → **Object** menu.

Step 3: Type in the **Name** and **Description** as per the specification.

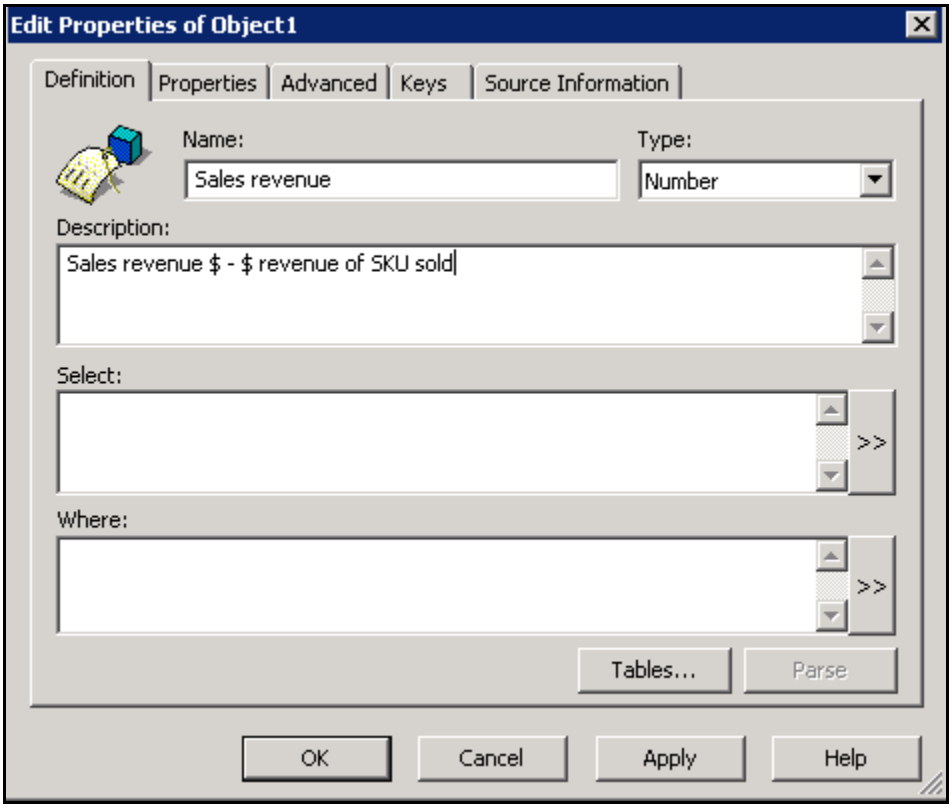

Figure 21: Edit Properties of Object1

Step 4: Select **Properties** tab, and select **Qualification** as ***Measure*** and the **aggregate function** as ***Sum***.

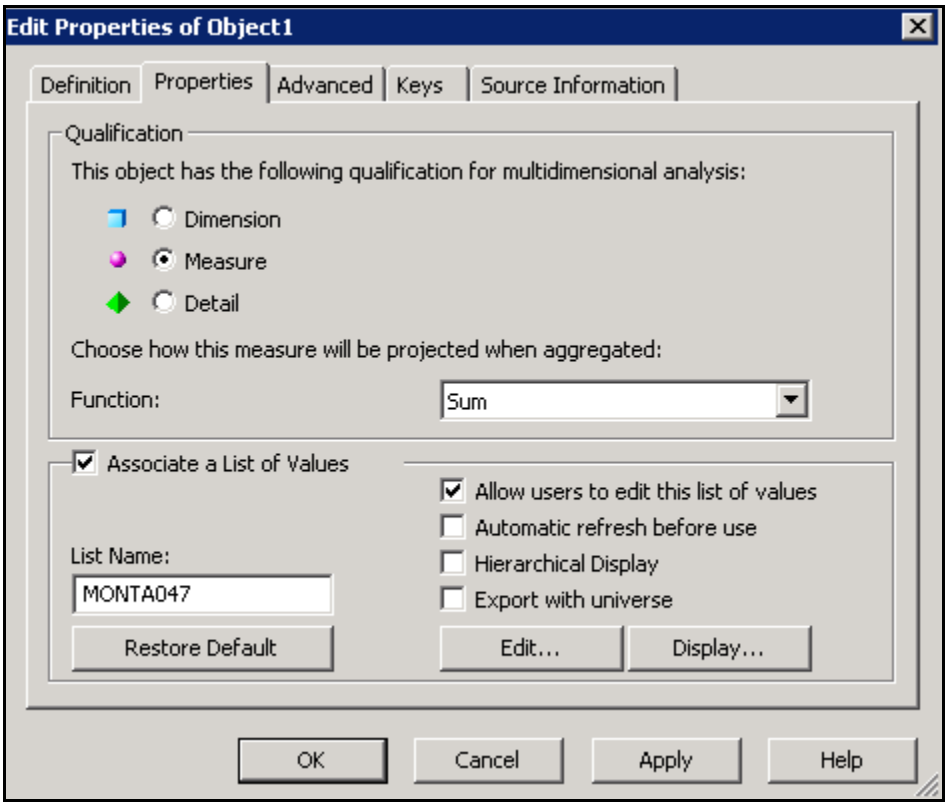

Figure 22: Edit Properties of Object1

Step 5: Select the **Definition** tab again and click **>>** to select the table column.

