EX.NO : 4	CREATING A CUBE IN SQL SERVER 2012
DATE :	

AIM:

To create a OLAP cube with data warehouse fact tables and dimensions in SQL Server Management Studio.

PROCEDURE:

 # Creating Data Warehouse:

Let us execute our T-SQL Script to create data warehouse with fact tables, dimensions and populate them with appropriate test values.

Download T-SQL script attached with this article for creation of Sales Data Warehouse or download from this article **"Create First Data Warehouse**" and run it in your SQL Server.

Follow the given steps to run the query in **SSMS** (SQL Server Management Studio).

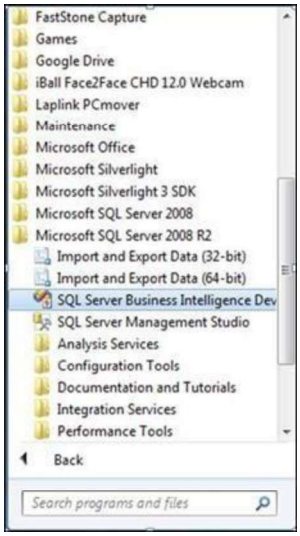
1. Open SQL Server Management Studio 2008
2. Connect Database Engine
3. Open **New Query** editor
4. Copy paste Scripts given below in various steps in new query editor window one by one
5. To run the given SQL Script, press **F5**
6. It will create and populate "Sales_DW" database on your SQL Server

 # Developing an OLAP Cube:

For creation of OLAP Cube in Microsoft BIDS Environment, follow the 10 easy steps given below.

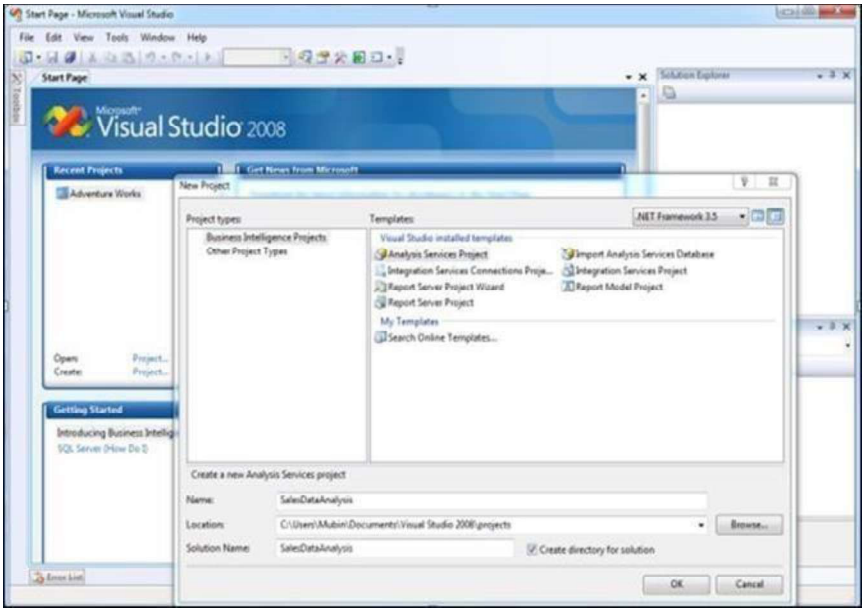
Step 1: Start BIDS Environment

Click on **Start Menu -> Microsoft SQL Server 2008 R2 ->** Click **SQL Server Business Intelligence Development Studio.**



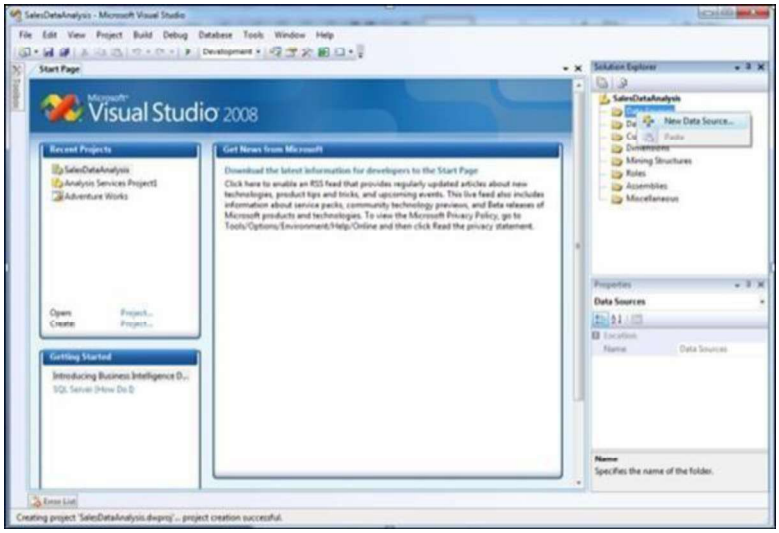
Step 2: Start Analysis Services Project

Click **File** -> **New** -> **Project** ->**Business Intelligence Projects** ->select **Analysis Services Project**-> Assign Project **Name** -> Click **OK**



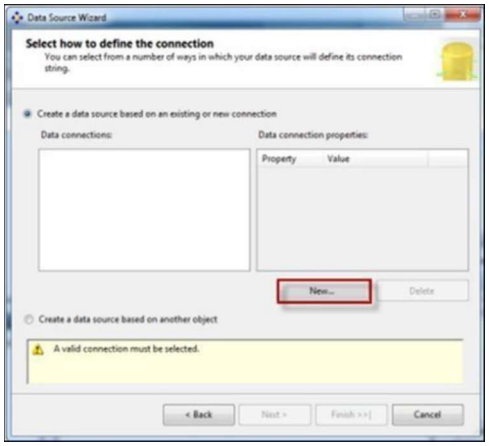
Step 3: Creating New Data Source

- In Solution Explorer, Right click on **Data Source** -> Click **New Data Source**



