

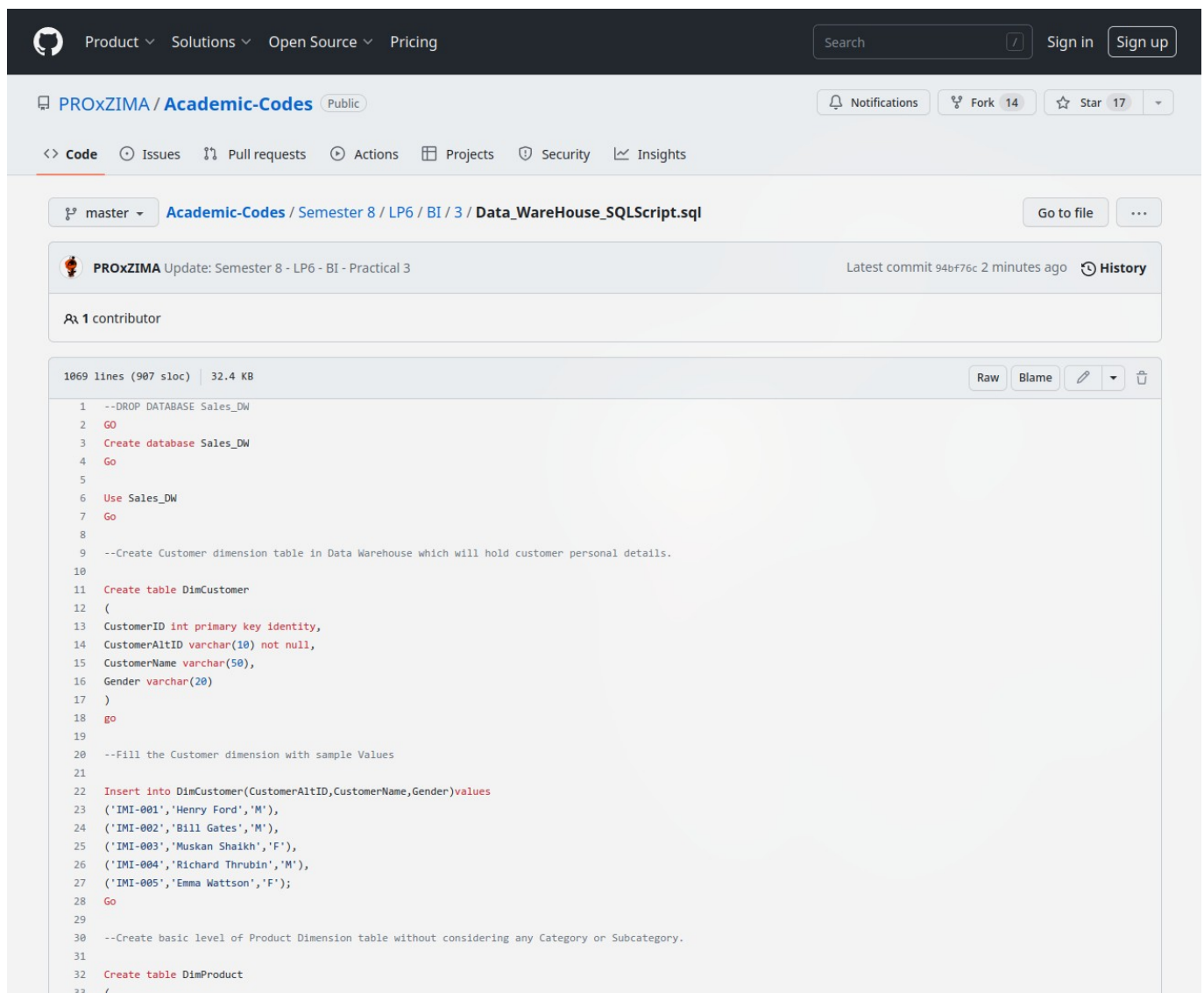
## PRACTICAL 3

**Create the cube with suitable dimension and fact tables based on OLAP**

### Step 1: Creating Data Warehouse

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

**Download "Data\_WareHouse\_SQLScript.sql" script for creation of Sales Data Warehouse from [here](#) .**



The screenshot shows a GitHub repository page for 'Academic-Codes' by 'PROxZIMA'. The repository is public and has 14 forks and 17 stars. The file 'Data\_WareHouse\_SQLScript.sql' is selected, showing its content. The script is a T-SQL script for creating a data warehouse. It starts with dropping the database 'Sales\_DW' and creating it again. Then it uses 'Sales\_DW' and creates a table 'DimCustomer' with columns 'CustomerID', 'CustomerAltID', 'CustomerName', and 'Gender'. It then inserts sample data into 'DimCustomer'. Finally, it creates a table 'DimProduct'.

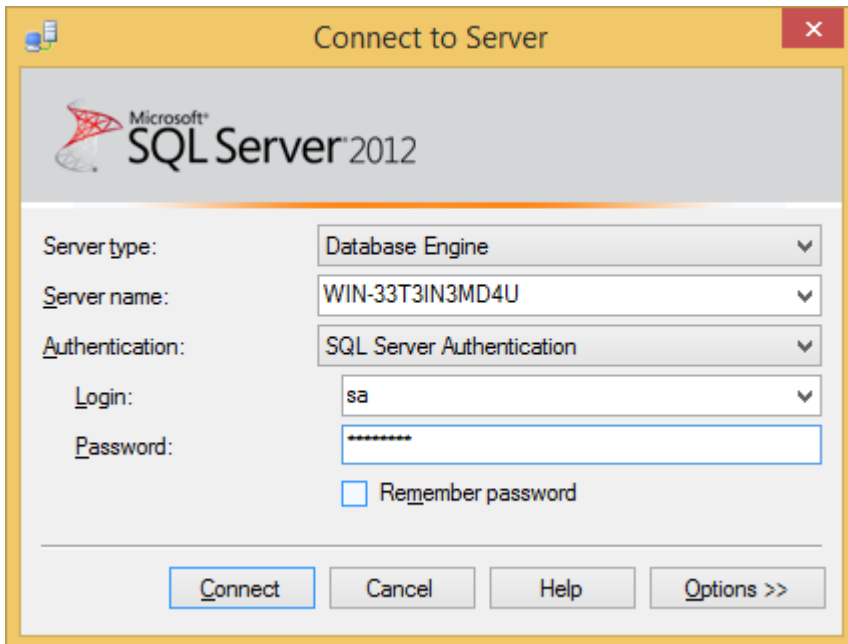
```
1 --DROP DATABASE Sales_DW
2 GO
3 Create database Sales_DW
4 Go
5
6 Use Sales_DW
7 Go
8
9 --Create Customer dimension table in Data Warehouse which will hold customer personal details.
10
11 Create table DimCustomer
12 (
13 CustomerID int primary key identity,
14 CustomerAltID varchar(10) not null,
15 CustomerName varchar(50),
16 Gender varchar(20)
17 )
18 go
19
20 --Fill the Customer dimension with sample Values
21
22 Insert into DimCustomer(CustomerAltID, CustomerName, Gender) values
23 ('IMI-001', 'Henry Ford', 'M'),
24 ('IMI-002', 'Bill Gates', 'M'),
25 ('IMI-003', 'Muskan Shaikh', 'F'),
26 ('IMI-004', 'Richard Thruabin', 'M'),
27 ('IMI-005', 'Emma Wattson', 'F');
28 Go
29
30 --Create basic level of Product Dimension table without considering any Category or Subcategory.
31
32 Create table DimProduct
33 (
```