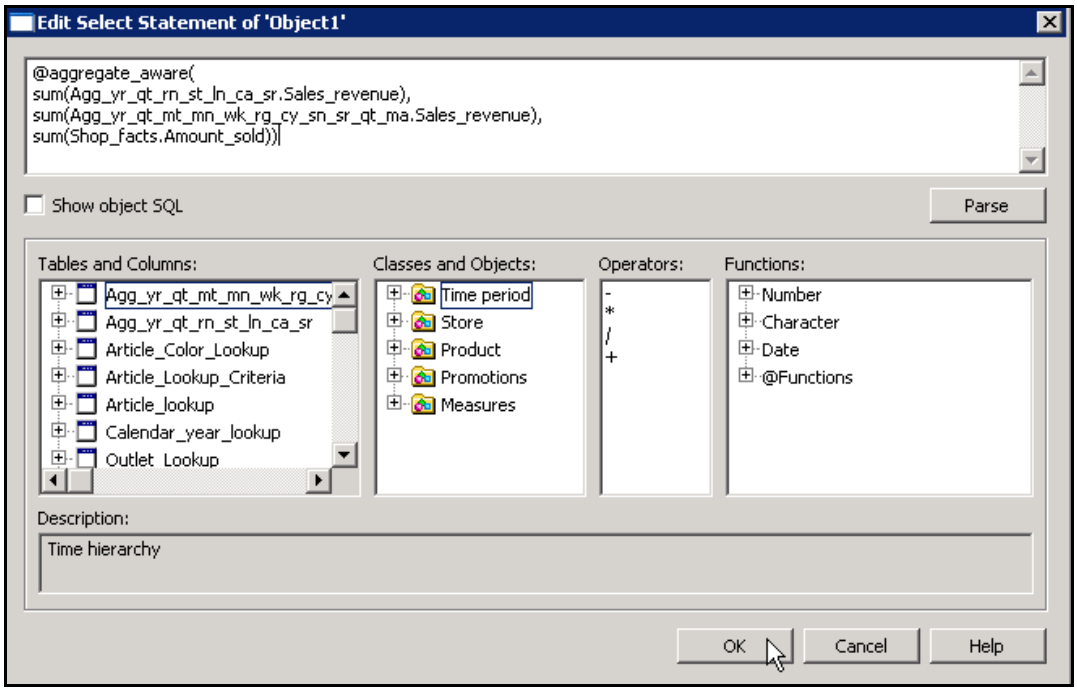

Figure 23: Edit Select Statement of 'Object1'

Step 6: Click **OK**. You can see all the variables created in **Classes and Objects** window as shown below.

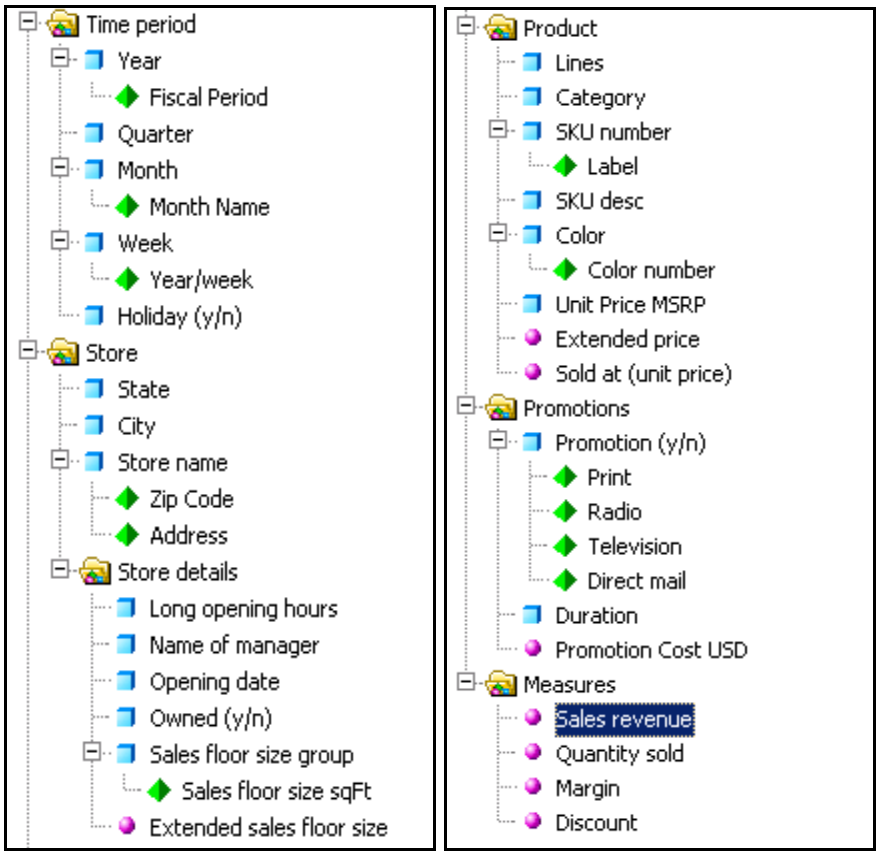

Figure 24: Variables

Lab 4. Apply Restrictions

Goals	• Create free floating condition objects. • Create flexible restrictions. • (Ensure that all previous lab assignments are complete before beginning the current lab.)
Time	55 – 60 Minutes

4.1: Create free-floating condition objects.

Solution:

Step 1: Create a condition as specified in worksheet **Lab 2(a)** of Lab Report Description file.

Step 2: Switch to **Filters** pane.