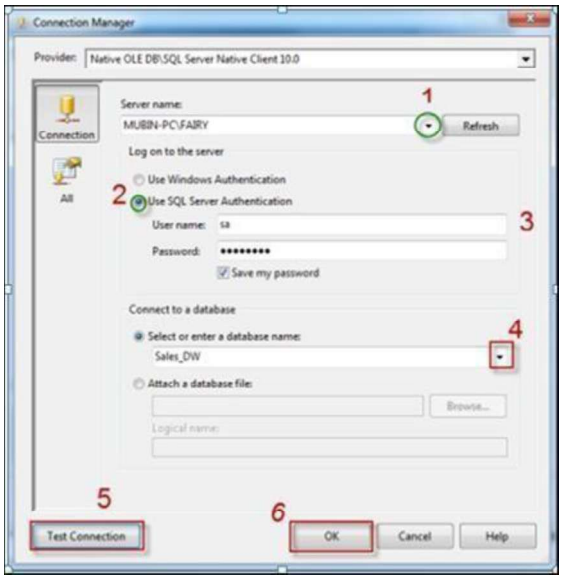
- Click on **Next**

- Click on New **Button**

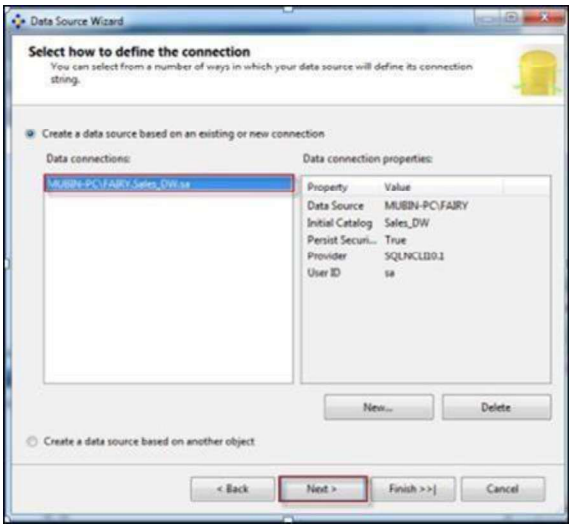


- Creating **New connection**

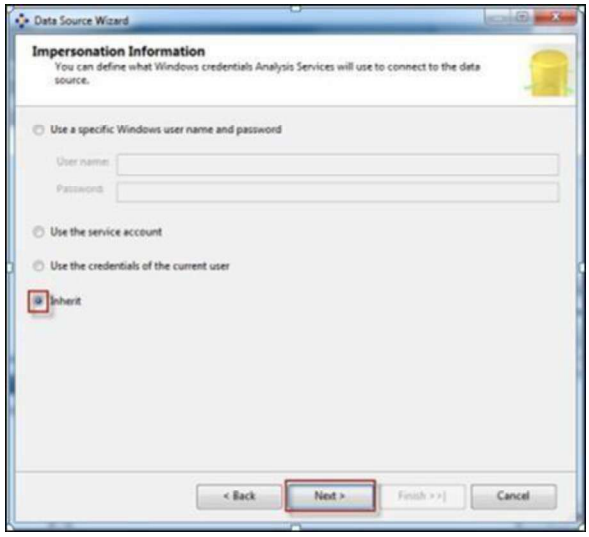
1. Specify Your SQL **Server Name** where your Data Warehouse was created
2. Select Radio Button according to your **SQL Server Authentication** mode
3. Specify your **Credentials** using which you can connect to your SQL Server
4. Select database Sales_DW.
5. Click on **Test Connection** and verify for its success click **OK**.



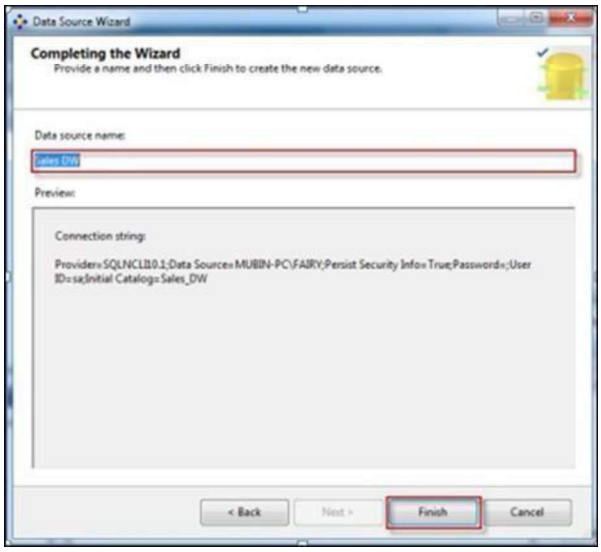
- Select Connection created in **Data Connections**-> Click **Next**

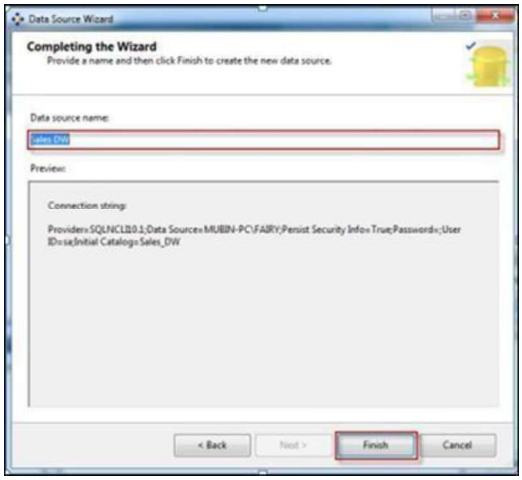


- Select Option **Inherit**



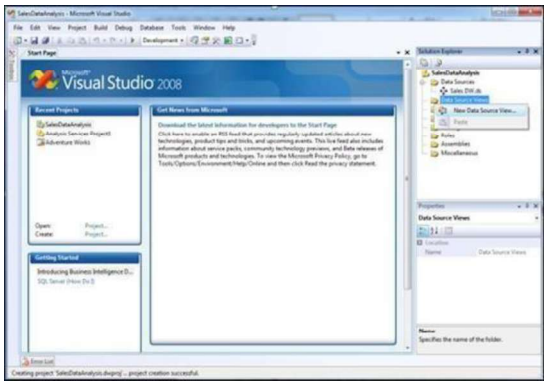
- Assign Data Source **Name** -> Click **Finish**