**After downloading extract file in folder.**

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

**1. Open SQL Server Management Studio 2012**

**2. Connect Database Engine**



**Password for sa : admin123 (as given during installation)**

**Click Connect.**

**3. Open New Query editor**

**4. Copy paste Scripts given below in various steps in new query editor window one by one**

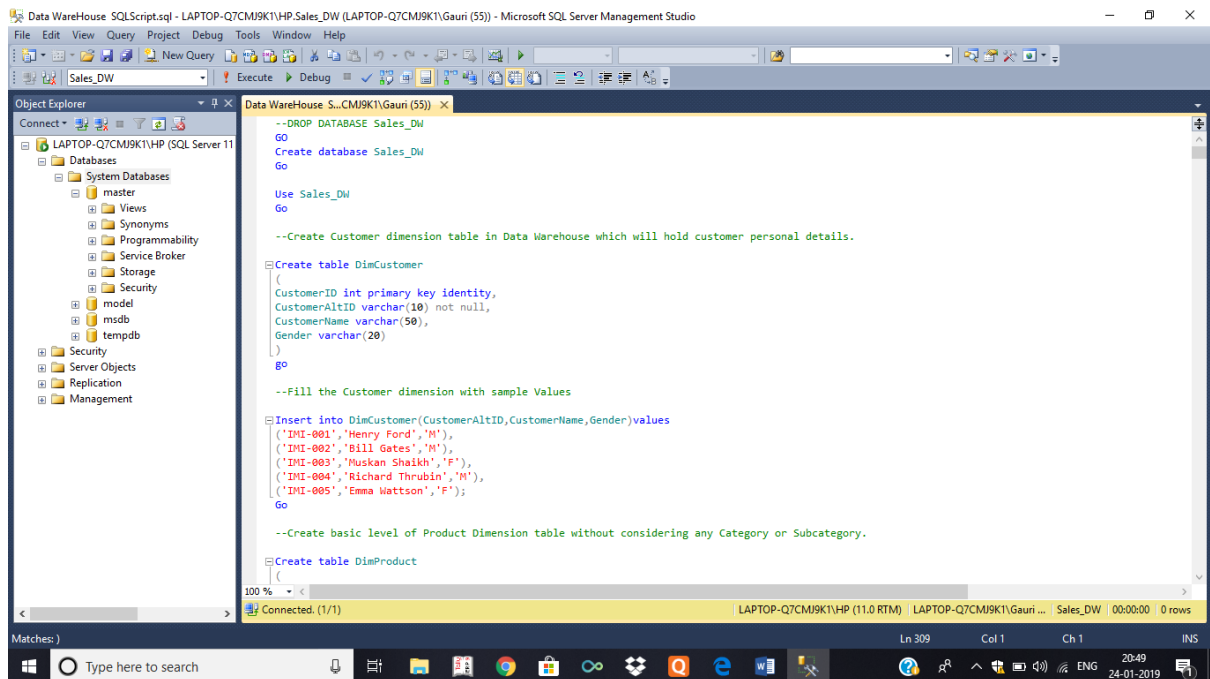
**5. To run the given SQL Script, press F5**

**6. It will create and populate "Sales\_DW" database on your SQL Server**

**OR**

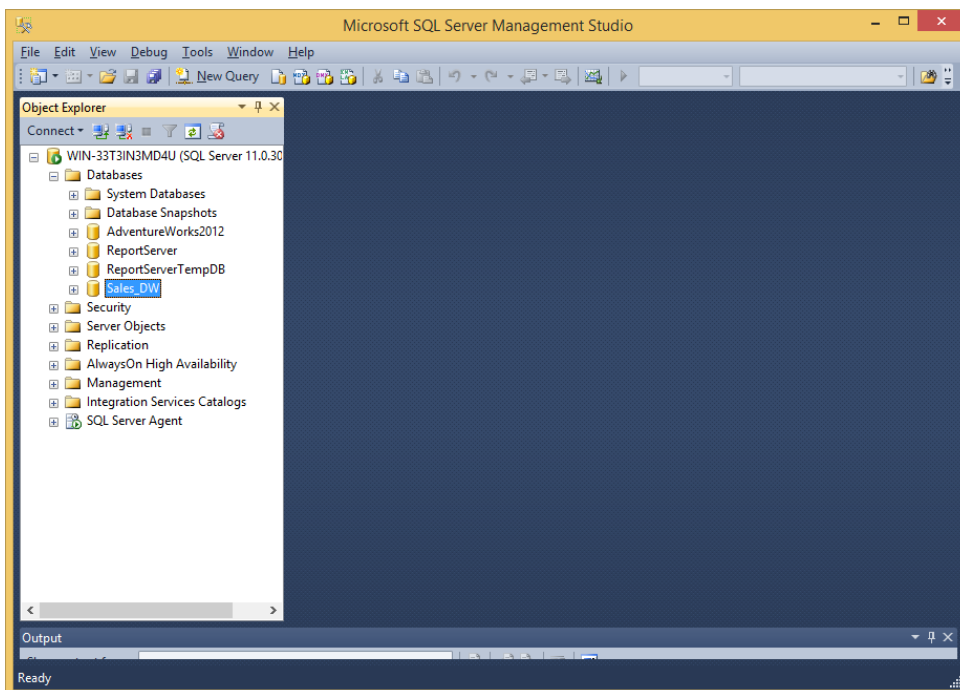
**1. Go to the extracted sql file and double click on it.**

**2. New Sql Query Editor will be opened containing Sales\_DW Database.**



**3. Click on execute or press F5 by selecting query one by one or directly click on Execute.**

**4. After completing execution save and close SQL Server Management studio & Reopen to see Sales\_DW in Databases Tab.**