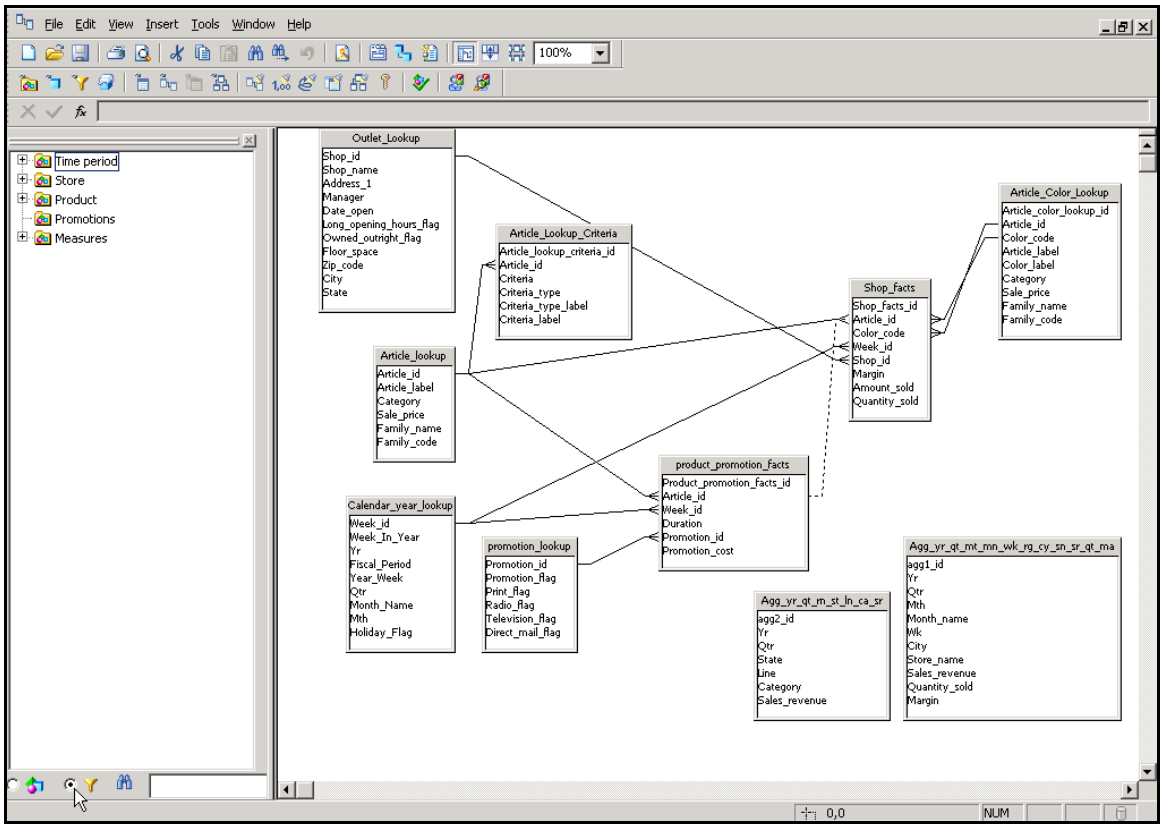

Figure 25: Filters pane

Step 3: Select **Measures** class. Use **Insert → Condition** menu and key in the **Name** and **Description** as specified.

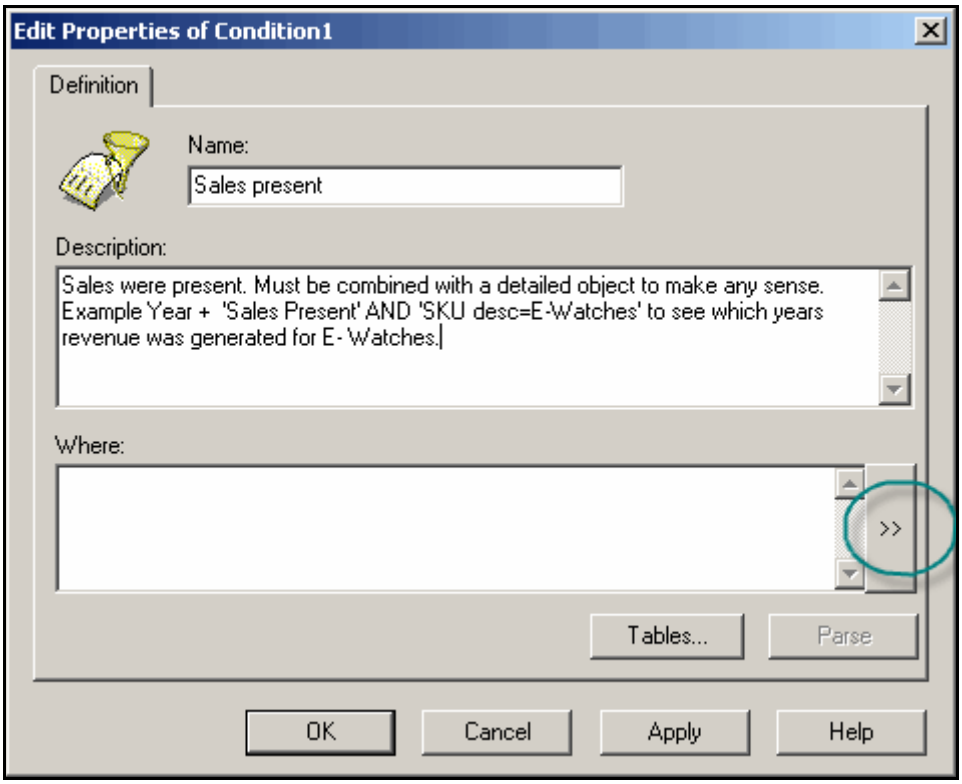

Figure 26: Edit Properties of Condition 1

Step 4: Select **>>** to define the WHERE clause.