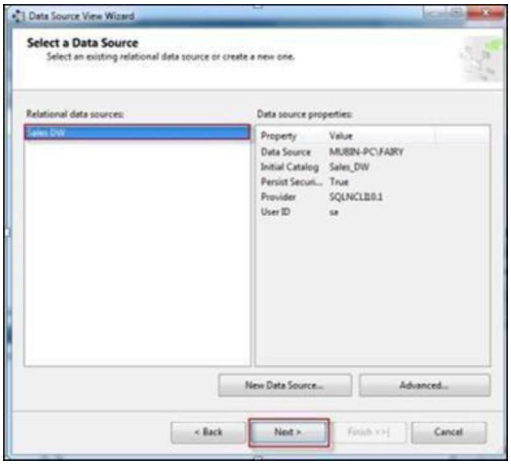
Step 4: Creating New Data Source View

- In the Solution Explorer, Right Click on **Data Source View** -> Click on **New Data Source View**

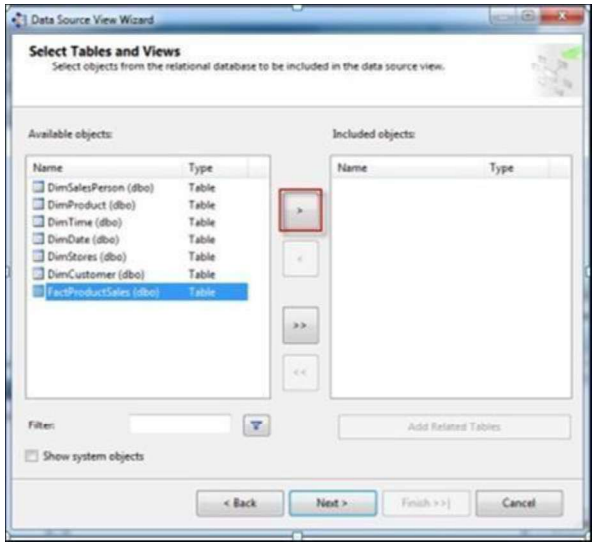


- Click **Next**

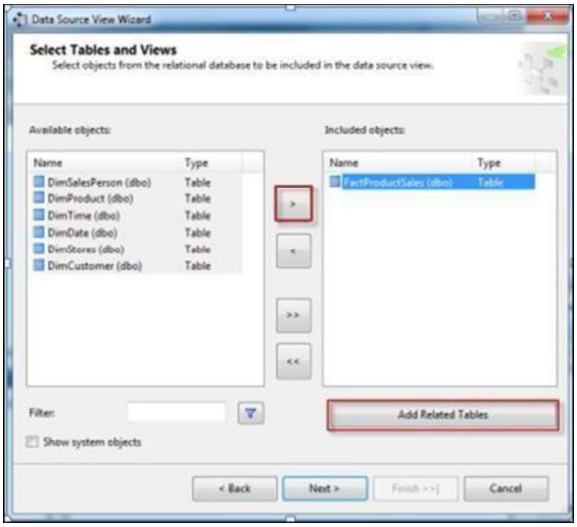
- Select **Relational Data Source** we have created previously (Sales_DW)-> Click **Next**



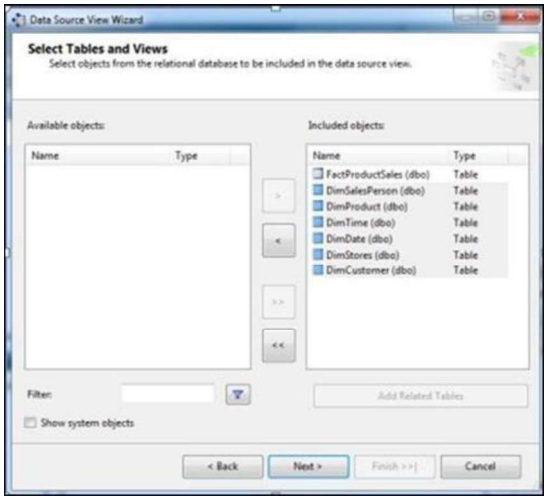
- First move your **Fact Table** to the right side to include in object list.



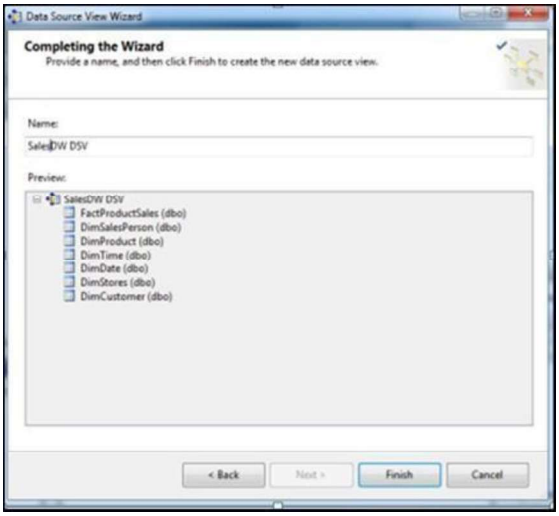
- Select FactProductSales Table -> Click on Arrow Button to move the selected object to Right Pane.
- Now to **add dimensions** which are **related** to your **Fact Table**, follow the given steps: Select **Fact Table** in Right Pane (Fact product Sales) -> Click On **Add Related Tables**



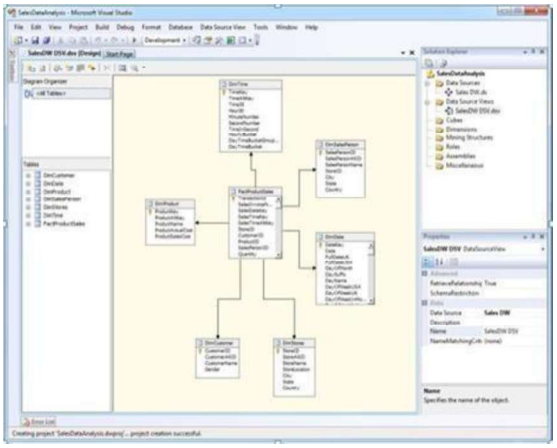
- It will add all associated dimensions to your Fact table as per relationship specified in your SQL DW (Sales_DW).
- Click **Next**.