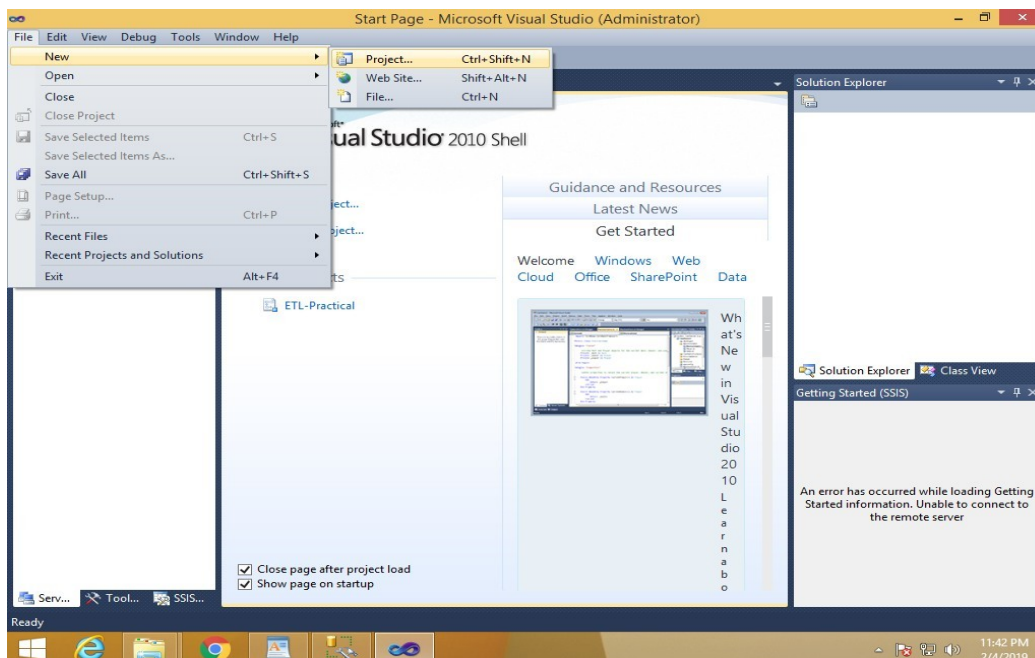


## Step 2: Start SSDT environment and create New Data Source

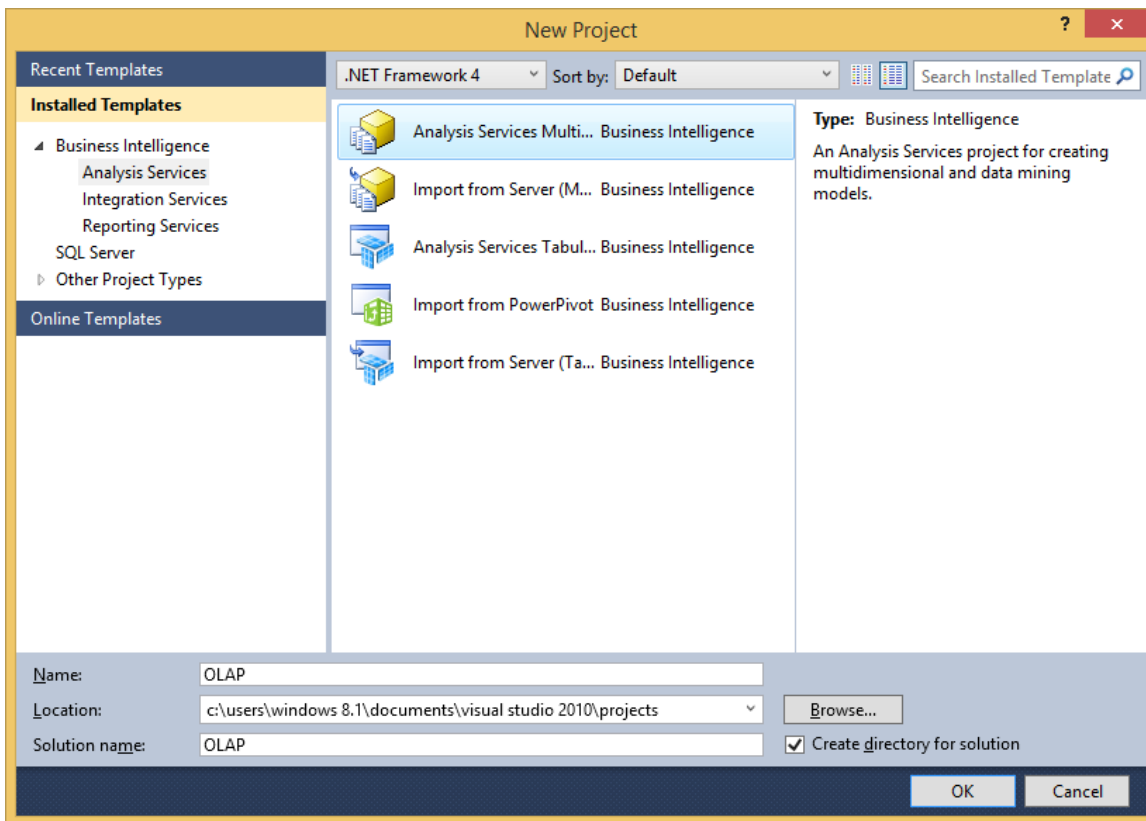
Go to Sql Server Data Tools --> Right click and run as administrator



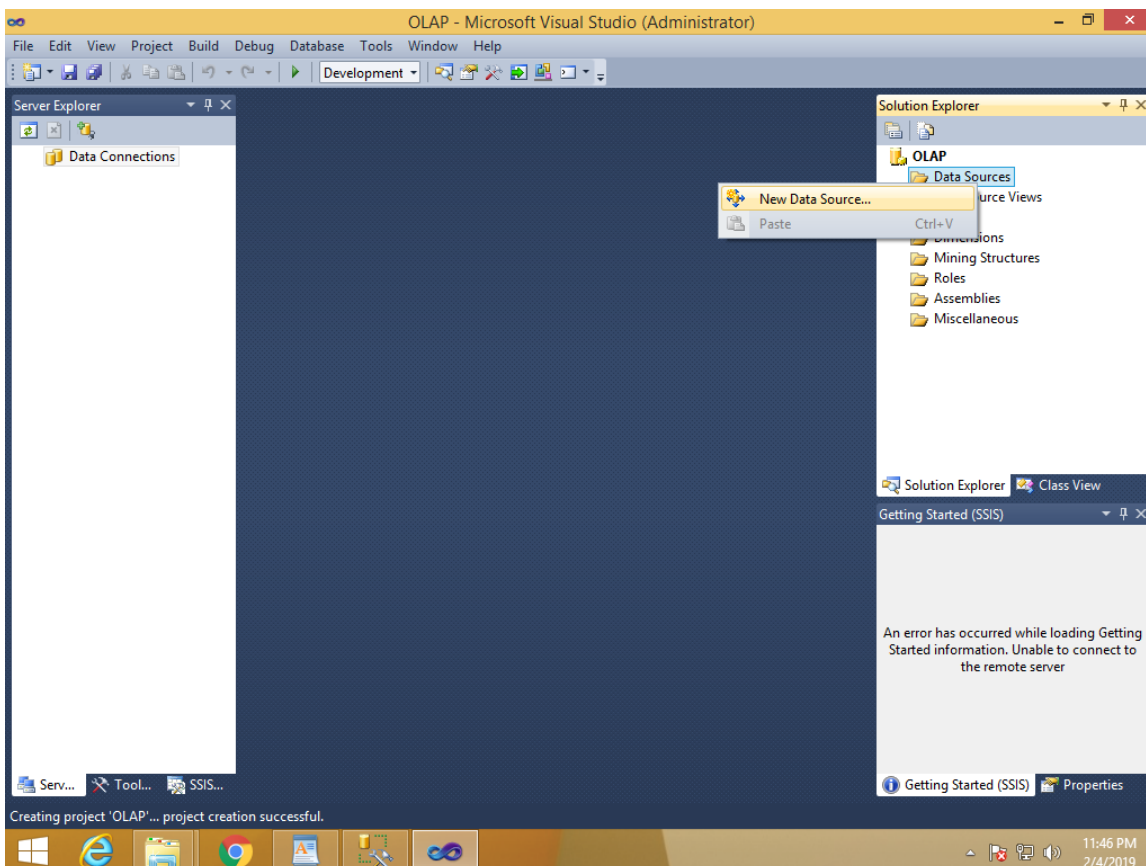
Click on File → New → Project



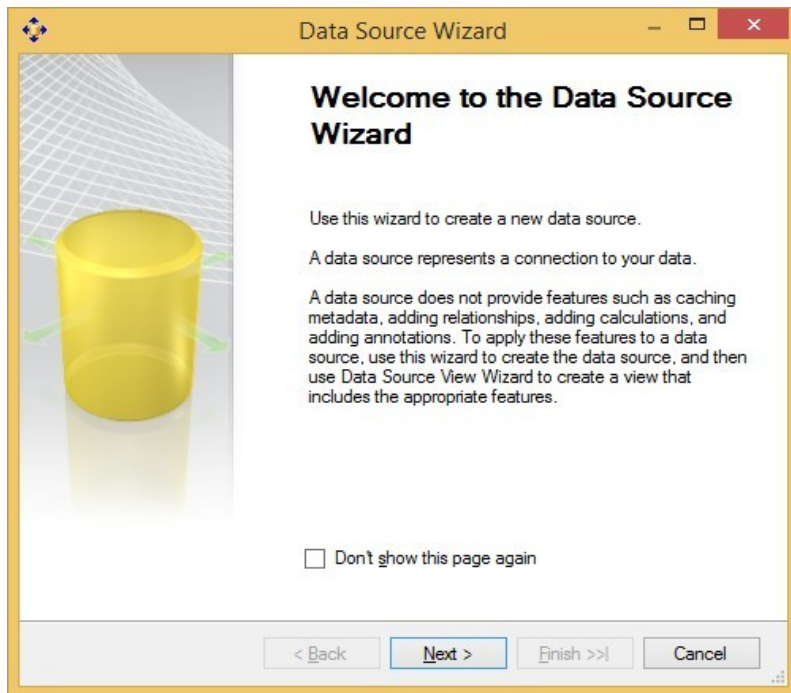
**In Business Intelligence → Analysis Services Multidimensional and Data Mining models → appropriate project name → click OK**



