

ASSIGNMENT – 3

Title: - Create the cube with suitable dimension and fact tables

Problem Statement: -

Create the cube with suitable dimension and fact tables based on ROLAP, MOLAP and HOLAP model.

Objectives:

- To create the cube with suitable dimension and fact tables based on OLAP.

Outcome: -

- Creation of the cube with suitable dimension and fact tables based on OLAP.

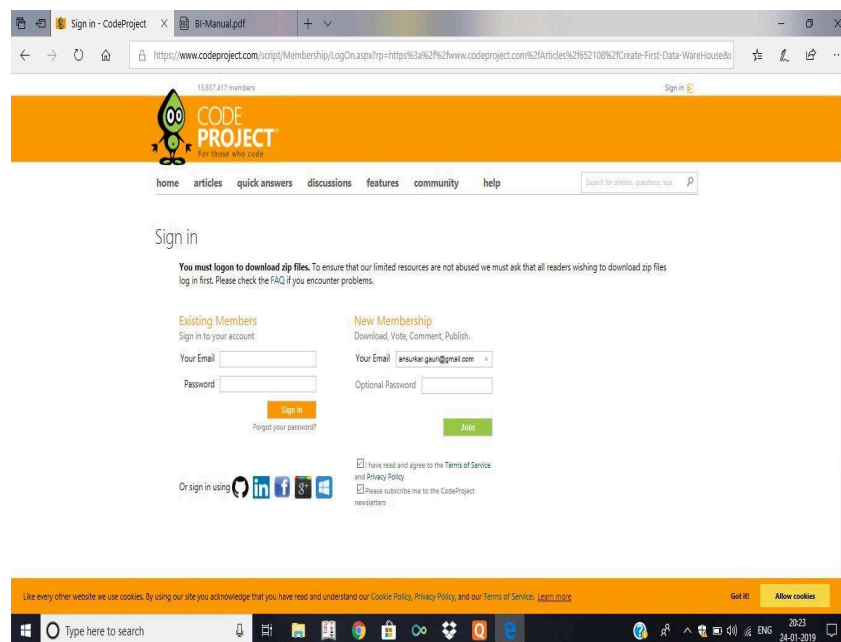
Theory: -

Step 1: 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.

Downloading "Data_WareHouse_____SQLScript.zip" from the article <https://www.codeproject.com/Articles/652108/Create-First-Data-WareHouse>



After downloading extract file in folder.

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

- Open SQL Server Management Studio 2012
- Connect Database Engine

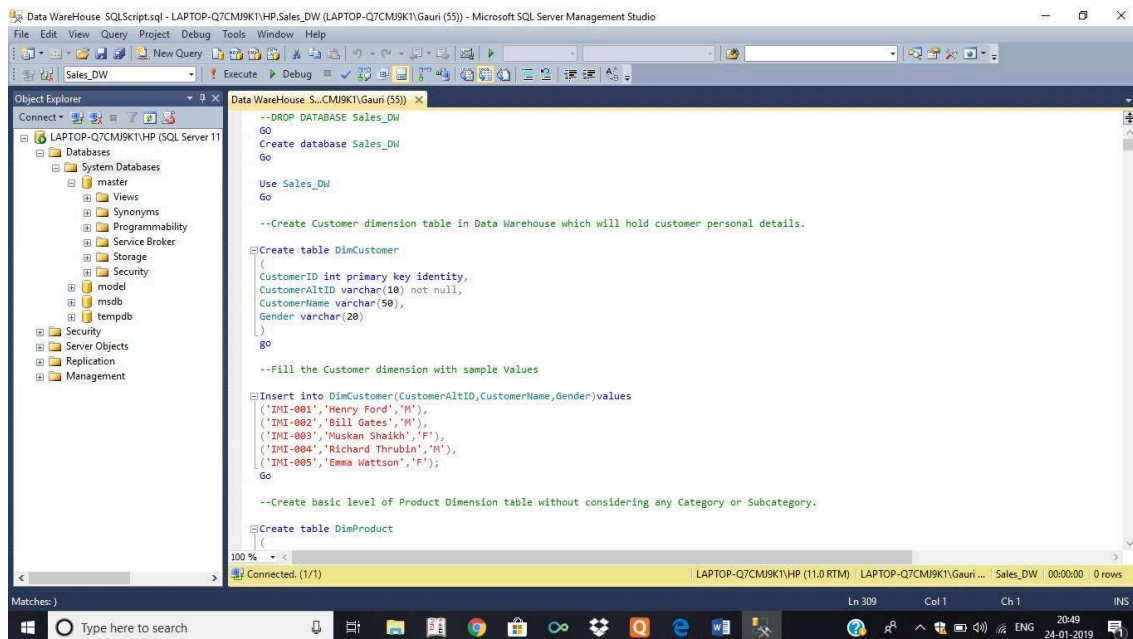


Password for sa : admin123 (as given during installation) Click Connect.

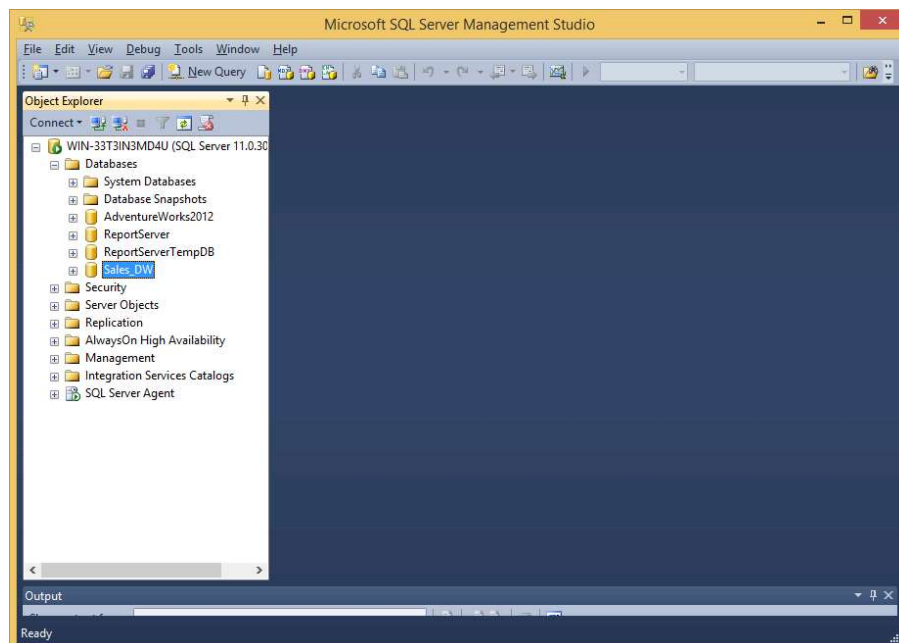
- Open New Query editor
- Copy paste Scripts given below in various steps in new query editor window one by one
- To run the given SQL Script, press F5
- It will create and populate “Sales_DW” database on your SQL Server

OR

- Go to the extracted sql file and double click on it.
- New Sql Query Editor will be opened containing Sales_DW Database.



- Click on execute or press F5 by selecting query one by one or directly click on Execute.
- After completing execution save and close SQL Server Management studio & Reopen to see Sales_DW in Databases Tab.

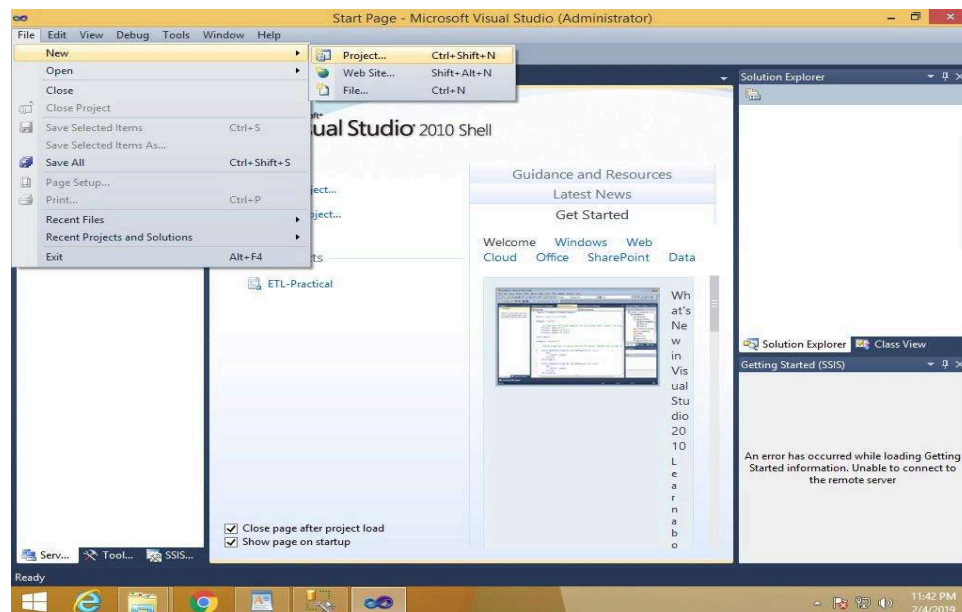


Step 2: Start SSDT environment and create New Data Source

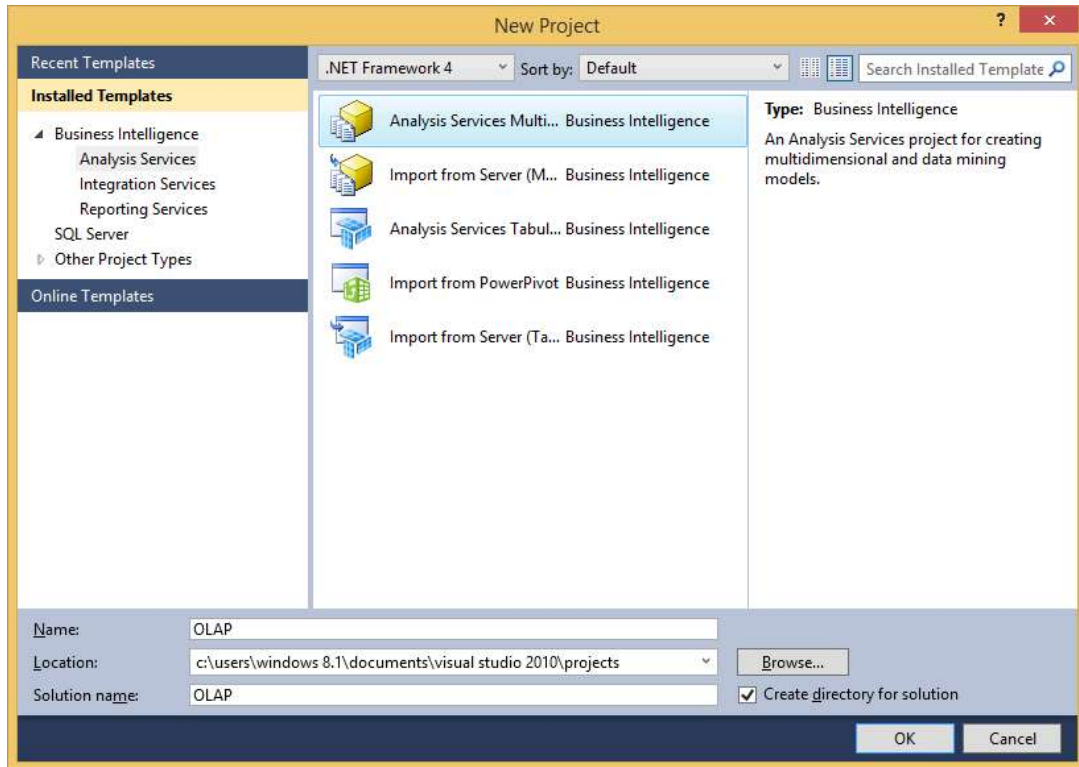
Go to Sql Server Data Tools --> Right click and run as administrator