- Assign **Name (SalesDW DSV)->** Click **Finish**

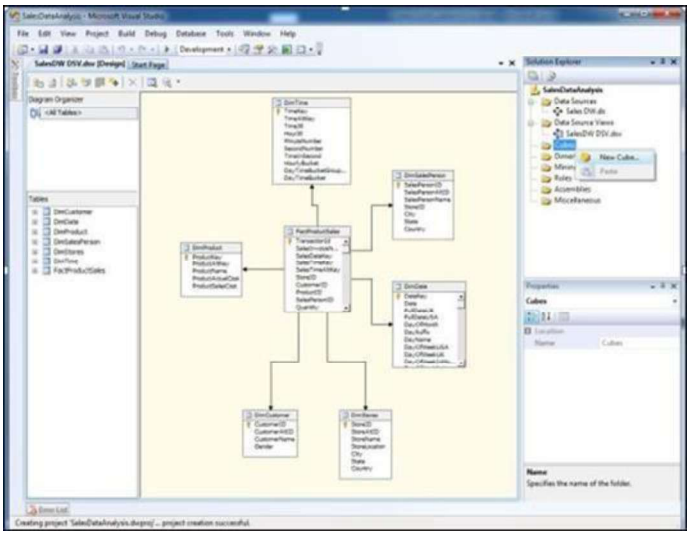


- Now Data Source View is ready to use.



Step 5: Creating New Cube

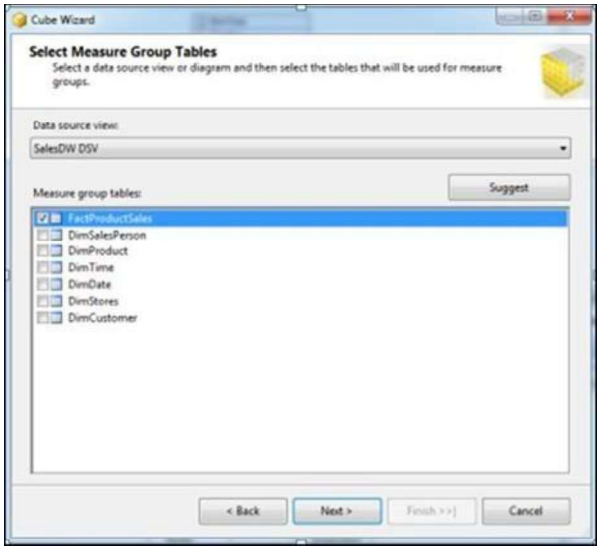
- In Solution Explorer -> Right Click on **Cube->** Click **New Cube**



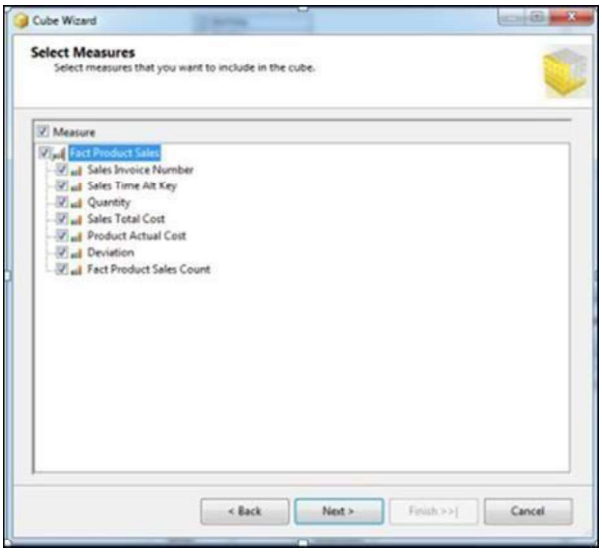
- Click **Next**

- Select Option **Use existing Tables ->** Click **Next**

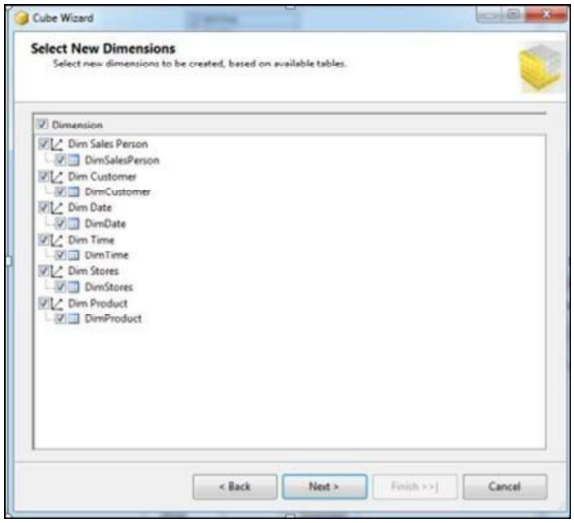
- Select Fact Table Name from **Measure Group Tables (FactProductSales) ->** Click **Next**



- Choose **Measures** from the List which you want to place in your Cube --> Click **Next**