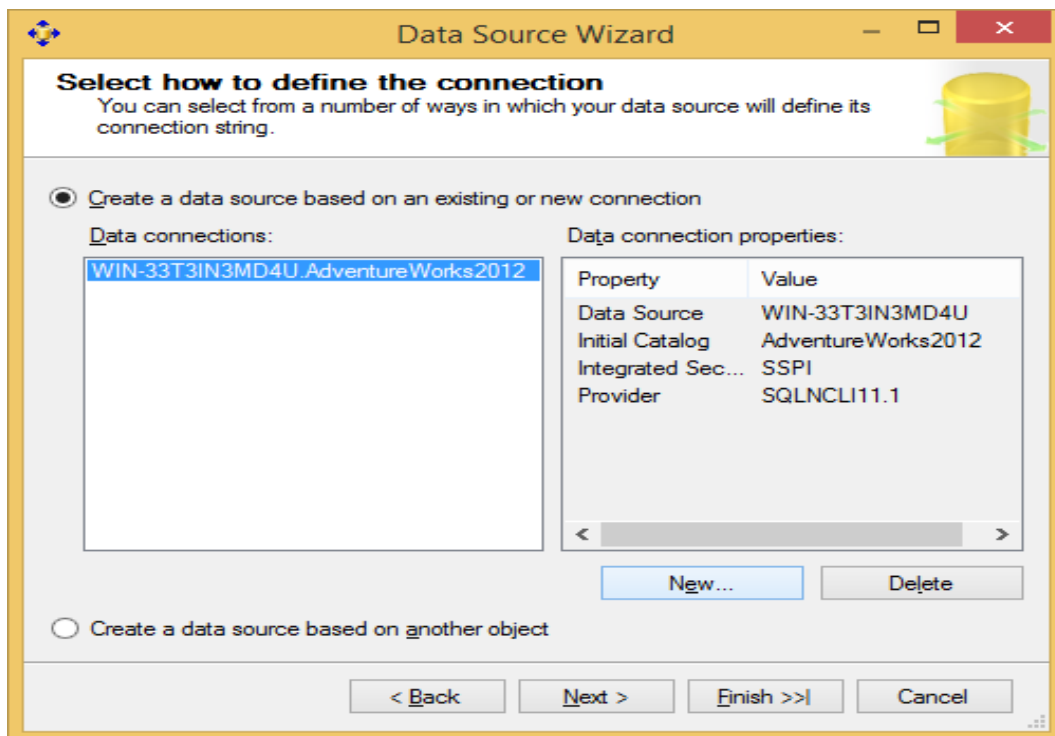
**Right click on Data Sources in solution explorer → New Data Source**



## Data Source Wizard appears

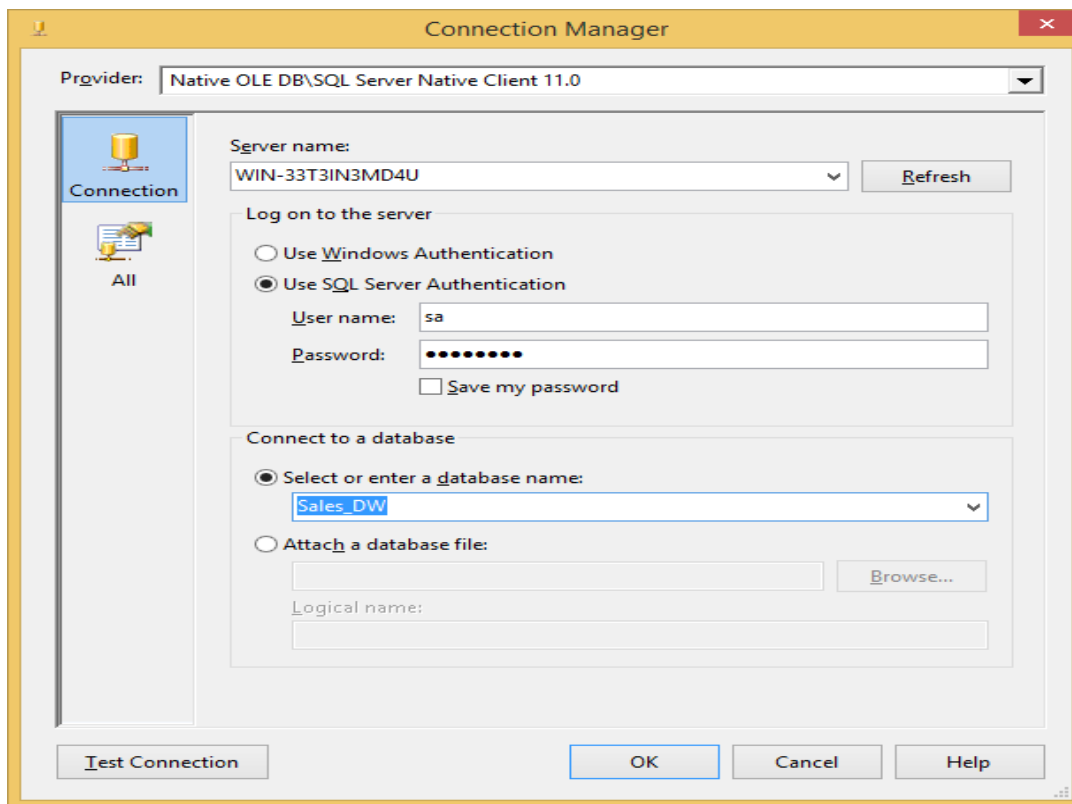


## Click on New

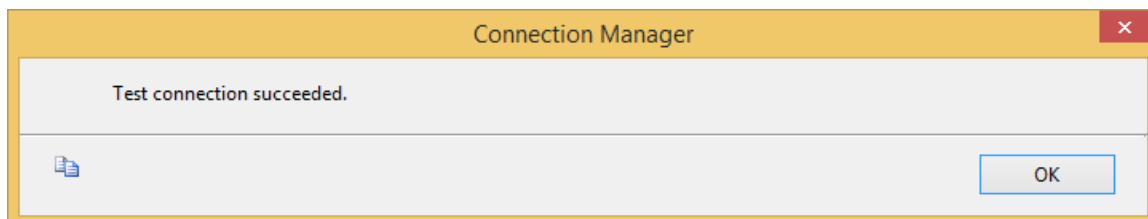


**Select Server Name → select Use SQL Server Authentication → Select or enter a database name (Sales\_DW)**

**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 'Log on to the server', 'Use SQL Server Authentication' is selected. The 'User name' is 'sa' and the 'Password' is 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 'Test Connection' button is visible at the bottom left, along with 'OK', 'Cancel', and 'Help' buttons.



The screenshot shows the 'Connection Manager' dialog box after a successful test connection. A message box at the top says 'Test connection succeeded.' The 'OK' button is visible at the bottom right.