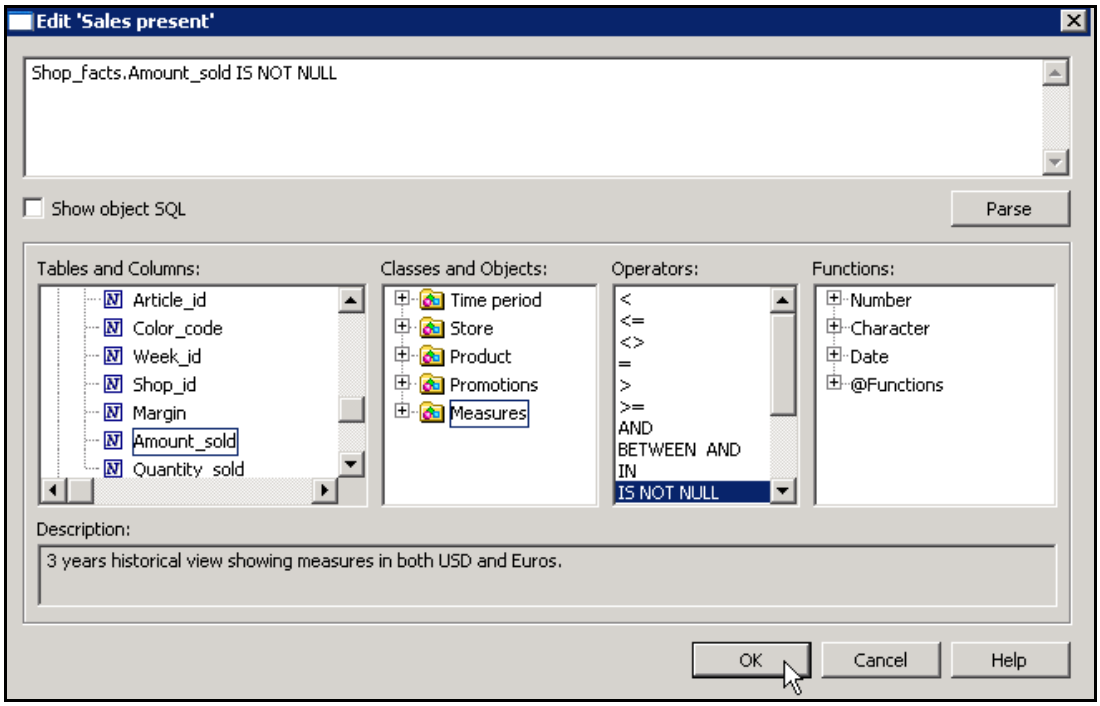

Figure 27: Edit 'Sales present'

Step 5: Parse for the syntax and then click **OK**.

4.2: Apply hard coded condition.

Solution:

Step 1: Create **Dimension** objects as specified in worksheet **Lab 2(b)** of Lab Report Description file.

Step 2: Insert a new condition into the **Time period** class. **<< To Do >>**

Step 3: Apply the specified formula as shown in the following figure.

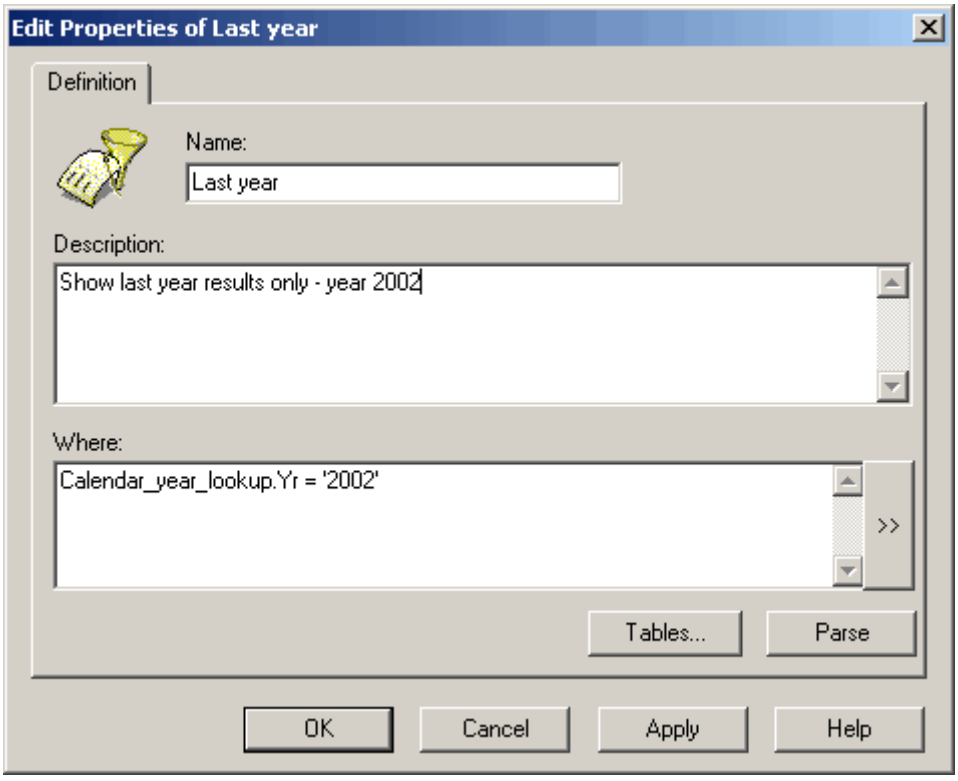

Figure 28: Edit Properties of Last Year

Step 4: Click **OK**.