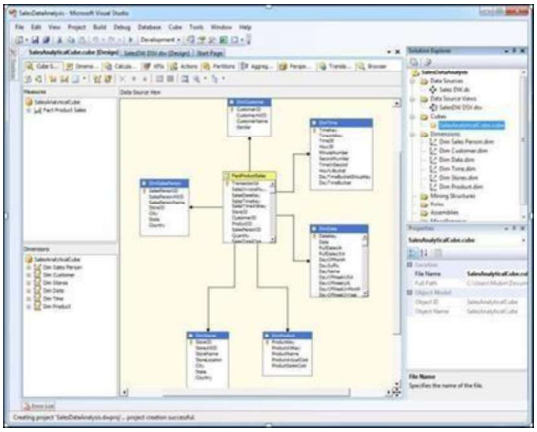


- Select All **Dimensions** here which are associated with your Fact Table-> Click **Next**



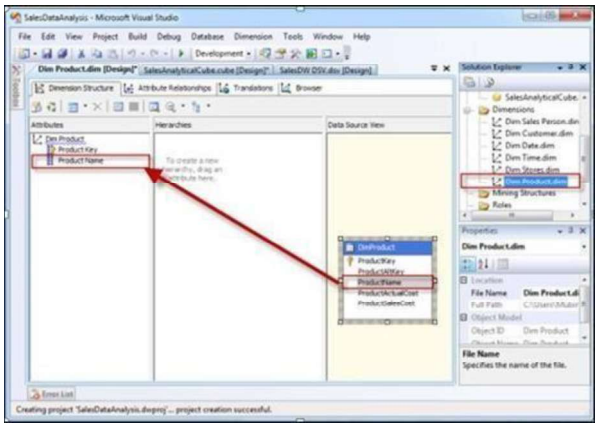
- Assign **Cube Name** (SalesAnalyticalCube) -> Click **Finish**

- Now your Cube is ready, you can see the newly created cube and dimensions added in your solution explorer.



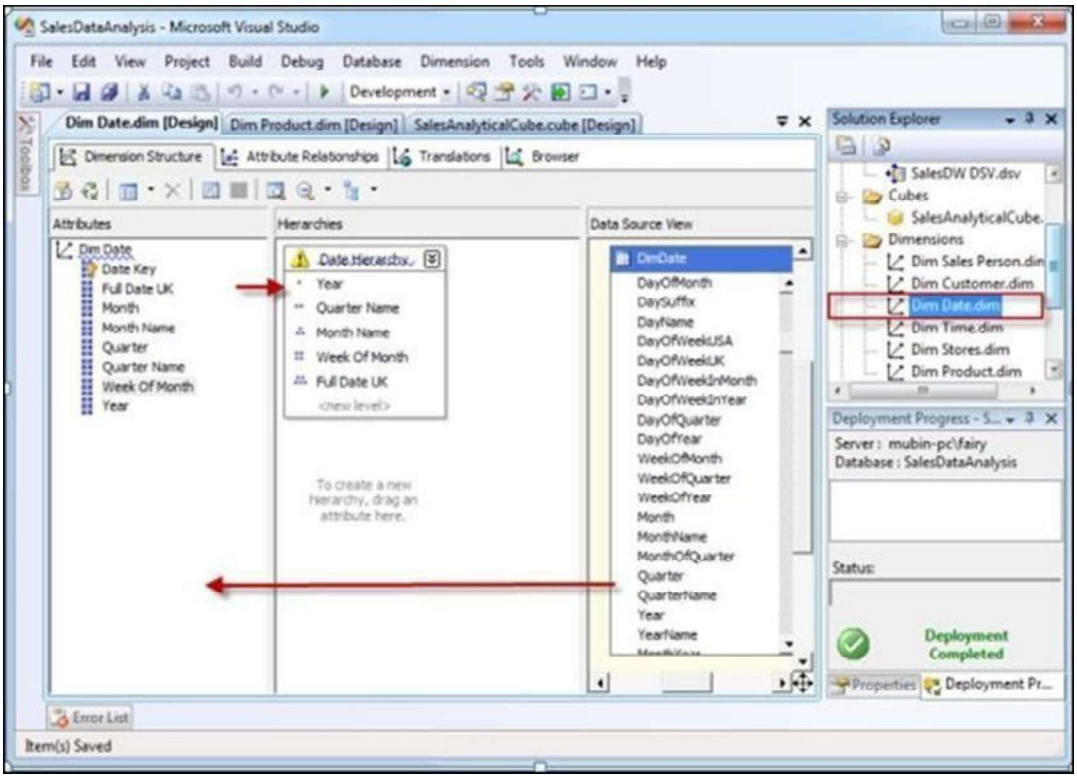
Step 6: Dimension Modification

In Solution Explorer, double click on dimension **Dim Product ->** Drag and Drop Product Name from Table in Data Source View and Add in Attribute Pane at left side.



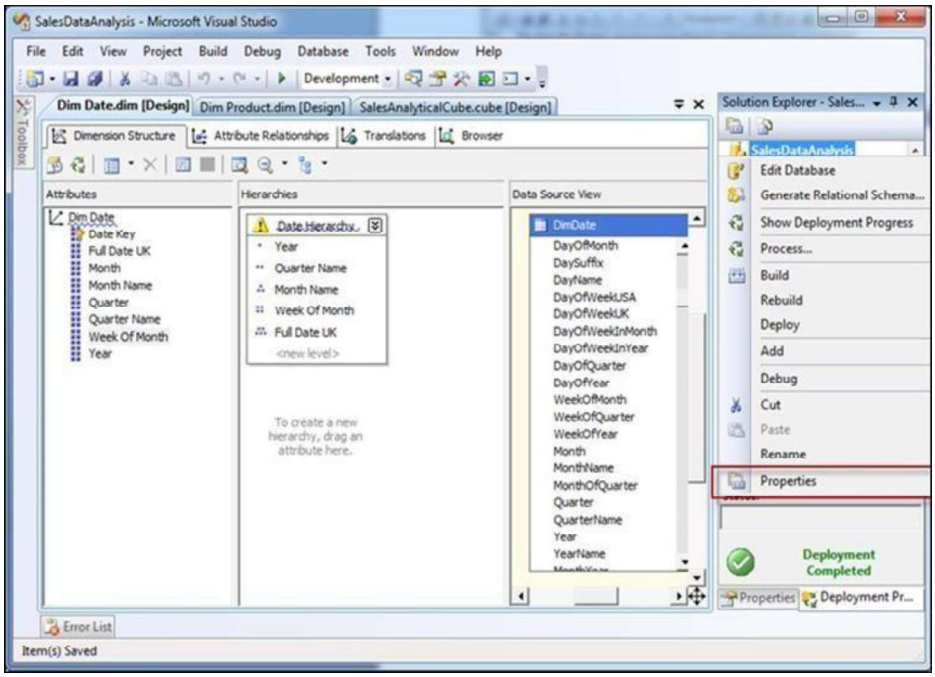
Step 7: Creating Attribute Hierarchy in Date Dimension