**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

## Select Inherit → 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:

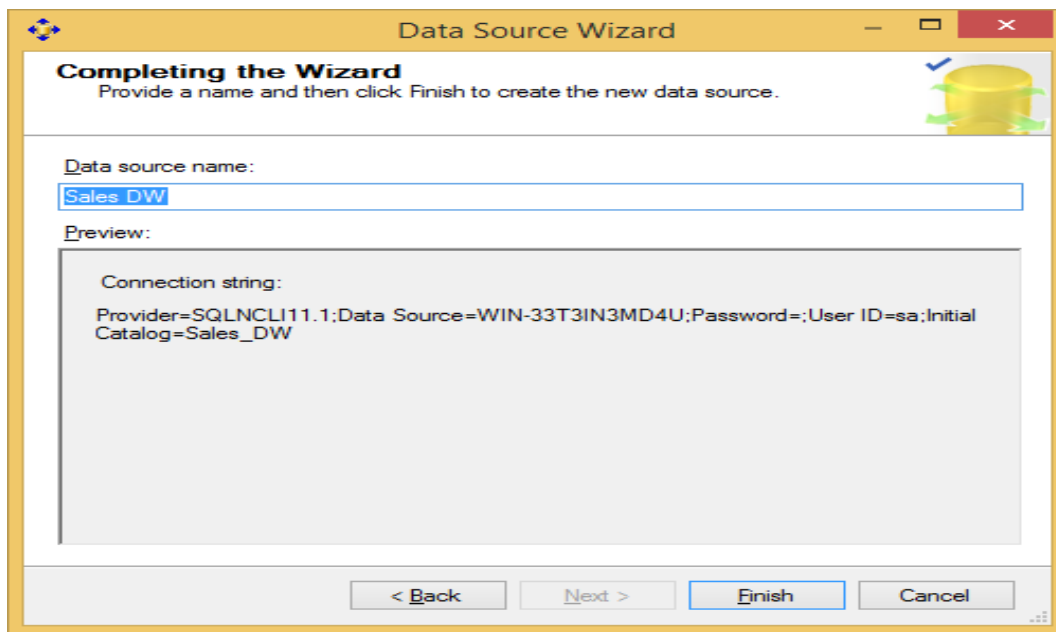
☐ Use the service account

☐ Use the credentials of the current user

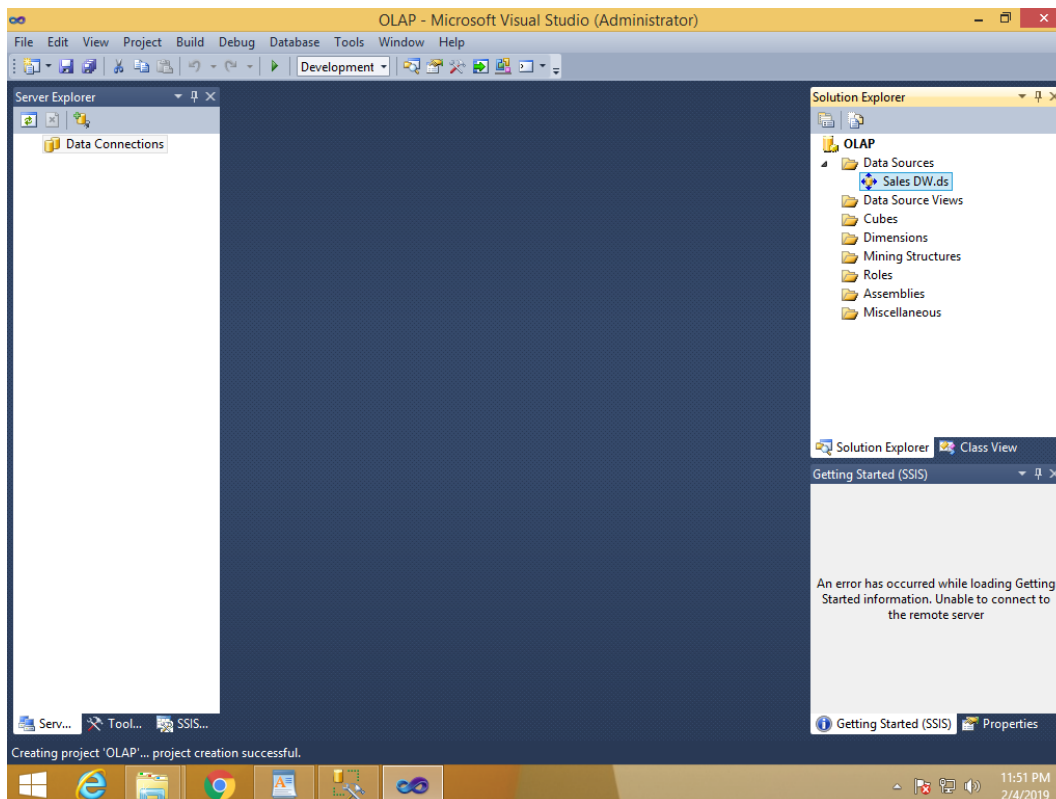
☒ Inherit



## Click Finish

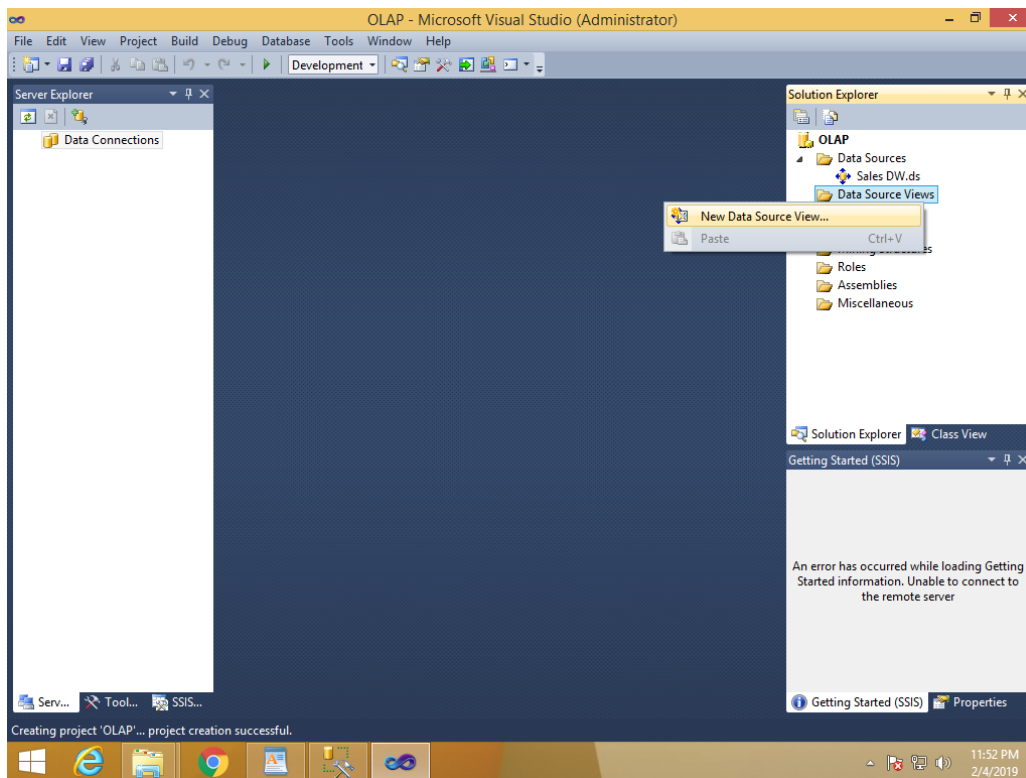


## Sales\_DW.ds gets created under Data Sources in Solution Explorer

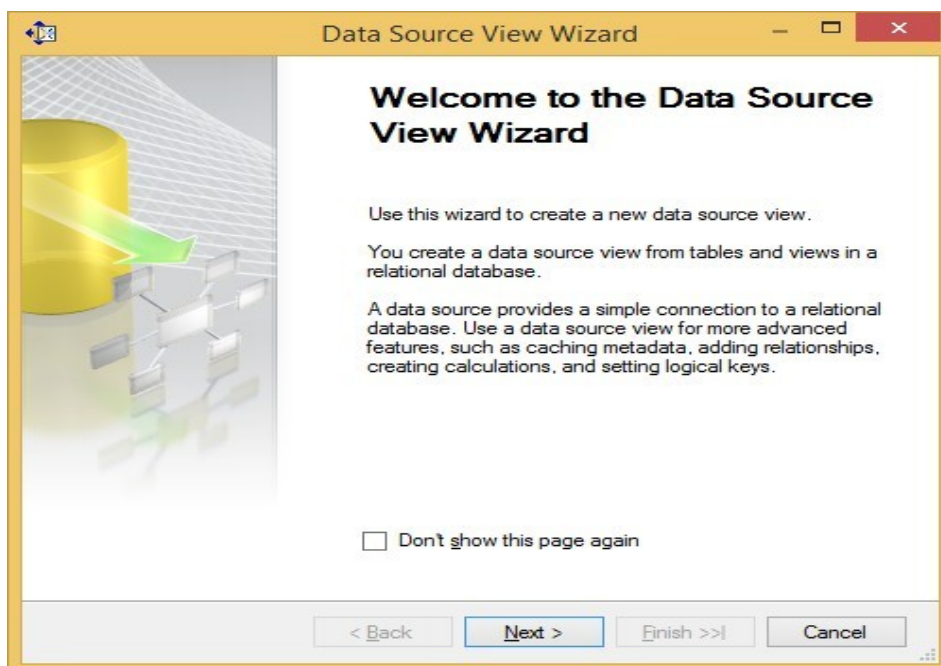


### Step 3: Creating New Data Source View

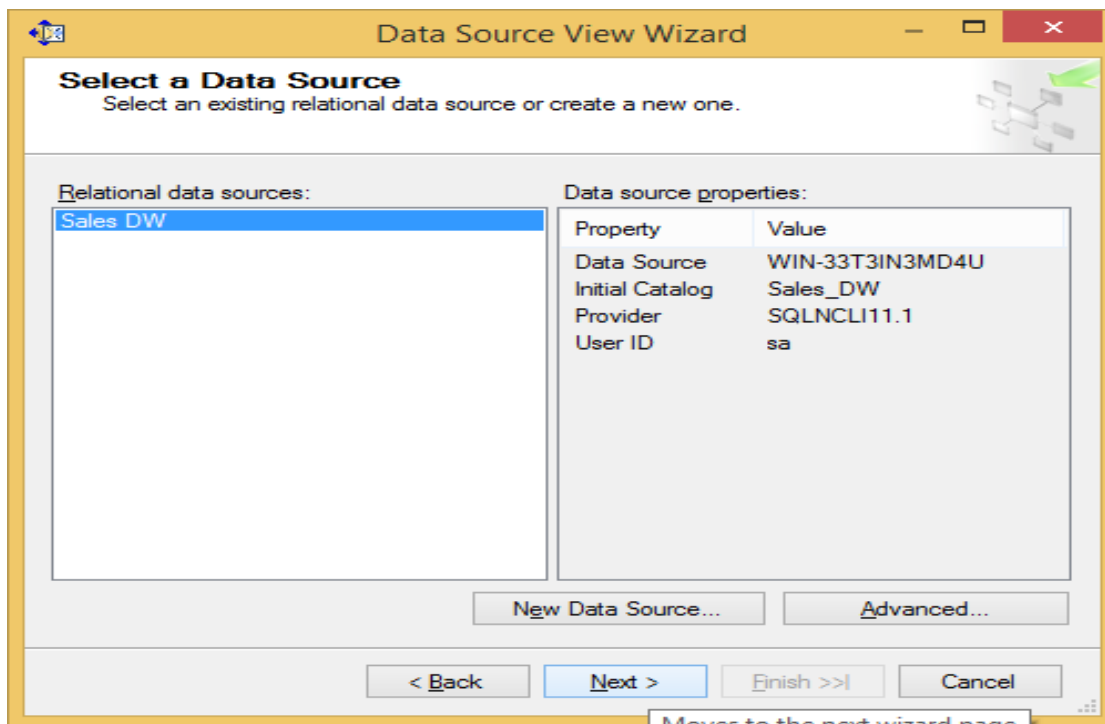
In Solution explorer right click on Data Source View → Select New Data Source View