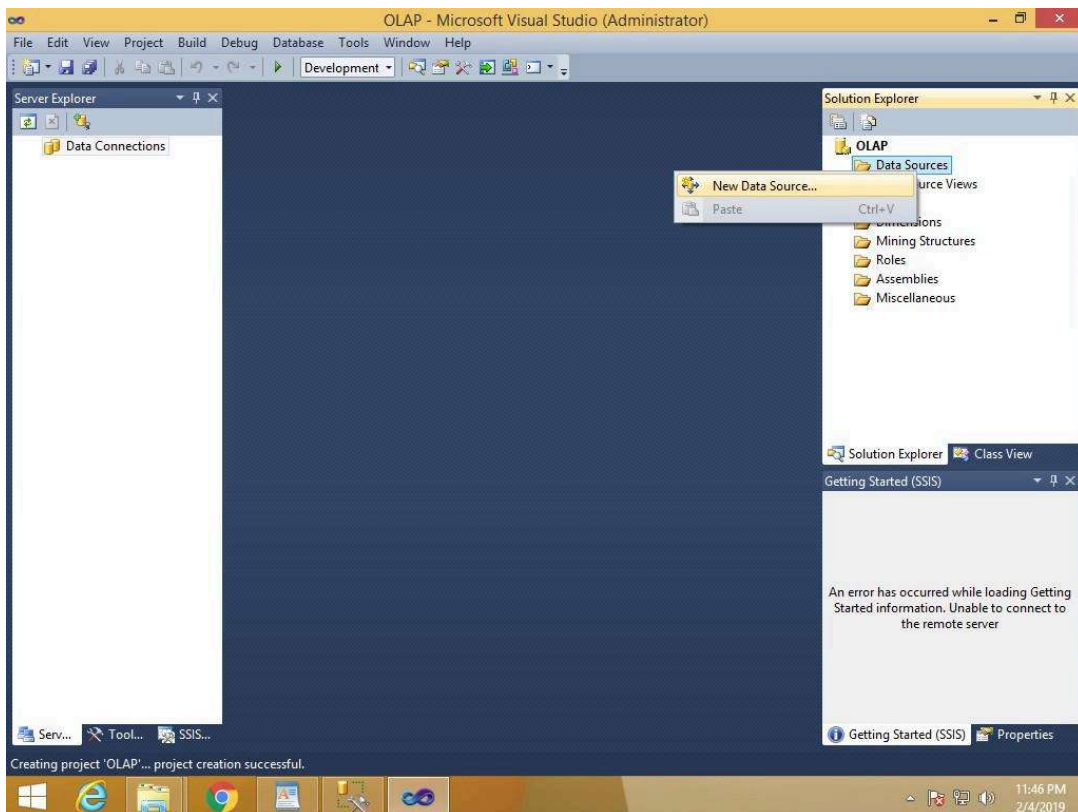
Click on File à New à Project



In Business Intelligence à Analysis Services Multidimensional and Data Mining models à appropriate project name à click OK



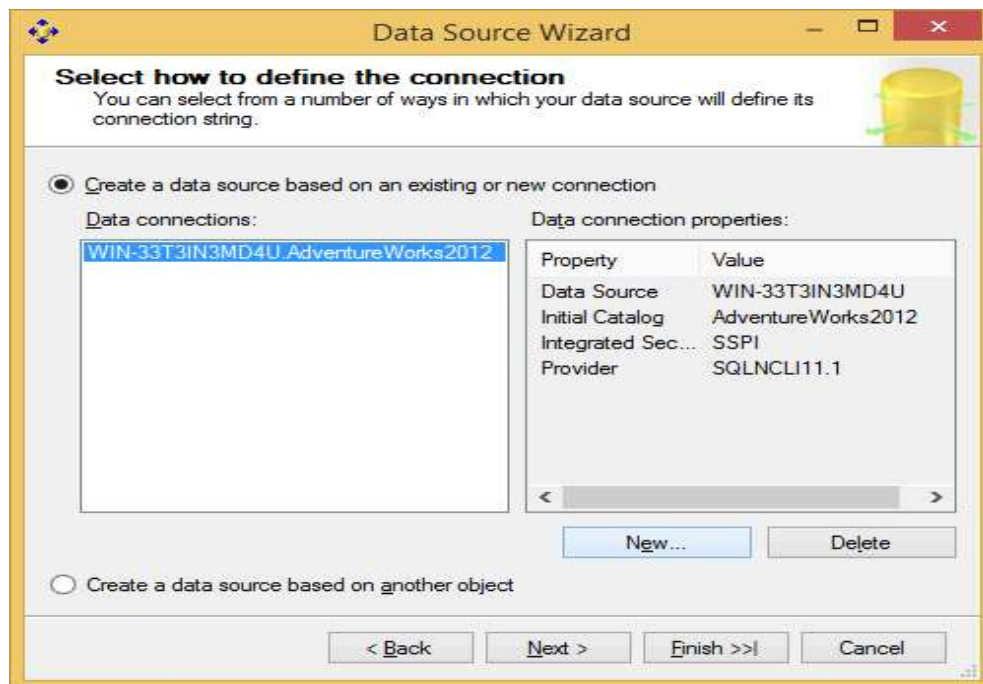
Right click on Data Sources in solution explorer à New Data Source



Data Source Wizard appears



Click on New



Select Server Name à select Use SQL Server Authentication à Select or enter a database name (Sales_DW)

Note : Password for sa : admin123 (as given during installation of SQL 2012 full version)

The screenshot shows the 'Connection Manager' dialog box. The 'Provider' is set to 'Native OLE DB\SQL Server Native Client 11.0'. Under 'Server name', 'WIN-33T3IN3MD4U' is selected. In the 'Log on to the server' section, 'Use SQL Server Authentication' is selected, with 'User name' set to 'sa' and 'Password' masked with dots. The 'Save my password' checkbox is unchecked. Under 'Connect to a database', 'Select or enter a database name:' is selected, and 'Sales_DW' is entered in the dropdown. The 'Attach a database file:' option is not selected. At the bottom, there are buttons for 'Test Connection', 'OK', 'Cancel', and 'Help'.

The screenshot shows the 'Connection Manager' dialog box after a successful test connection. The message 'Test connection succeeded.' is displayed in the center. At the bottom right, there is an 'OK' button.

- Click Next

Data Source Wizard

Select how to define the connection
You can select from a number of ways in which your data source will define its connection string.

☒ Create a data source based on an existing or new connection

Data connections:

WIN-33T3IN3MD4U.AdventureWorks2012
WIN-33T3IN3MD4U.Sales_DW.sa

Data connection properties:

Property	Value
Data Source	WIN-33T3IN3MD4U
Initial Catalog	Sales_DW
Provider	SQLNCLI11.1
User ID	sa

☐ Create a data source based on another object

< Back Next > Finish >>| Cancel

Select Inherit à Next

Data Source Wizard

Impersonation Information
You can define what Windows credentials Analysis Services will use to connect to the data source.

☐ Use a specific Windows user name and password

User name:

Password:

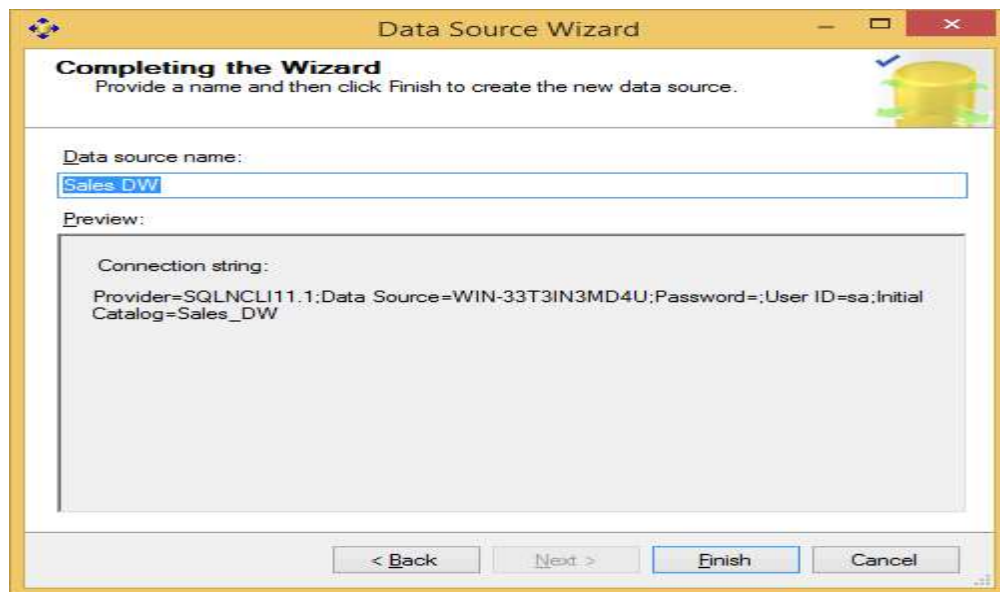
☐ Use the service account

☐ Use the credentials of the current user

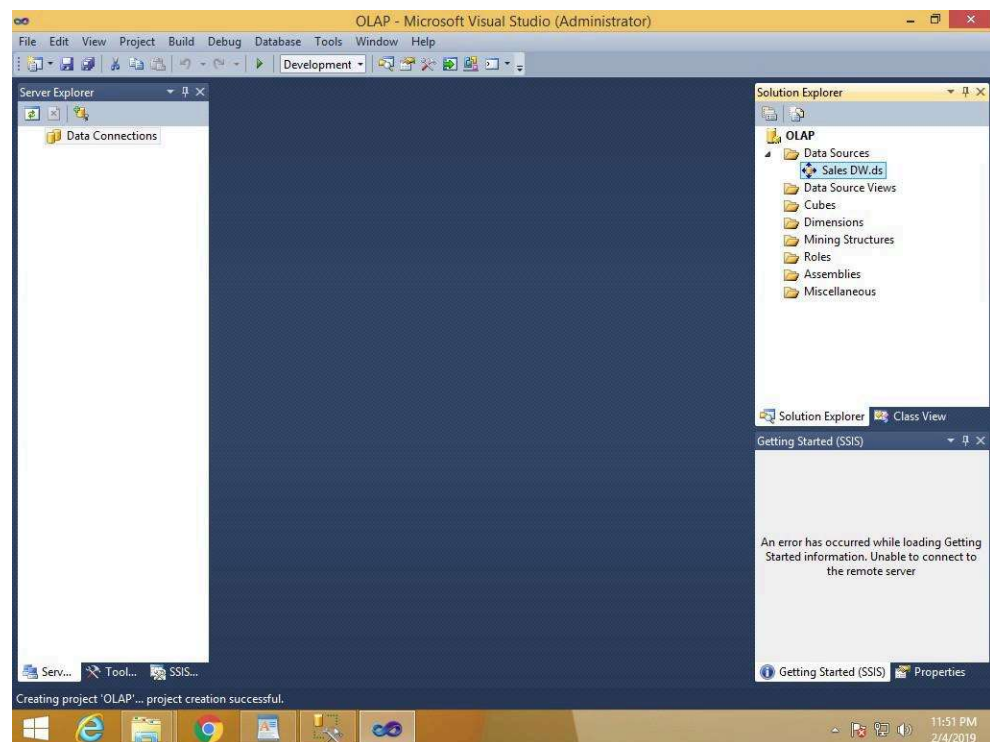
☒ Inherit

< Back Next > Finish >>| Cancel

- Click Finish

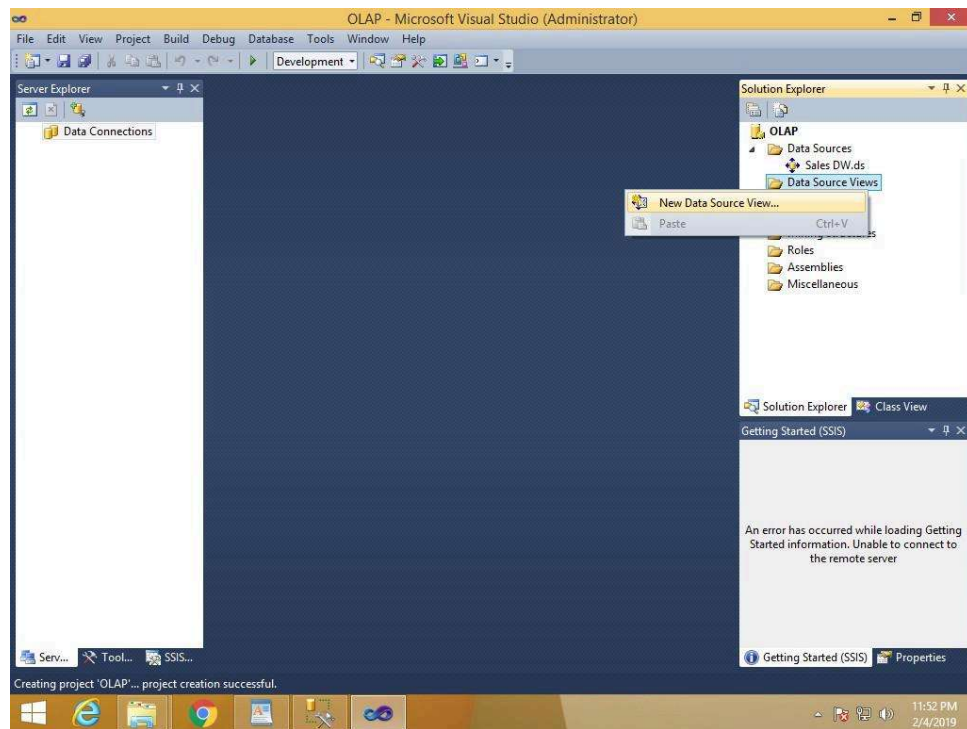


- Sales_DW.ds gets created under Data Sources in Solution Explorer

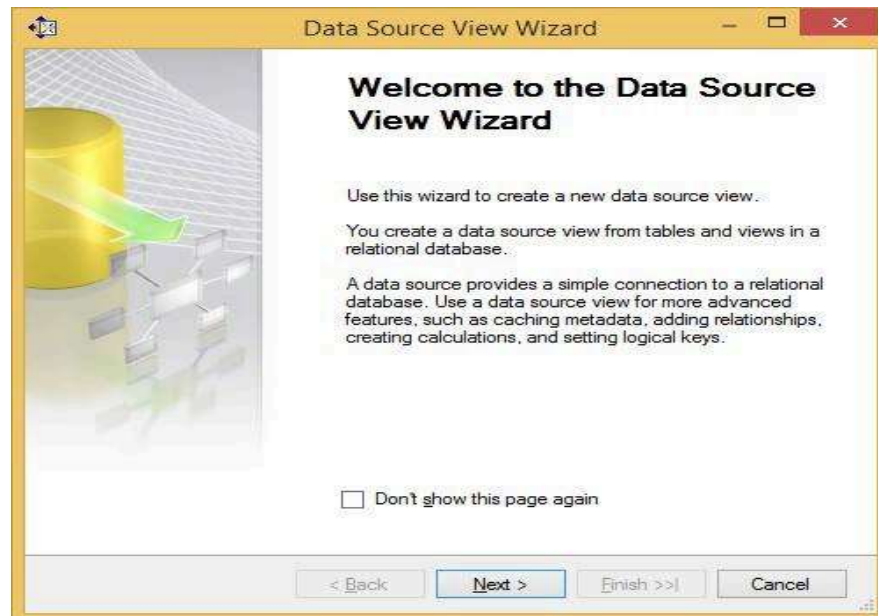


Step 3: Creating New Data Source View

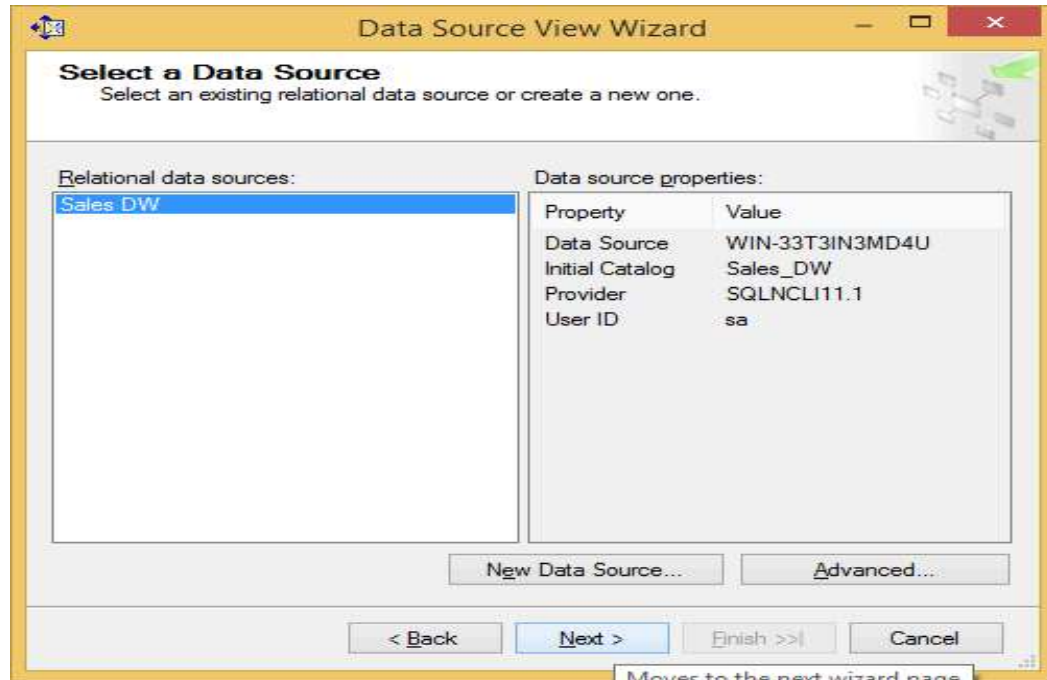
In Solution explorer right click on Data Source View à Select New Data Source View