4.3: Create Flexible Restrictions.

Solution:

Step 1: Create a condition as specified in worksheet **Lab 2(c)** of **Lab Report Description** file. **<< To Do >>**

Step 2: All the conditions created in **Classes** and **Objects** window should be as shown below.

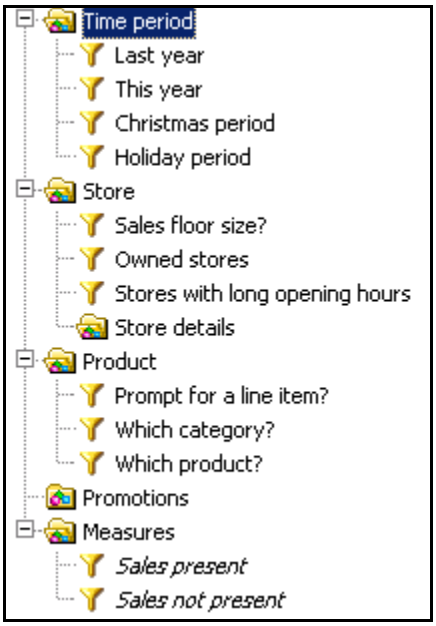

Figure 29: Conditions

Lab 5. Developing Hierarchies

Goals	• Create a custom hierarchy. • (Ensure that all previous lab assignments are complete before beginning the current lab.)
Time	30 Minutes

5.1: Create a custom hierarchy.

Solution:

Step 1: The dimensions involved in the hierarchy are:

Store/State – Store/City – Store/Storename **<< To Do >>**

Step 2: Name the hierarchy as 'Store'. **<< To Do >>**

Step 3: The hierarchy is shown in the **Hierarchies Editor** as shown below:

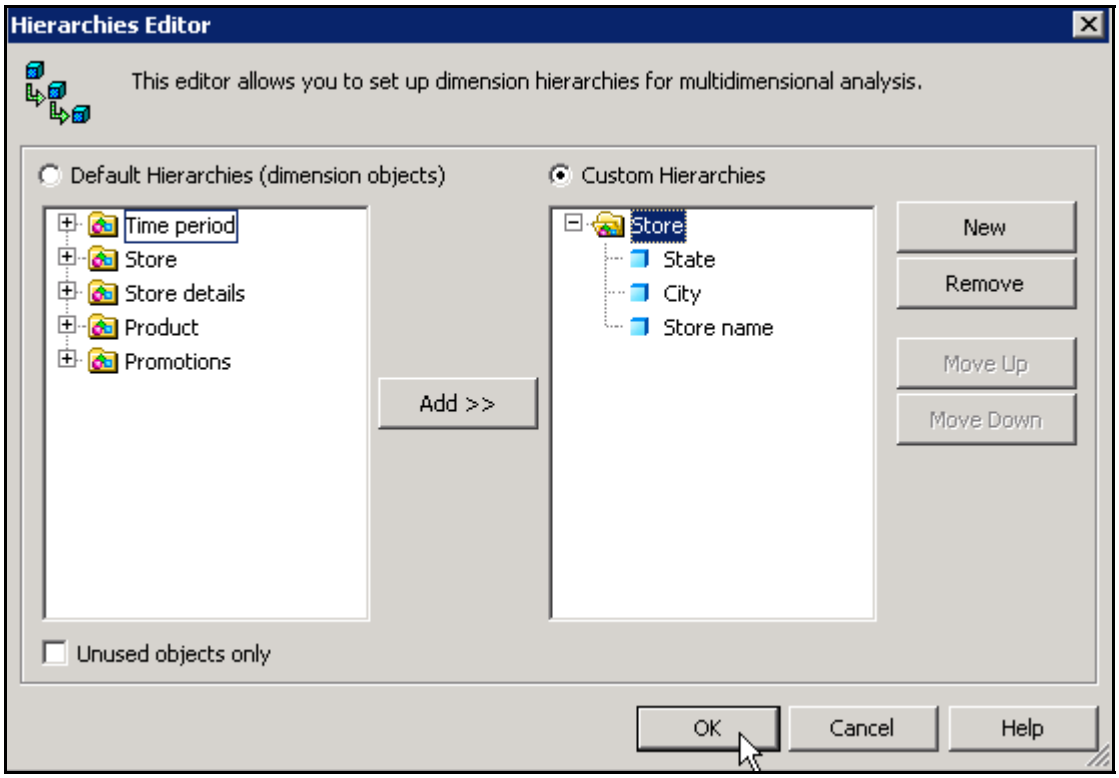

Figure 30: Hierarchies Editor

Step 4: Similarly create the following hierarchies.

Time period – Year, Quarter, Month, Week, Holiday (y/n)

Products – Lines, Category, SKU Desc, Color, Unit Price MSRP

Step 5: Save the Universe.

Lab 6. Test the Universe

Goals	• Use the various objects created in the earlier lab assignments. • Apply hierarchy and use the drilling mechanism. • (Ensure that all previous lab assignments are complete before beginning the current lab.)
Time	55 – 60 Minutes

6.1: Create a Master Detail report with the given specifications. Use the universe developed in the previous labs.

Master: Time period/Year
Double Master: Store/State
Details: Product/Lines

Solution:

Step 1: Use the eFashion Universe and generate the report. **<< To Do >>**

Step 2: Use **TRG_<id>_LAB** Universe and generate the same report. **<< To Do >>**

Step 3: Ensure that the output from both the reports matches else rework on your universe definitions. Note your observations regarding the differences in the space provided below.