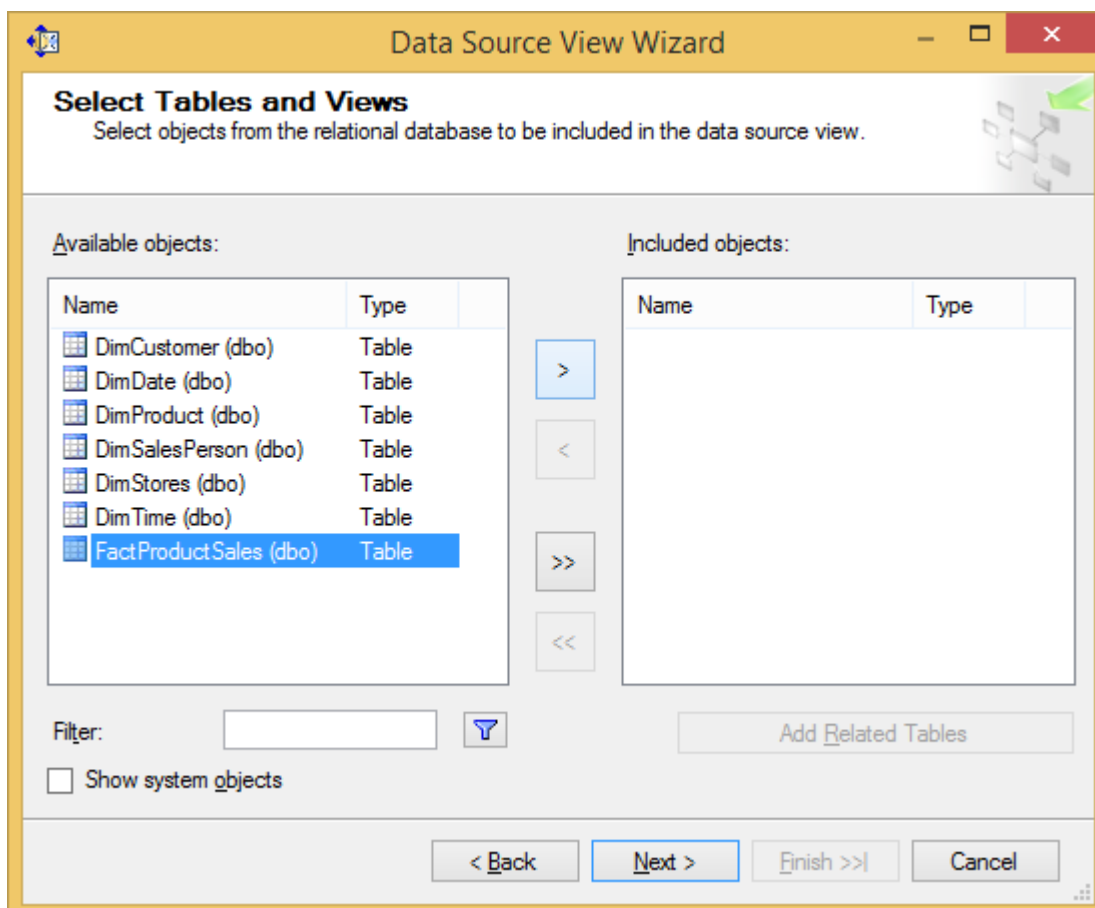
Click Next

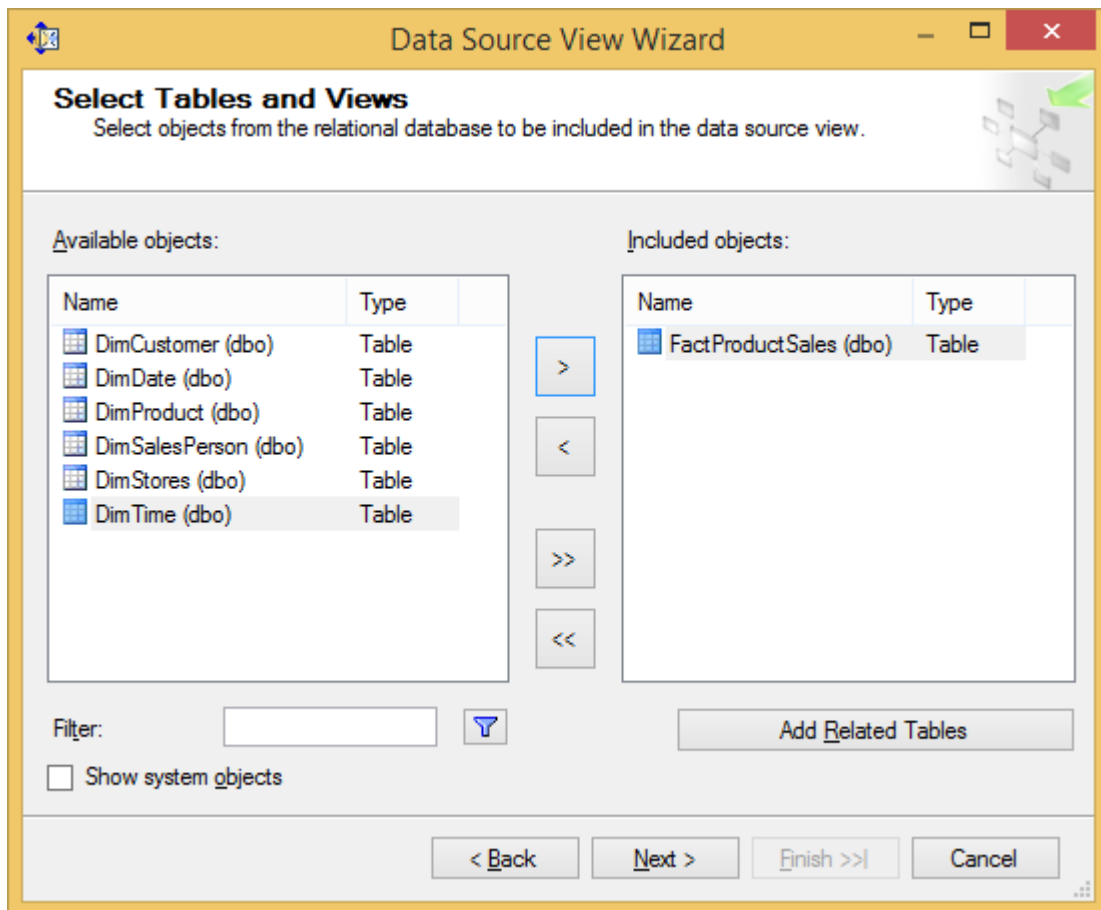


## Click Next

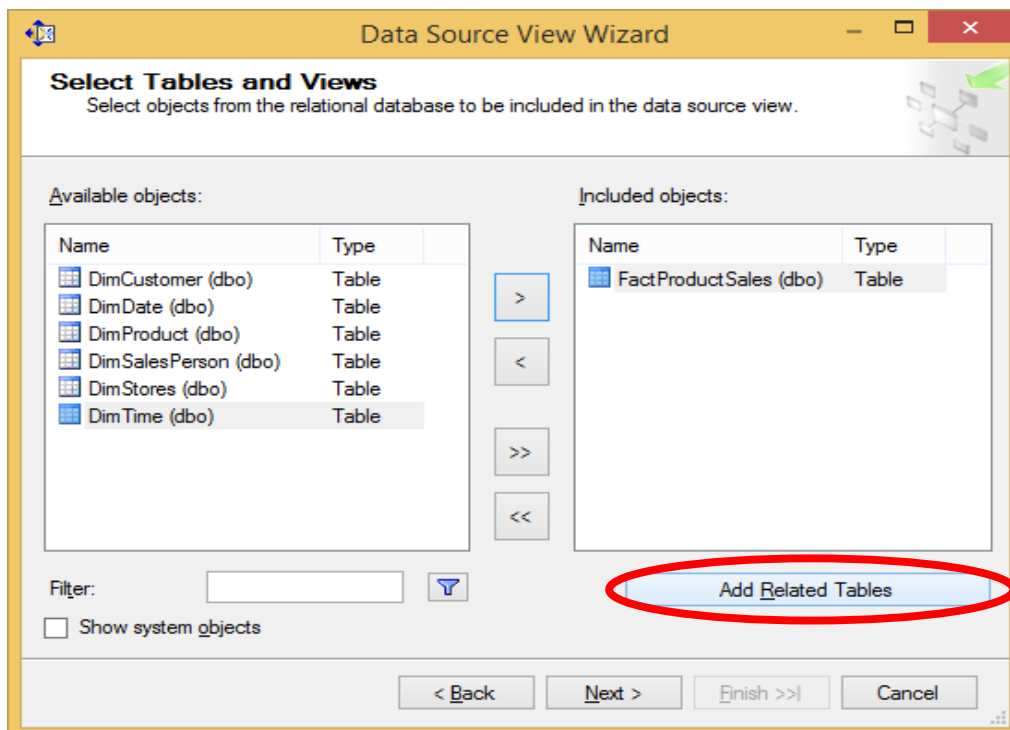


Select FactProductSales(dbo) from Available objects and put in Includes Objects by clicking on 

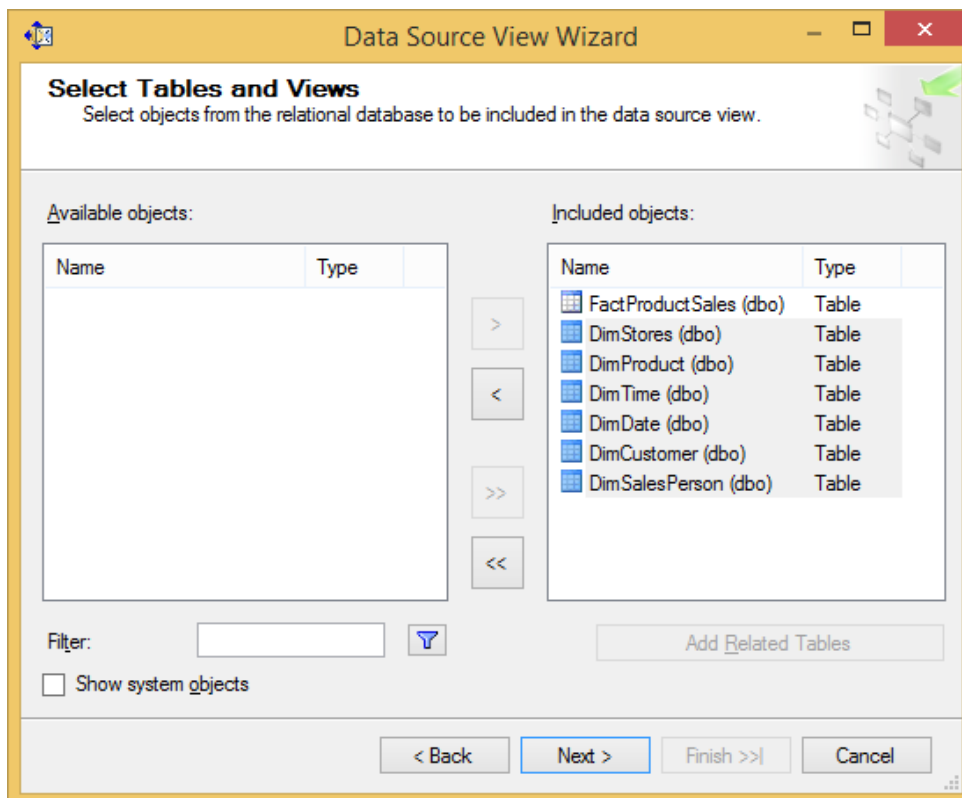




**Click on Add Related Tables**



## Click Next




**Select Tables and Views**  