- Double click On **Dim Date** dimension -> Drag and Drop Fields from Table shown in Data Source View to Attributes-> Drag and Drop attributes from leftmost pane of attributes to middle pane of Hierarchy.
- Drag fields in sequence from Attributes to Hierarchy window (Year, Quarter Name, Month Name, Week of the Month, Full Date UK)

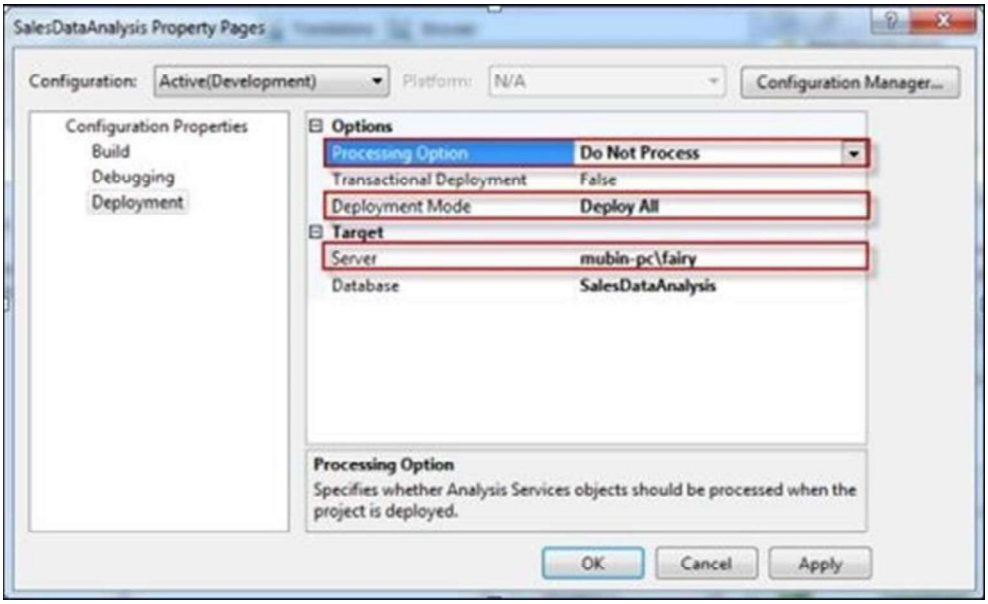


Step 8: Deploy the Cube

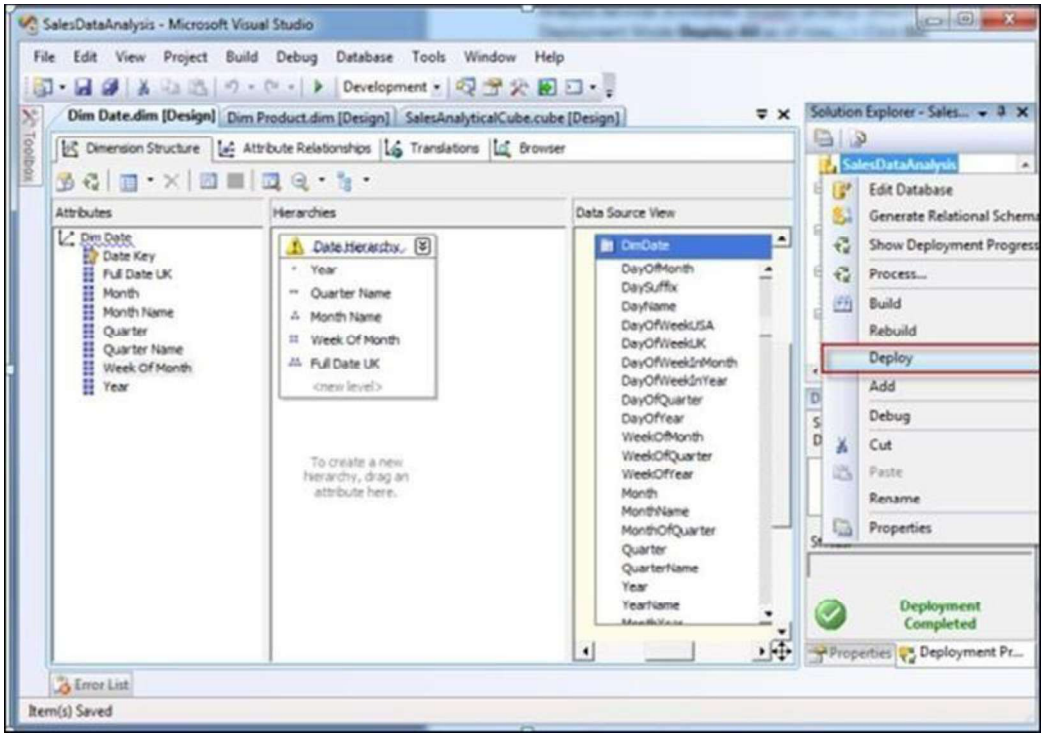
- In Solution Explorer, right click on Project Name (SalesDataAnalysis) -- > Click **Properties**