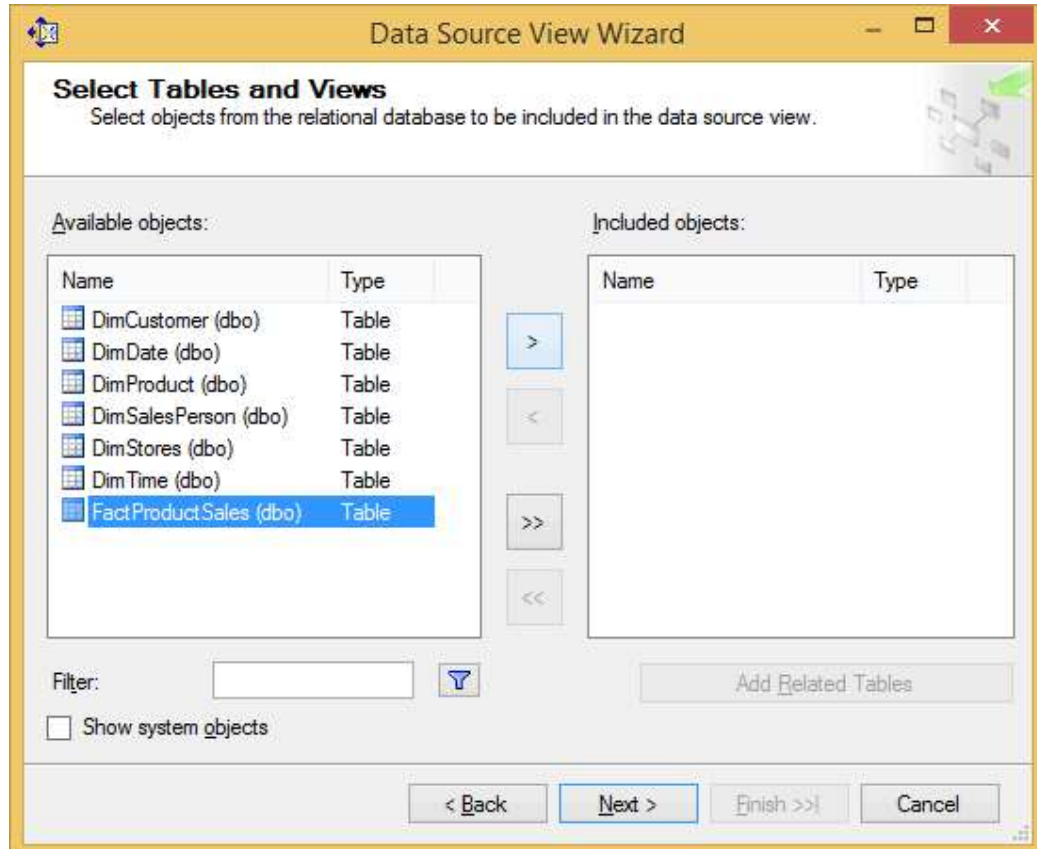
- Click Next

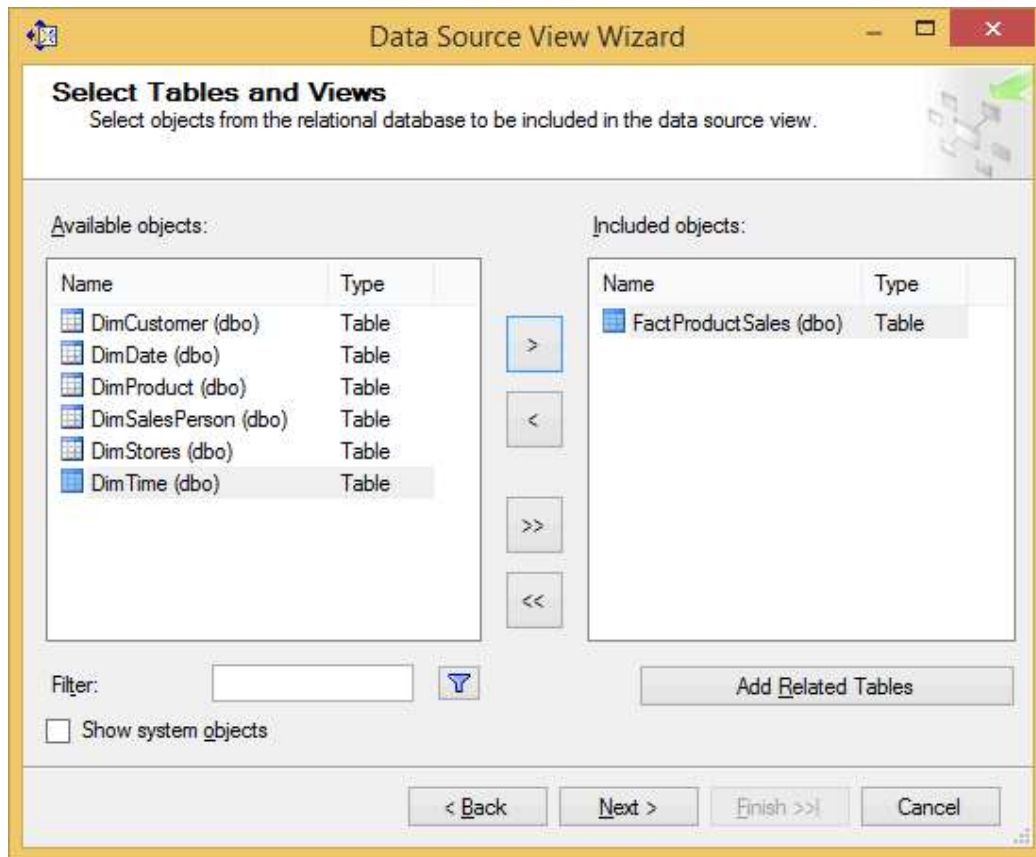


- Click Next

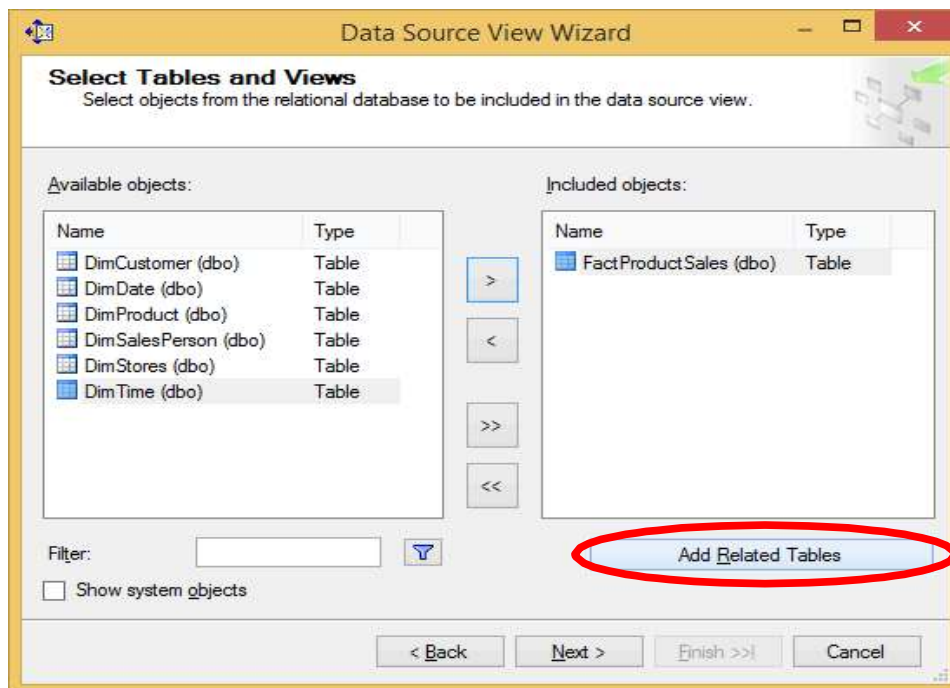


- Select FactProductSales(dbo) from Available objects and put in Includes Objects by clicking on 