Select objects from the relational database to be included in the data source view.

**Available objects:**

Name	Type
------	------

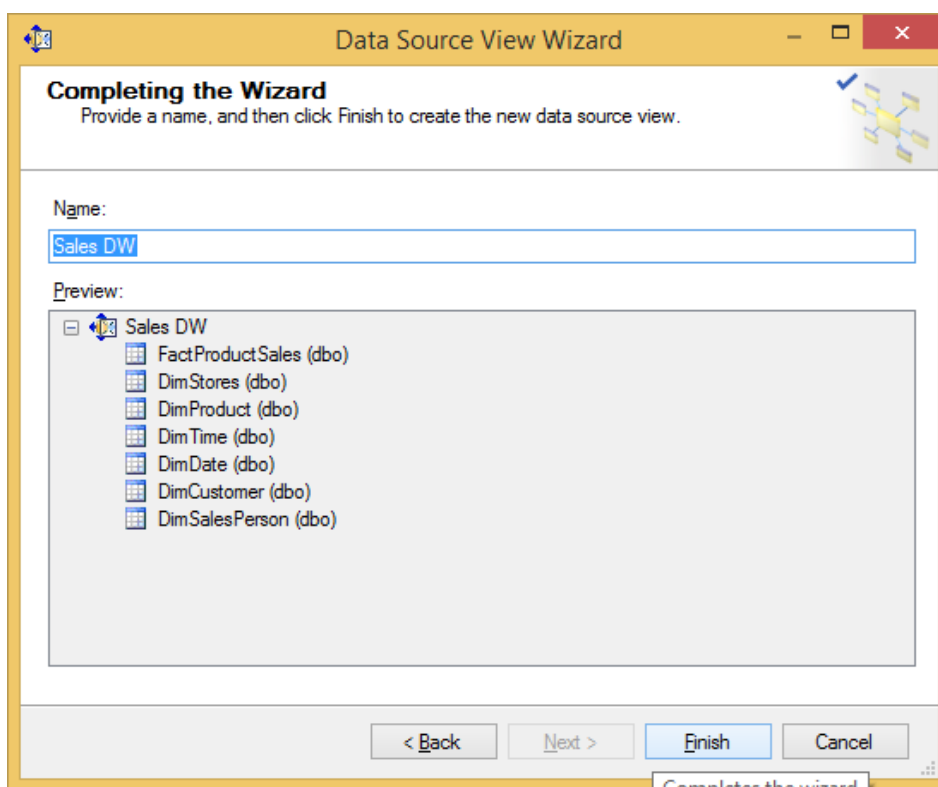
**Included objects:**

Name	Type
FactProductSales (dbo)	Table
DimStores (dbo)	Table
DimProduct (dbo)	Table
DimTime (dbo)	Table
DimDate (dbo)	Table
DimCustomer (dbo)	Table
DimSalesPerson (dbo)	Table