6.2: Create a crosstab report to show Year-wise, Product Line-wise Sales revenue for each Quarter.

Master: Time period/Year
Row: Product/Lines
Columns: Time period/Quarter
Measures: Measures/Sales revenue

Solution:

Step 1: Use the eFashion Universe and generate the report. **<< To Do >>**

Step 2: Use TRG_<id>_LAB Universe and generate the same report. **<< To Do >>**

Step 3: Note your output in the space provided below.

6.3: Modify your report from the previous section to apply conditions for a selected month range for the Year 2003.

Solution:

Step 1: Add a condition Year equal to 2003. **<< To Do >>**

Step 2: Create two prompts for the **Month** column.

Starting Month

Ending Month **<< To Do >>**

Step 3: Refresh the report from eFashion universe for the same conditions. Note the differences (if any) in the space provided below.

6.4: Create a report, which shows Year-wise Monthly Sales Revenue for each City. User should be prompted to select the Year.

Master: Time period/Year
Detail: Store/City, Time period/Month Name, Measures/Sales revenue

<< To Do >>

6.5: Modify the above report.

Solution:

Step 1: Replace the **Sales revenue** measure with **Quantity sold**.

Step 2: Study the report and note down your observations in detail. Try to figure out the solution. **<< To Do >>**

Lab 7. Detect Loops

Goals	• Use the loop detection mechanism. • Resolve the loops (if any). • (Ensure that all previous lab assignments are complete before beginning the current lab.)
Time	10 – 15 Minutes

7.1: Use the loop detection mechanism.

Solution:

Step 1: Select the option **Tools → Detect Cardinalities** to check if all the cardinalities are defined properly. **<< To Do >>**

Step 2: Use the option **Tools → Detect Loops** to figure out the number of loops in the given structure. Observe the loop that is detected. One loop will be detected and the **Candidate Context** will be suggested.

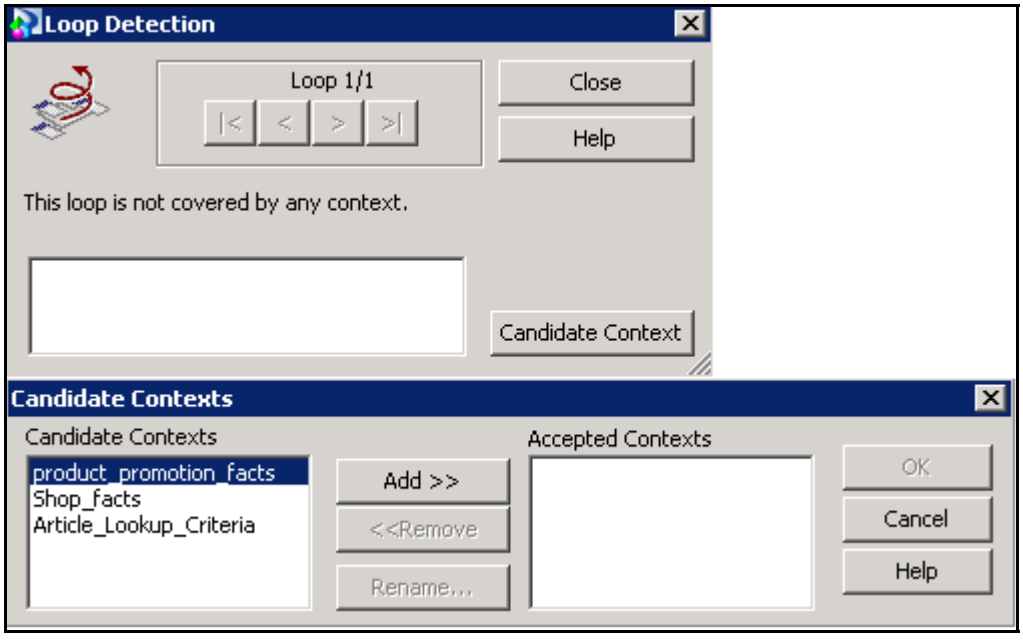

Figure 31: Loop Detection and Candidate Contexts

Step 3: Resolve the loop by selecting the contexts **Shop_facts** and **Product_promotion_facts**. Rename **Product_promotion_facts** to **Promotions**.