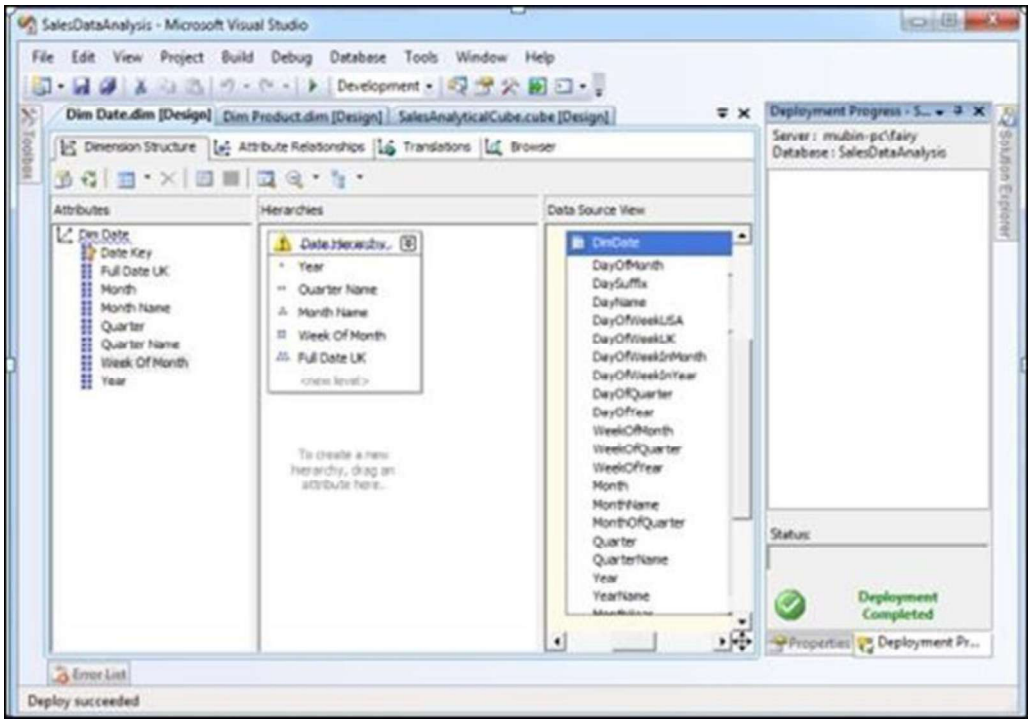
- Set **Deployment Properties** First
- In Configuration Properties, Select Deployment-> Assign Your SQL Server Instance Name Where Analysis Services Is Installed (mubin-pc\fairy) (Machine Name\Instance Name) -> Choose Deployment Mode Deploy All as of now ->Select Processing Option Do Not Process -> Click OK



- In Solution Explorer, right click on **Project Name** (SalesDataAnalysis) -- > Click **Deploy**

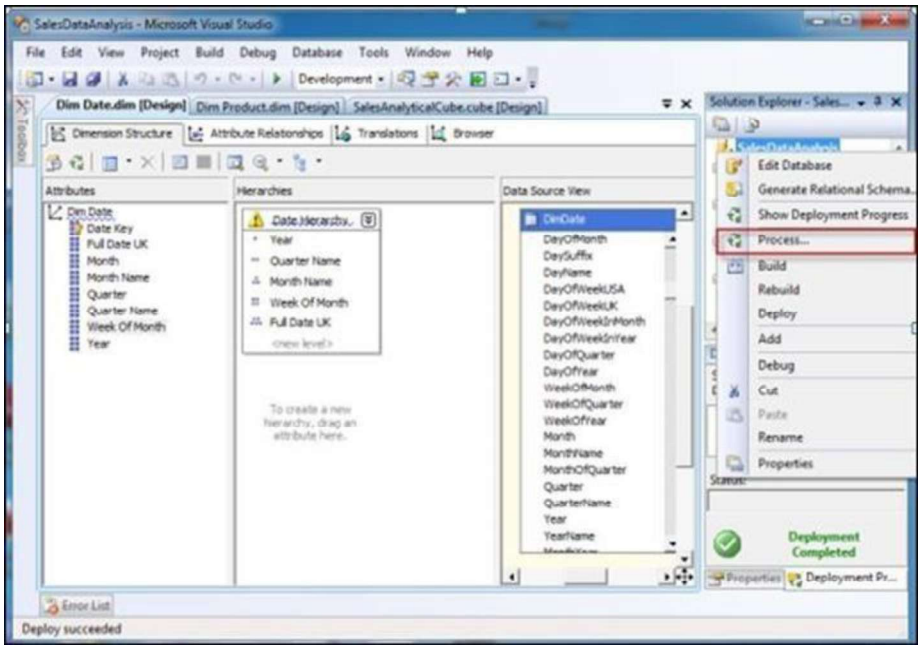


- Once Deployment will finish, you can see the message **Deployment Completed** in deployment Properties.