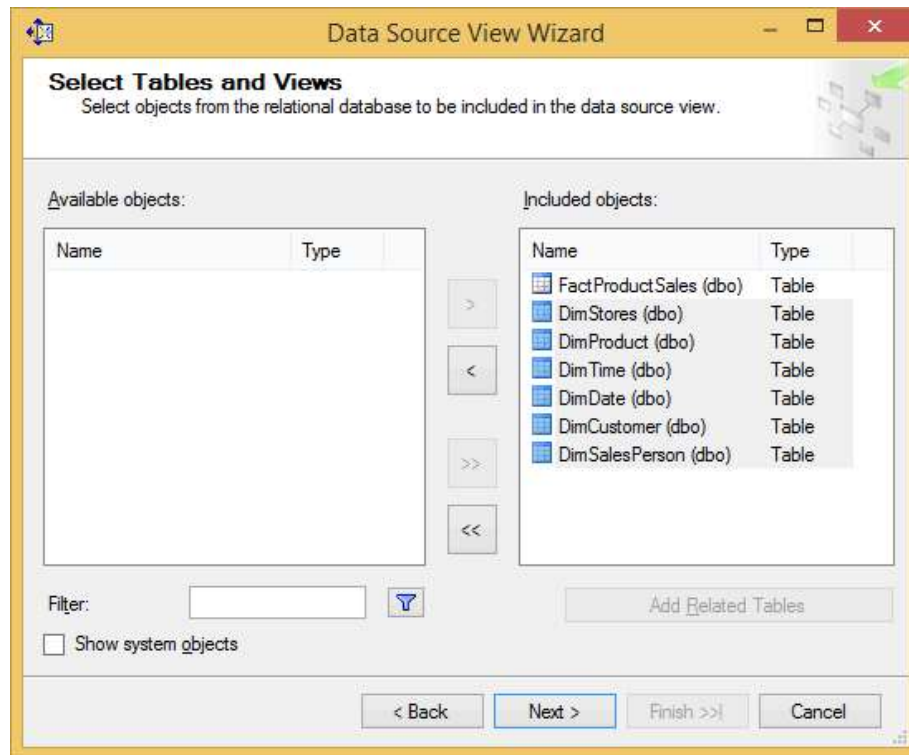




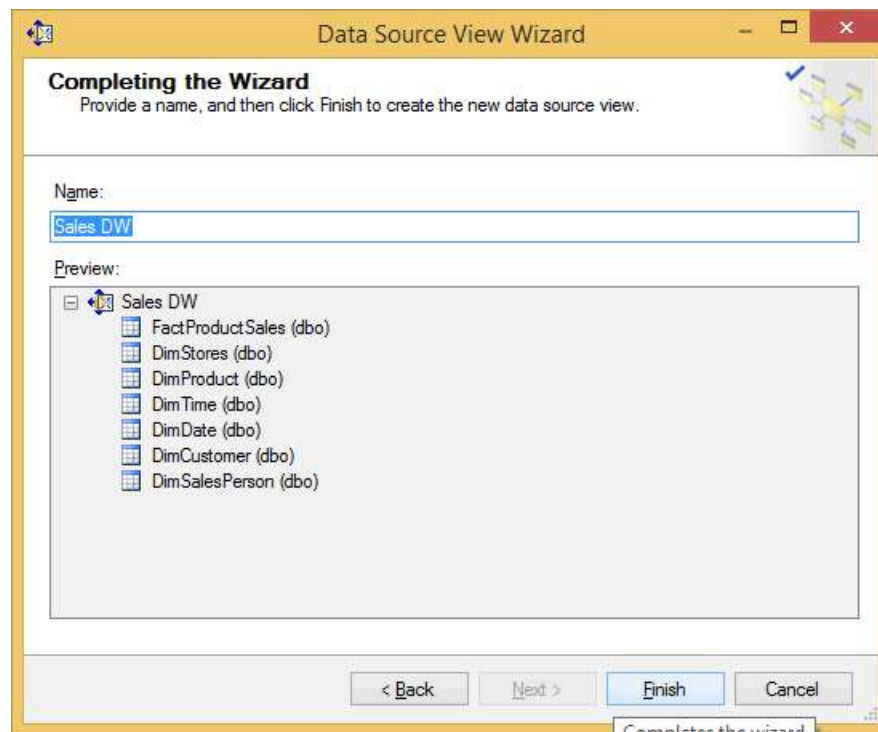
- Click on Add Related Tables



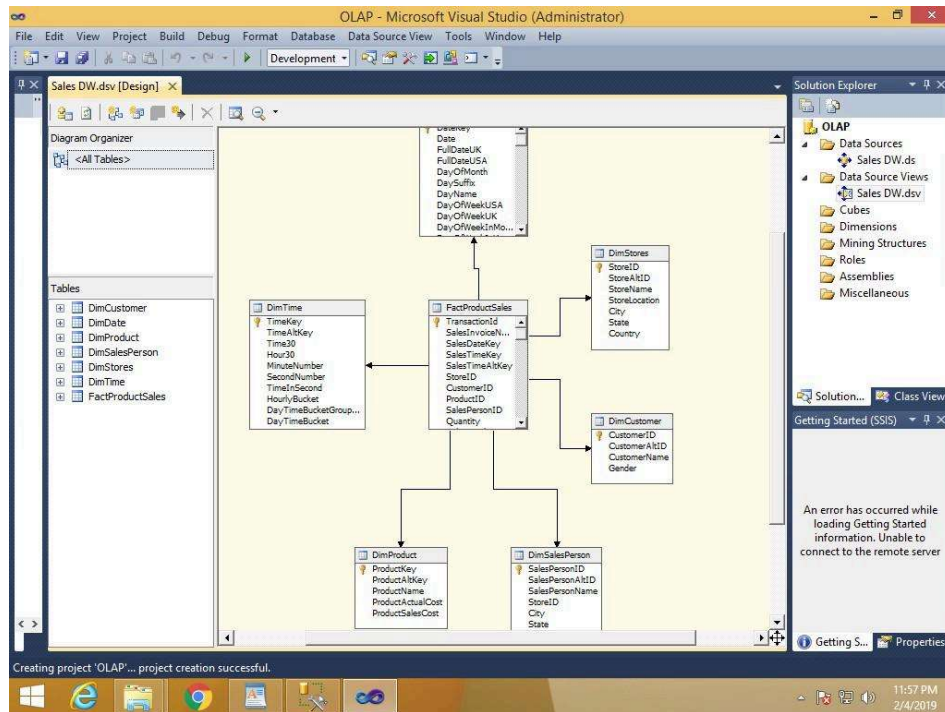
- Click Next



- Click Finish

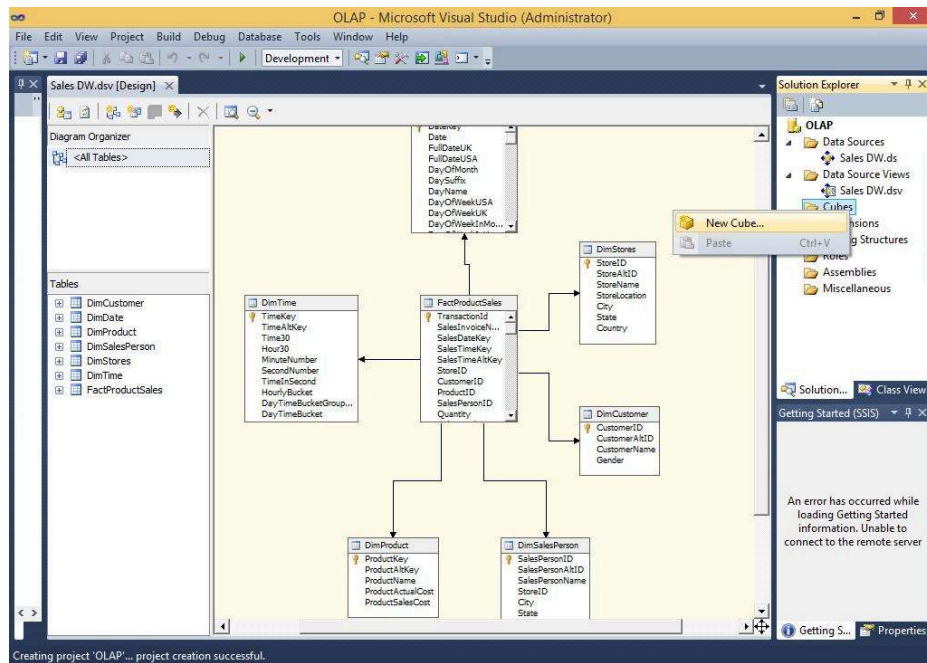


- Sales DW.dsv appears in Data Source Views in Solution Explorer.



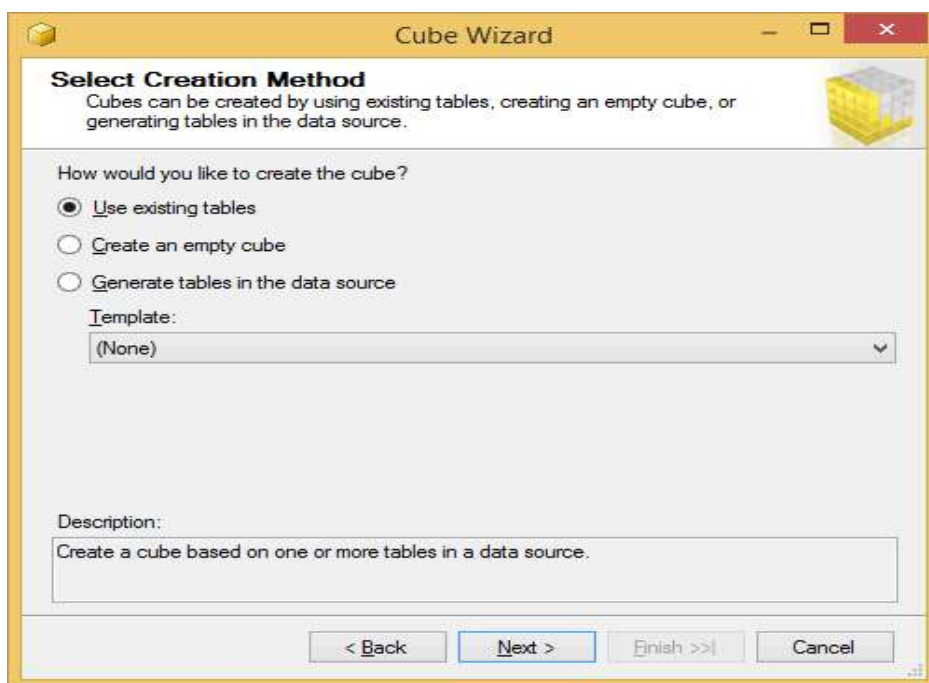
Step 4: Creating new cube

Right click on Cubes à New Cube



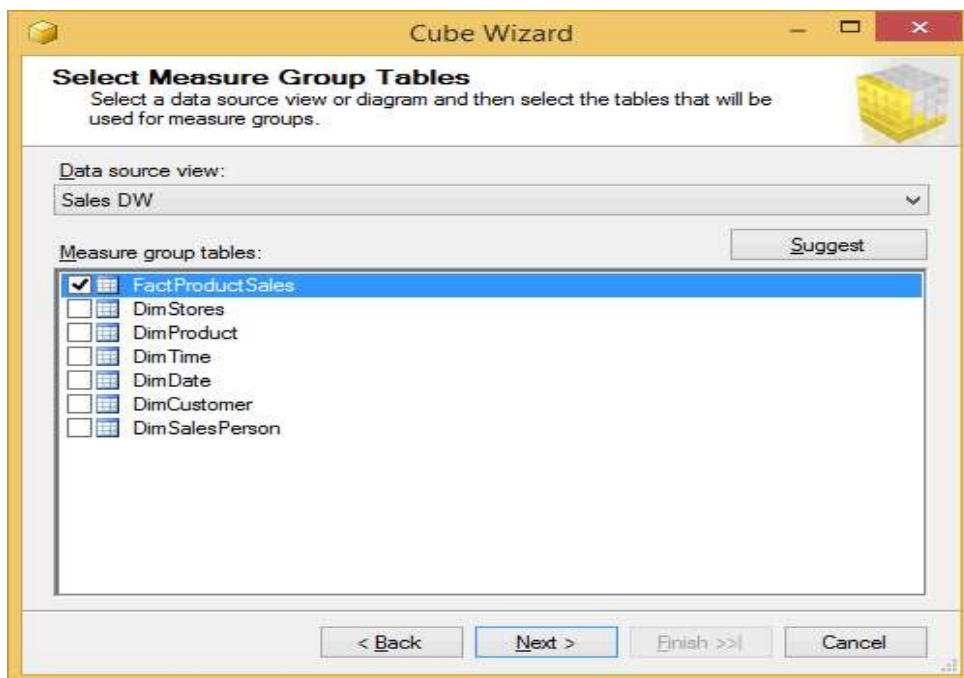


- Select Use existing tables in Select Creation Method à

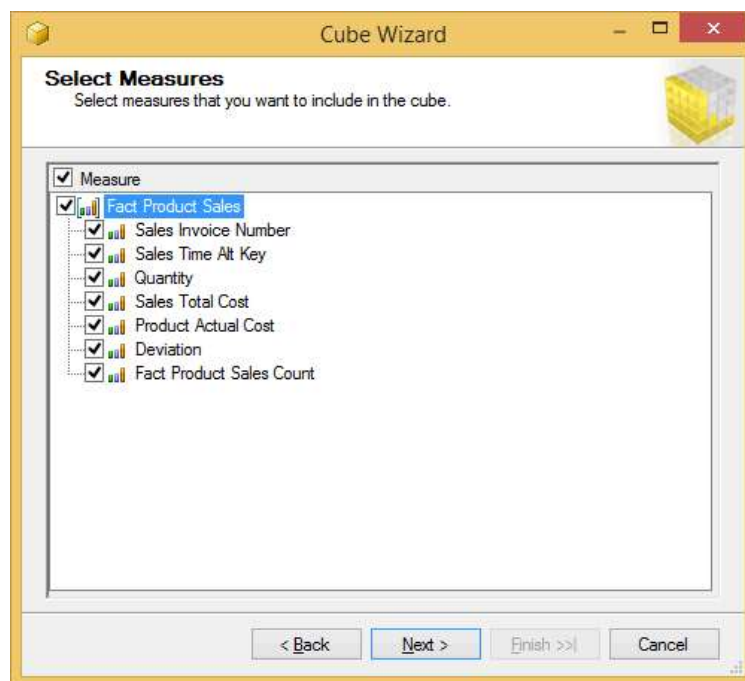


Next

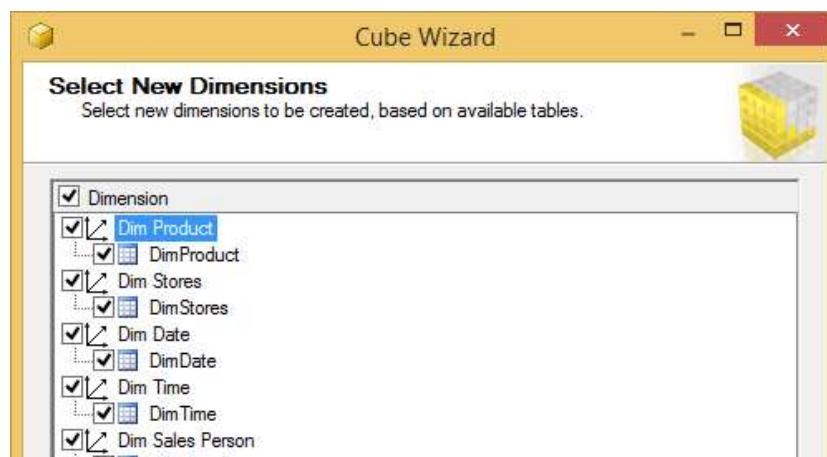
- In Select Measure Group Tables à Select Fact Product Sales à Click Next