<< To Do >>

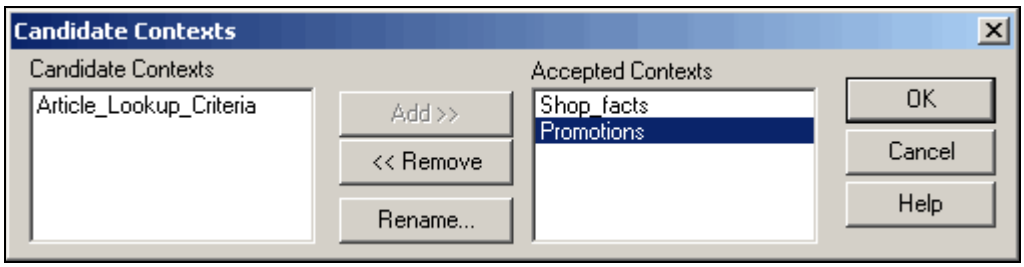

Figure 32: Candidate Contexts

Step 4: Change the view by selecting **View → List Mode**. **<< To Do >>**

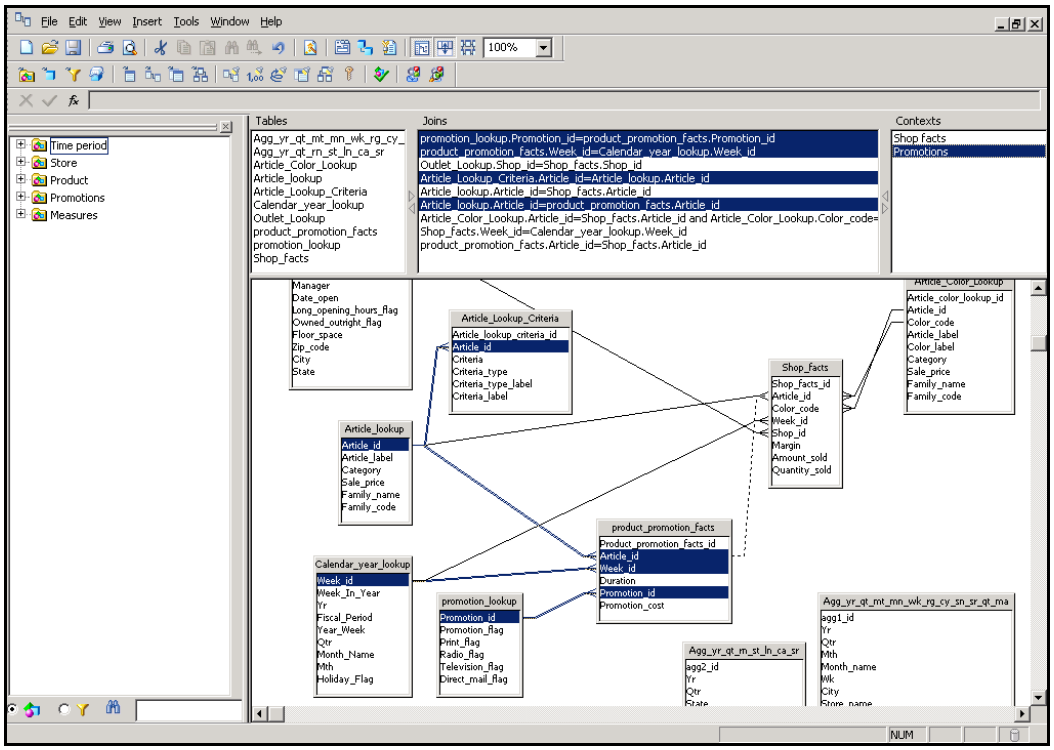

Figure 33: List Mode

Step 5: Select the **Promotions** context. Double click and select the join **Article_Lookup_Criteria.Article_id = Article_Lookup.Article_id**.

Step 6: Click **OK**. **<< To Do >>**

Step 7: Select the **Shop_facts** context. Double click and select the join **Shop_Facts.Article_id = Product_Promotion_Facts.Article_id**. **<< To Do >>**

Step 8: Click **OK**. **<< To Do >>**

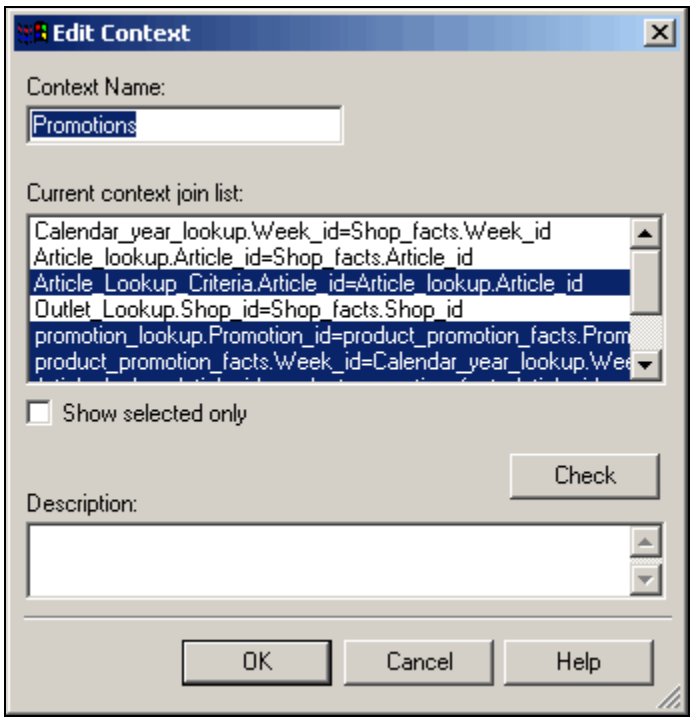

Figure 34: Edit Context

Step 9: Save the Universe.

Lab 8. Object Reusability

Goals	• Create an object using existing objects. • Define a condition based on the existing objects. • (Ensure that all previous lab assignments are complete before beginning the current lab.)
Time	25 – 30 Minutes

8.1: Create a measure object using existing objects.

Step 1: Work on the same universe created in previous lab sessions.