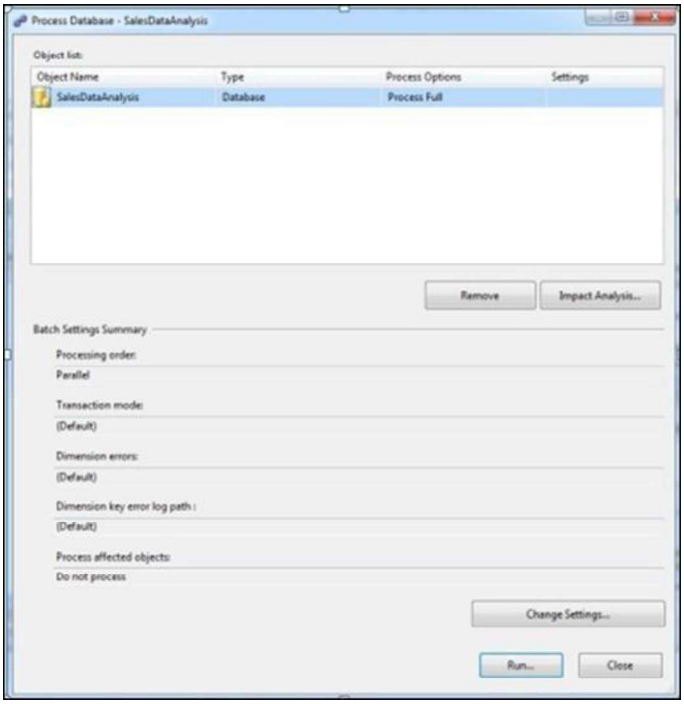


Step 9: Process the Cube

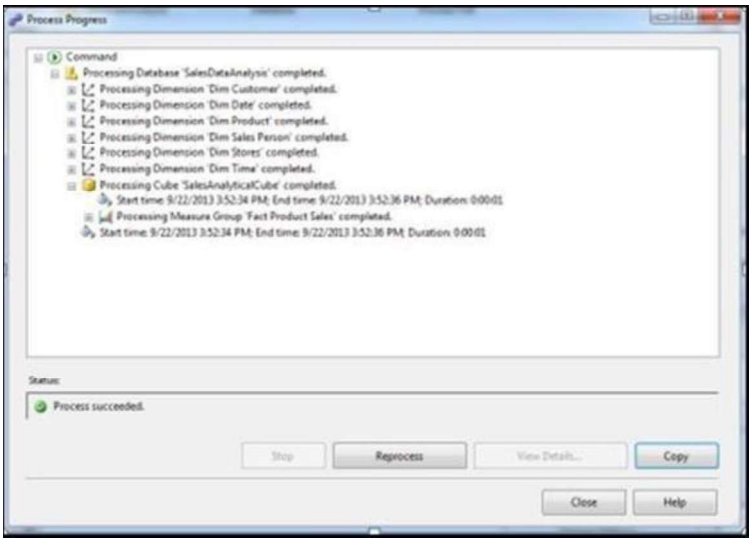
- In Solution Explorer, right click on Project Name (SalesDataAnalysis) -- > Click **Process**



- Click on **Run** button to process the Cube



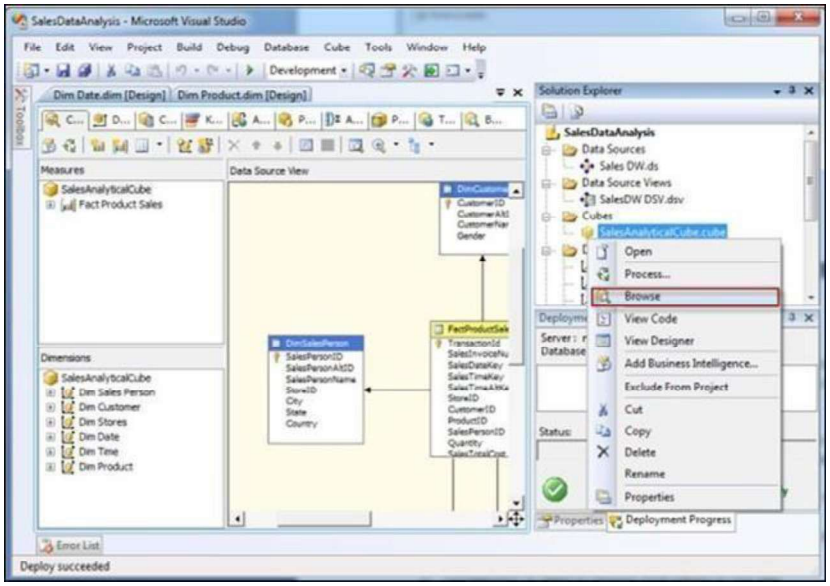
- Once processing is complete, you can see **Status** as **Process Succeeded** -->Click **Close** to close both the open windows for processing one after the other.



Step 10: Browse the Cube for Analysis

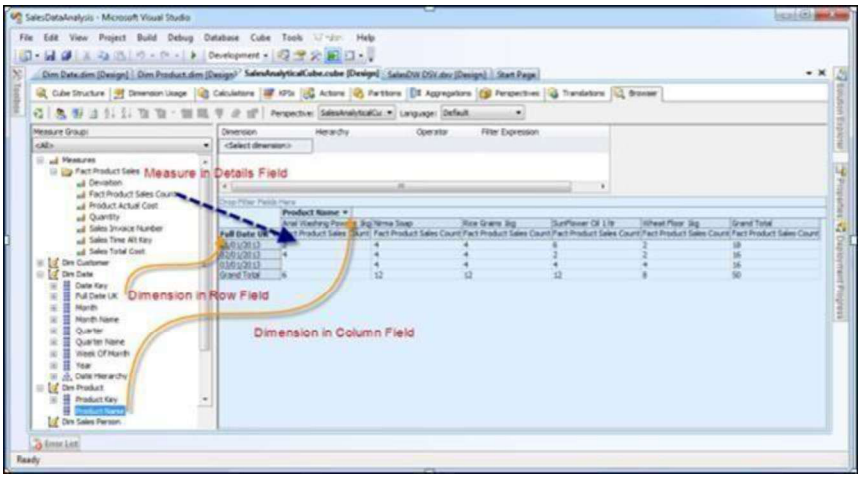
- In Solution Explorer, right click on Cube Name (SalesDataAnalysisCube) -- > Click

Browse



- Drag and drop measures in to Detail fields, & Drag and Drop Dimension Attributes in Row Field or Column fields.
- Now to **Browse Our Cube**

1. Product Name Drag & Drop into Column
2. Full Date UK Drag & Drop into Row Field
3. FactProductSalesCount Drop this measure in Detail area



RESULT:

Thus the OLAP cube with data warehouse fact tables and dimensions were created, deployed and processed in SQL Server Management Studi