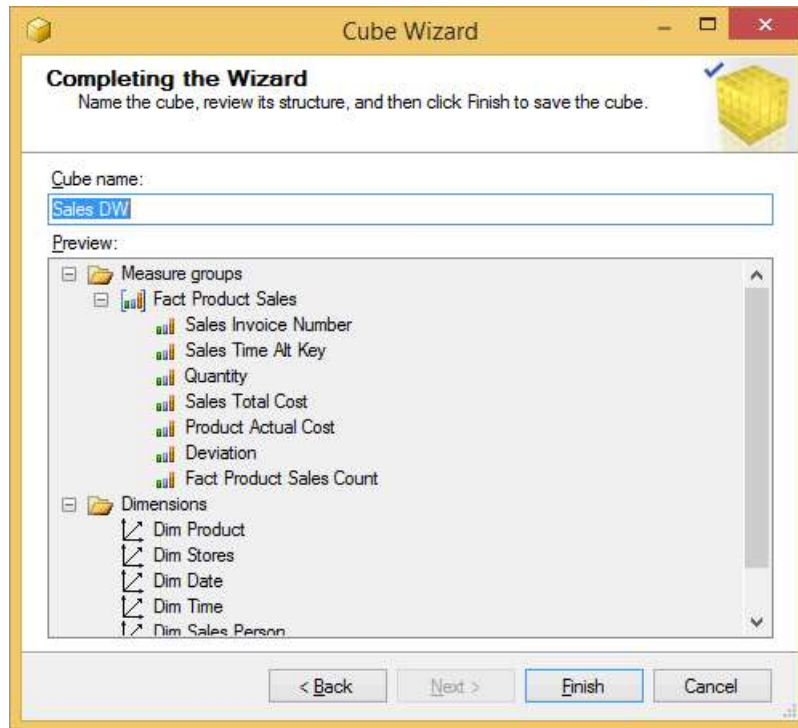
- In Select Measures à check all measures à Next



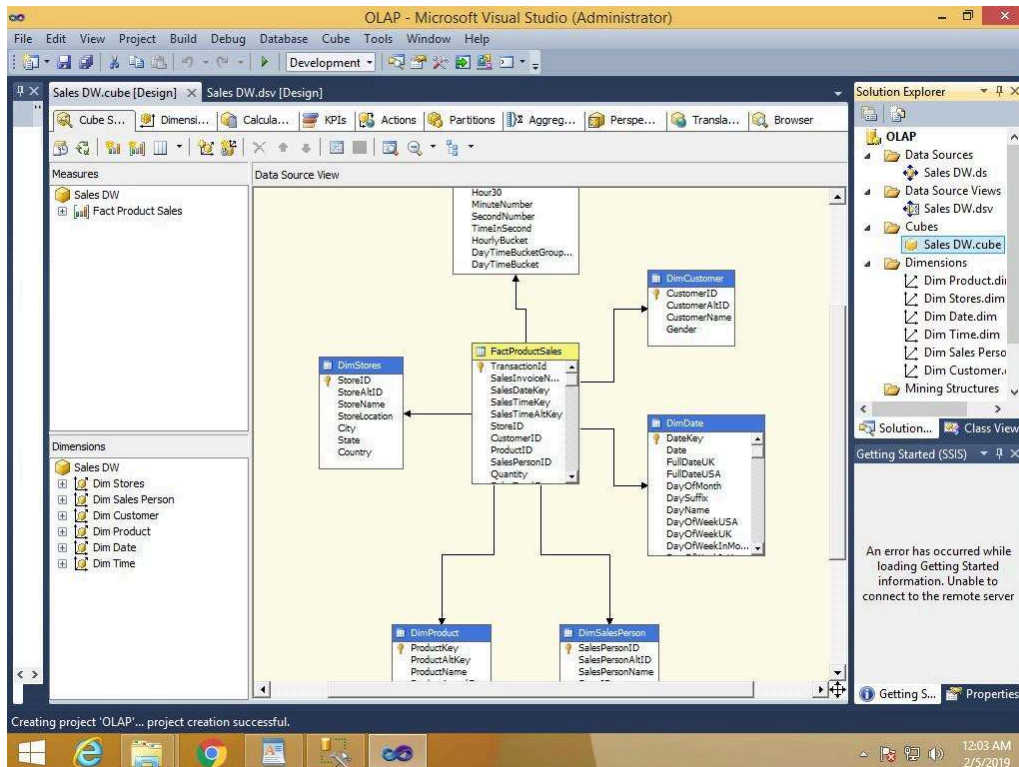
- In Select New Dimensions à Check all Dimensions à Next