Step 2: Create a Measure object **Sold at (unit price)** in the **Product** class. Key in the values as shown in the figure given below. **<< To Do >>**

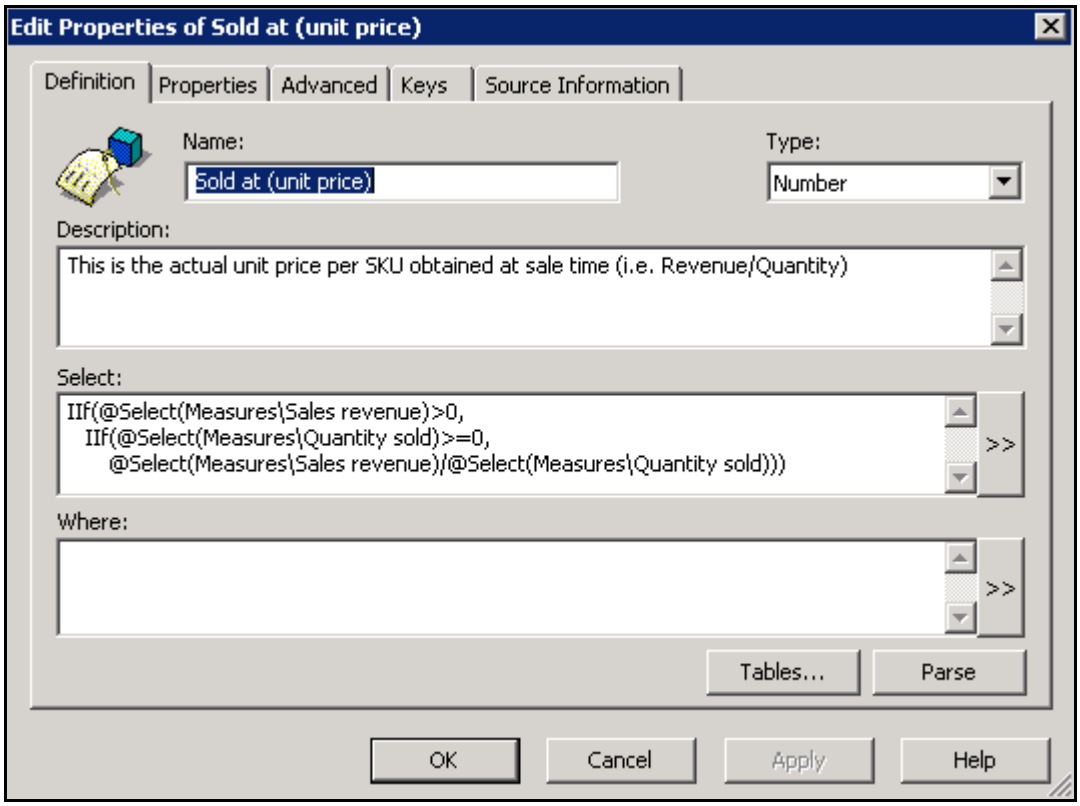

Figure 35: Edit Properties of Sold at (unit price)

Step 3: Create condition objects **Stores/Owned Stores** and **Stores/Stores with long opening hours** as specified in worksheet of Lab Report Description file. **<< To Do >>**

Step 4: Save the Universe.

Lab 9. Universe Distribution

Goals	• Learn universe distribution. • (Ensure that all previous lab assignments are complete before beginning the current lab.)
Time	10 – 15 Minutes

9.1: Export the universe created during the lab sessions.

Solution:

Step 1: Open the universe created in the previous lab sessions.

Step 2: Use the **File** → **Export** option to export the same to the corporate repository.

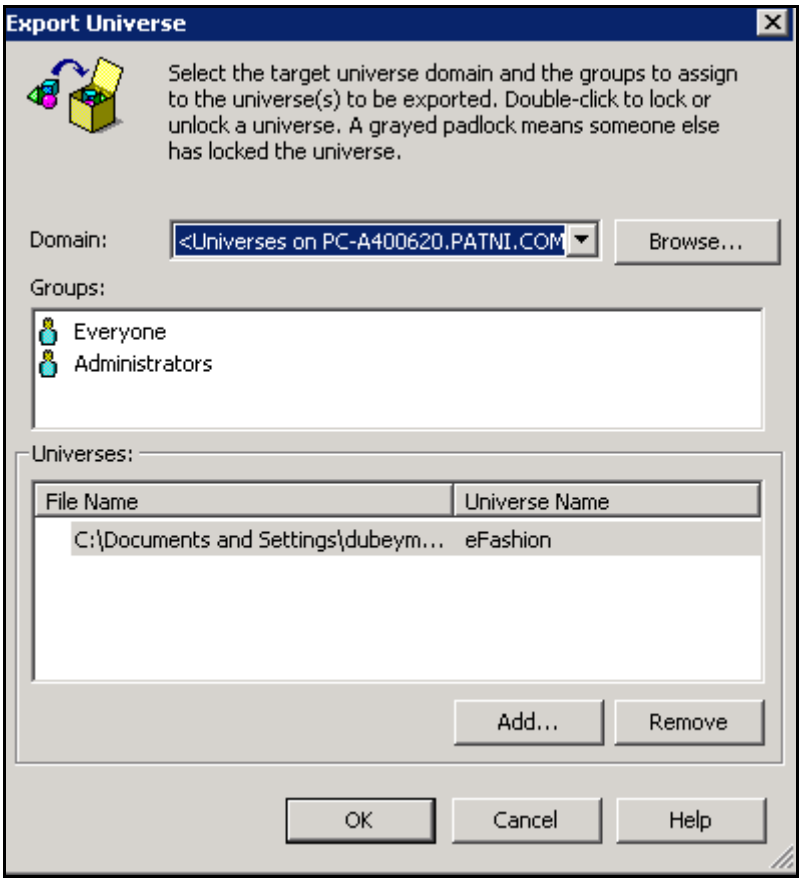

Figure 36: Export Universe

Step 3: Click **OK** to export to the repository.

9.2: Change the Designer options to allow incremental exports.

<< To Do >>

9.3: Import the universe from corporate repository.

Step 1: Import your own universe from the repository. **<< To Do >>**

Appendices

Appendix A: Table of Figures