- Click on Finish

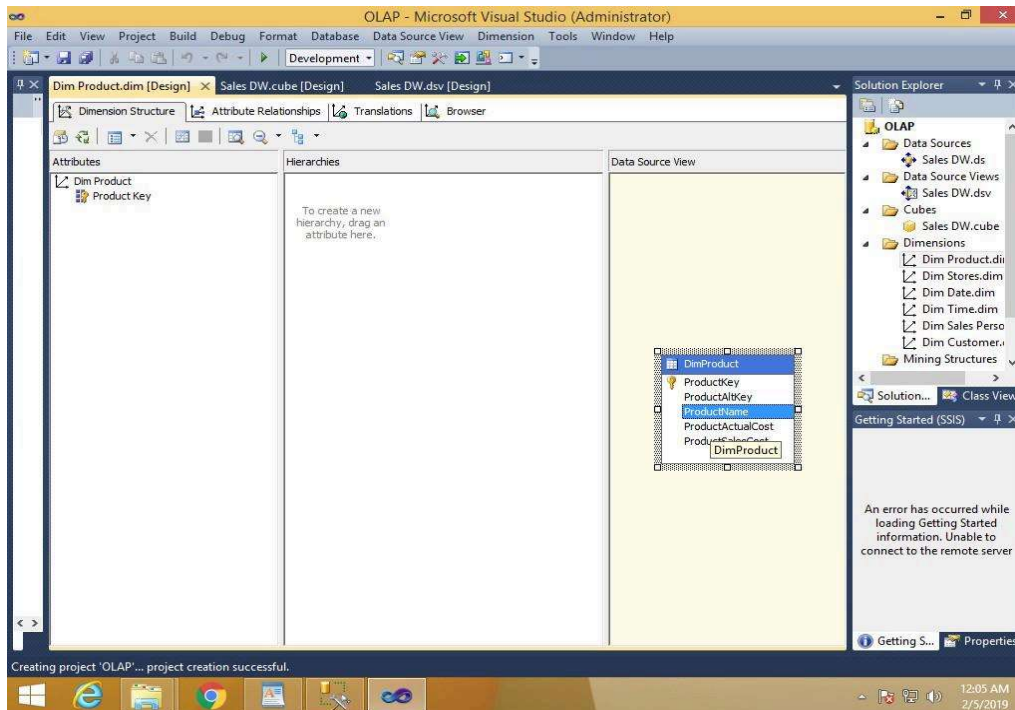


Sales_DW.cube is created

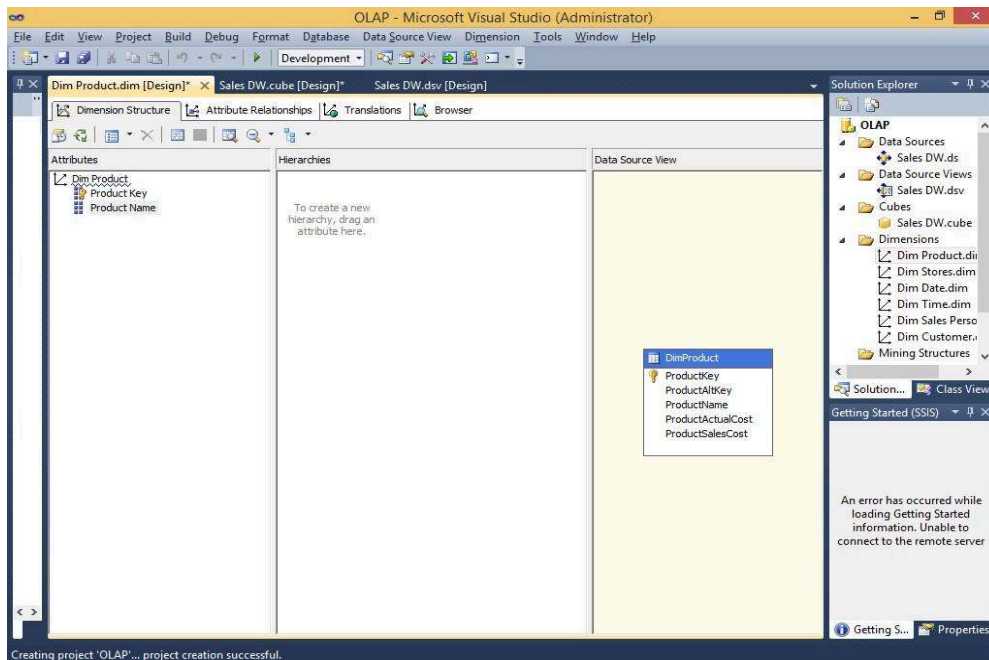


Step 5: Dimension Modification

- In dimension tab à Double Click Dim Product.dim



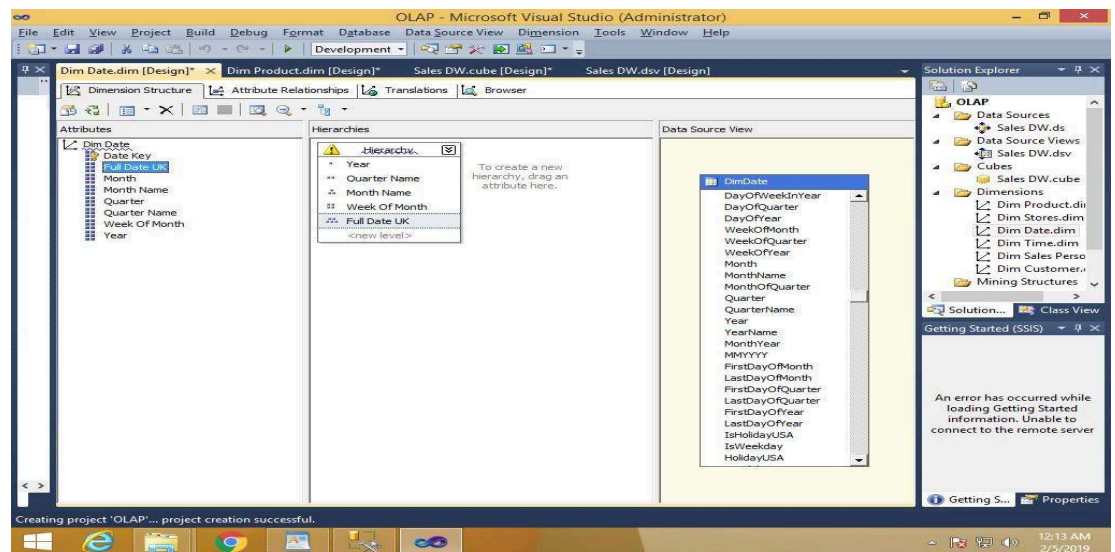
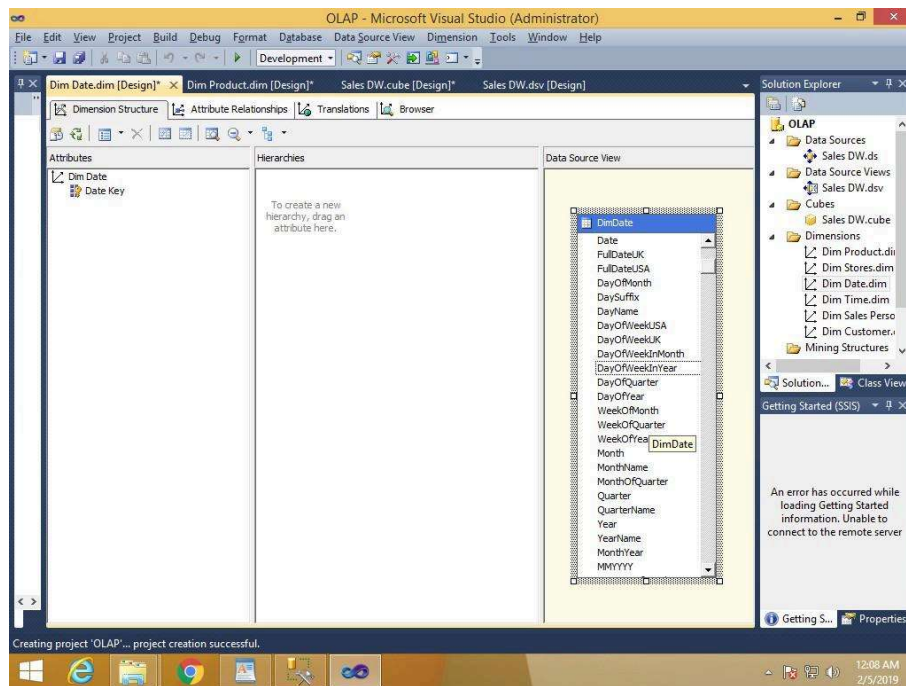
- Drag and Drop Product Name from Table in Data Source View and Add in Attribute Pane at left side



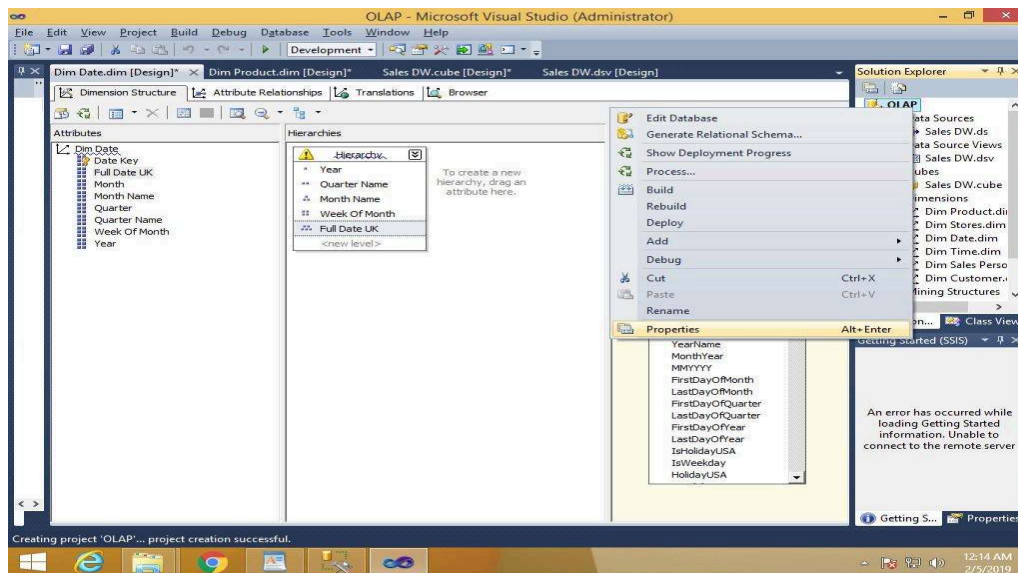
Step 6: Creating Attribute Hierarchy in Date Dimension

- 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

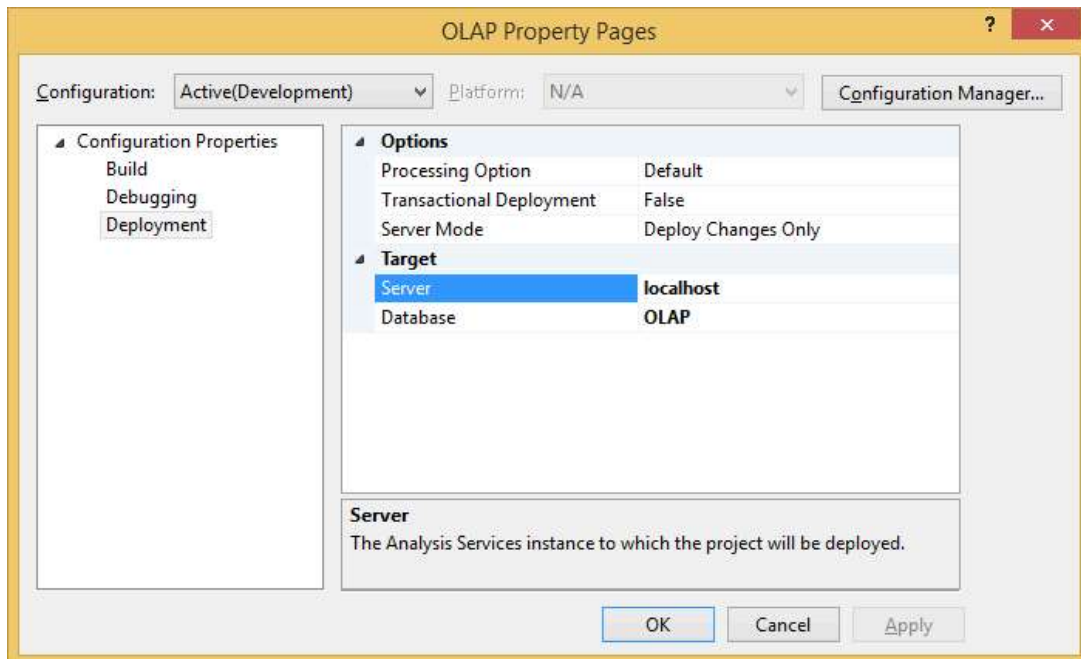
(Year, Quarter Name, Month Name, Week of the Month, Full Date UK)



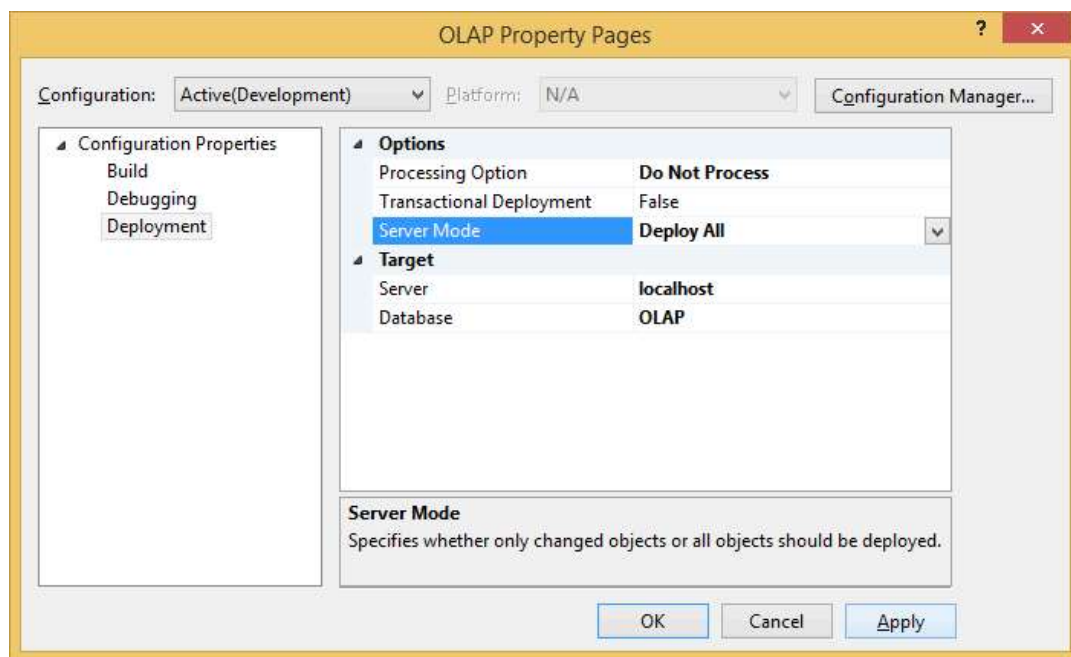
Step 7: Deploy Cube



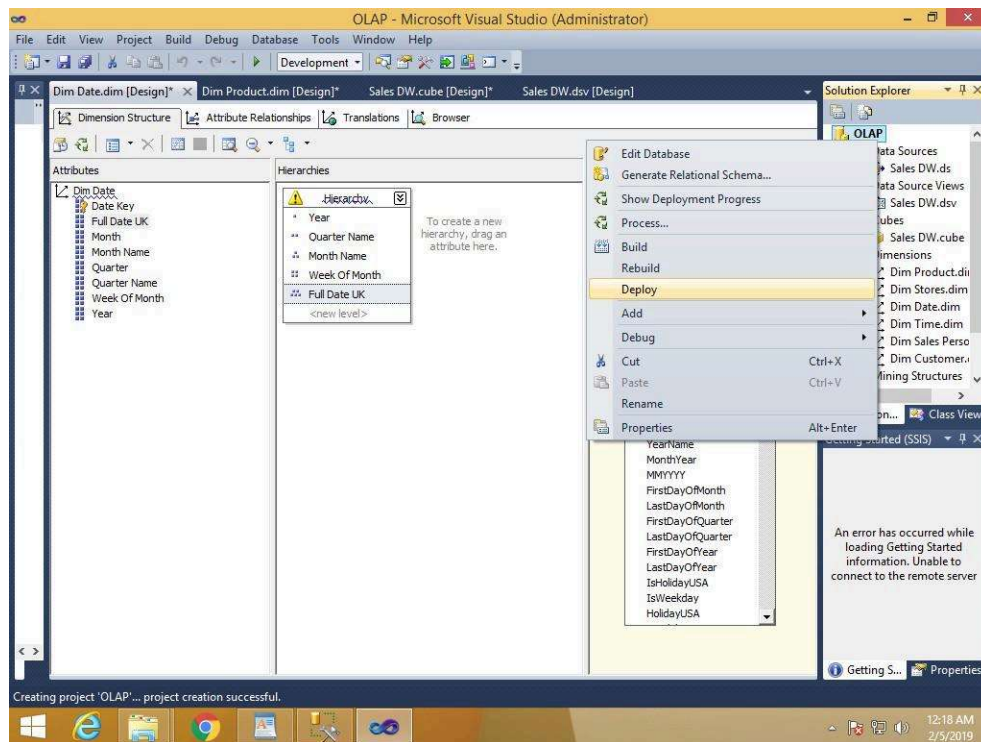
- Right click on Project name à Properties



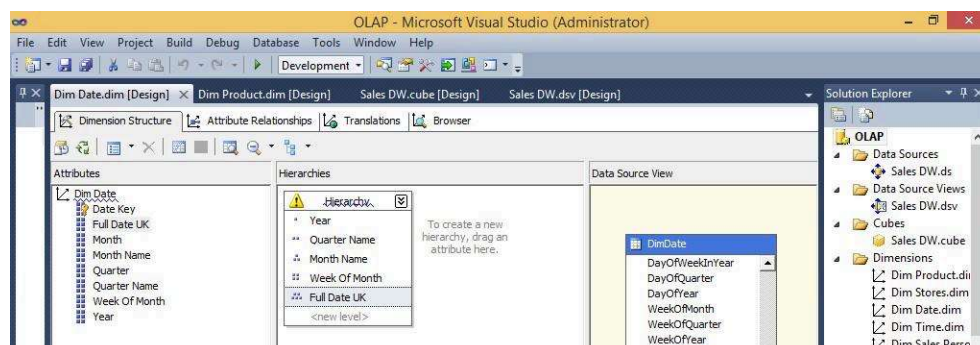
- Do following changes and click on Apply & ok



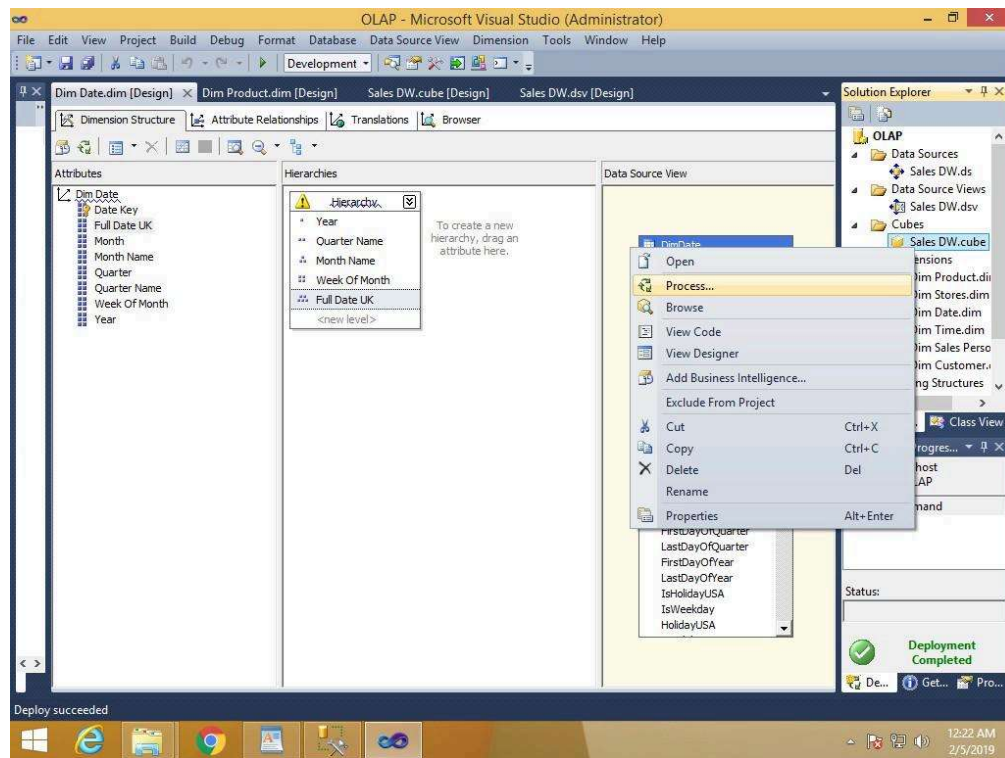
- Right click on project name à Deploy



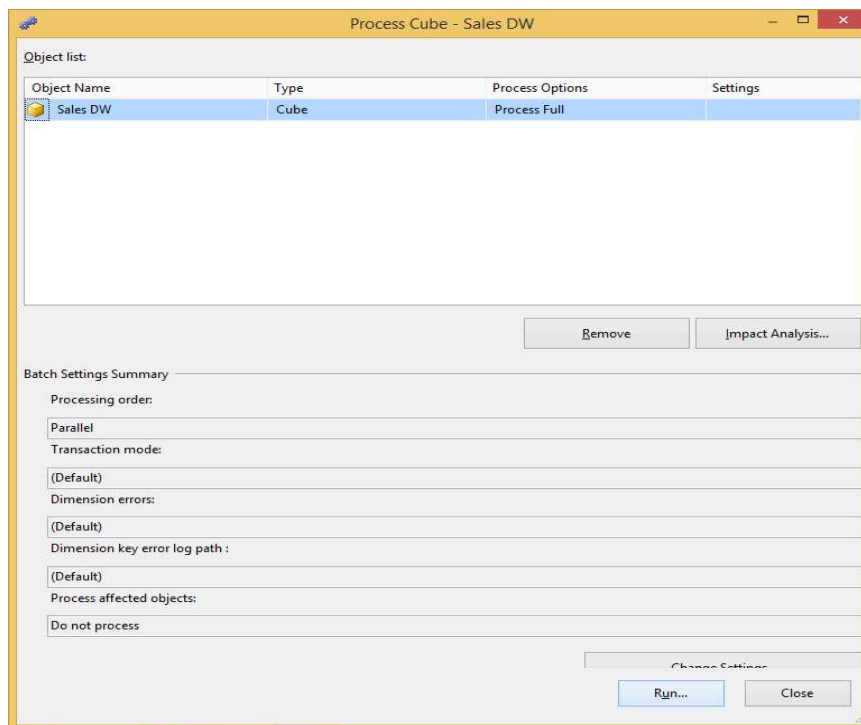
- Deployment successful



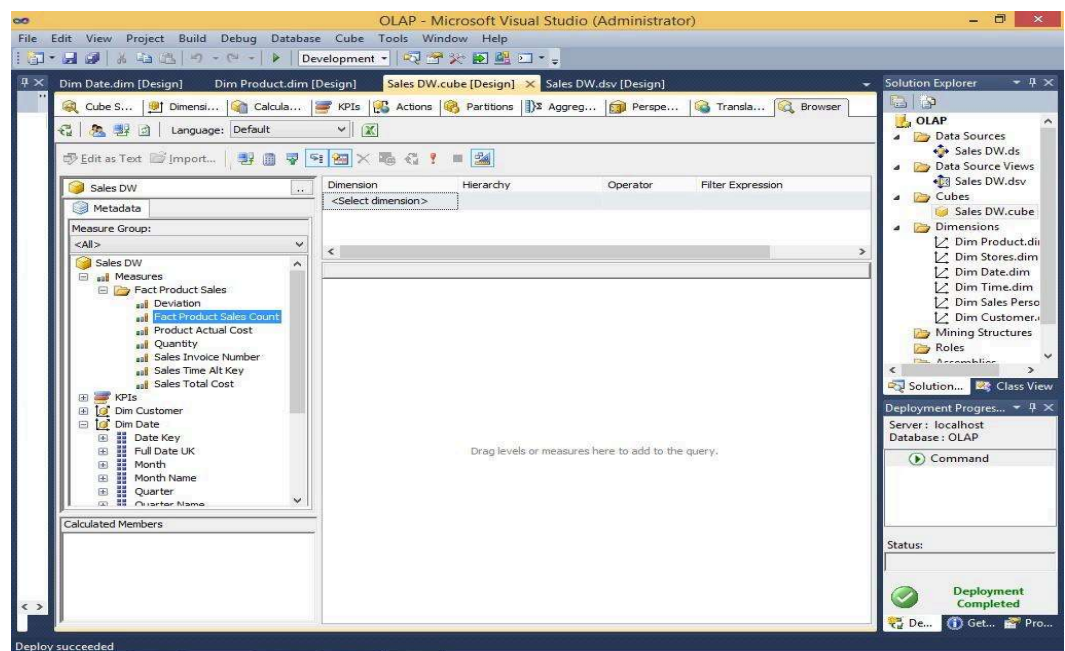
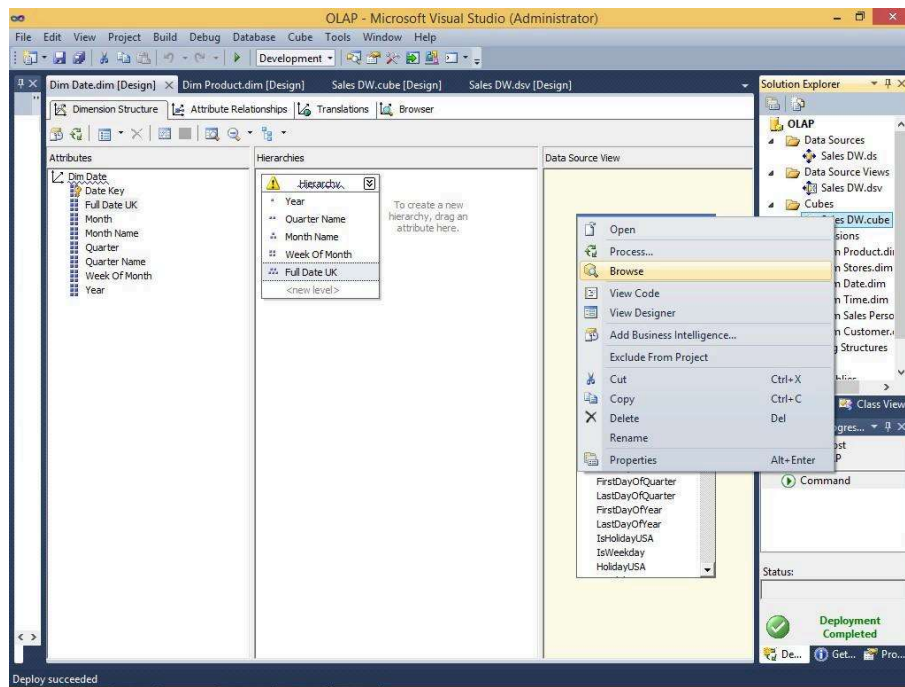
- To process cube right click on Sales_DW.cube à Process



- Click run



- Browse the cube for analysis in solution explorer



Conclusion: - We are able to Create the cube with suitable dimension and fact tables based on ROLAP, MOLAP and HOLAP model.