Filter:  

☐ Show system objects

## Click Finish



**Completing the Wizard**  
Provide a name, and then click Finish to create the new data source view.

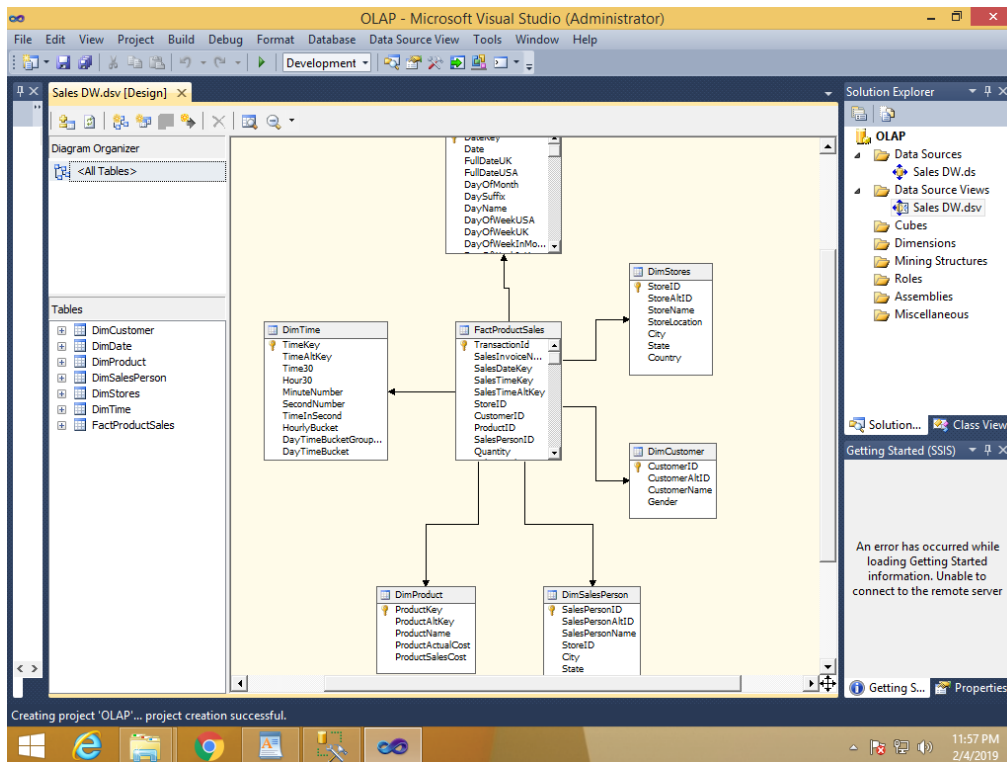
Name:

Preview:

- ☒ Sales DW
  - FactProductSales (dbo)
  - DimStores (dbo)
  - DimProduct (dbo)
  - DimTime (dbo)
  - DimDate (dbo)
  - DimCustomer (dbo)
  - DimSalesPerson (dbo)

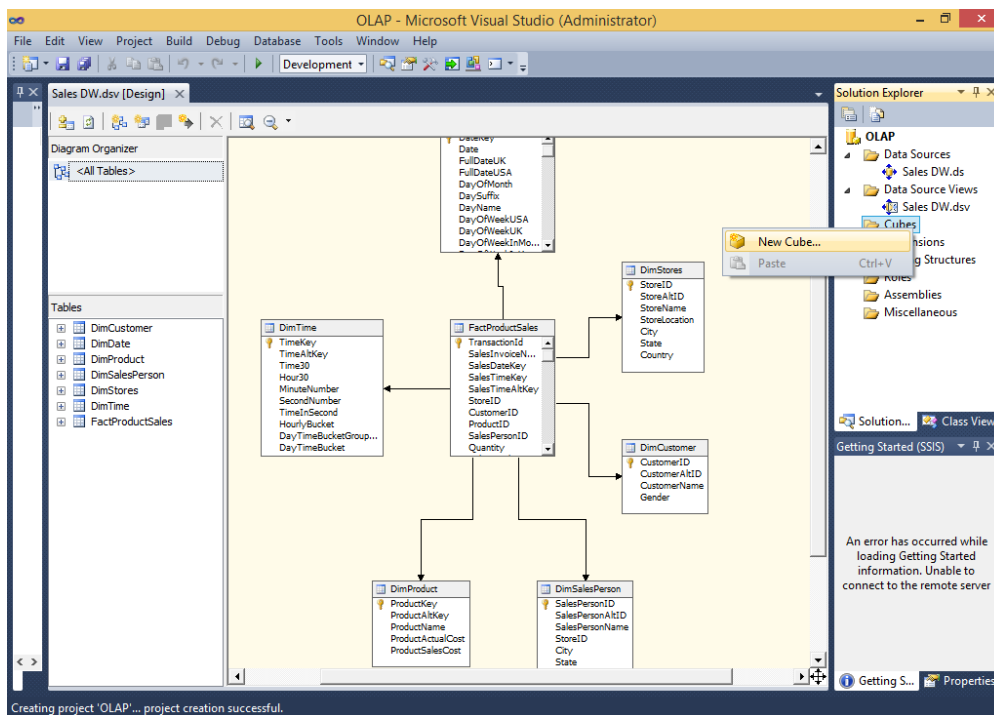
Completes the wizard

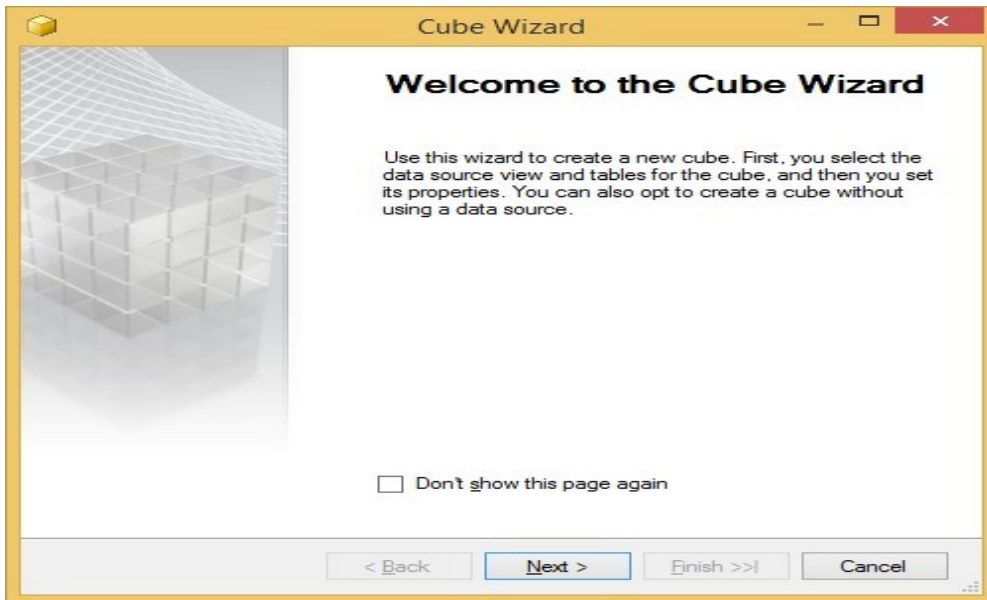
## Sales DW.dsv appears in Data Source Views in Solution Explorer.



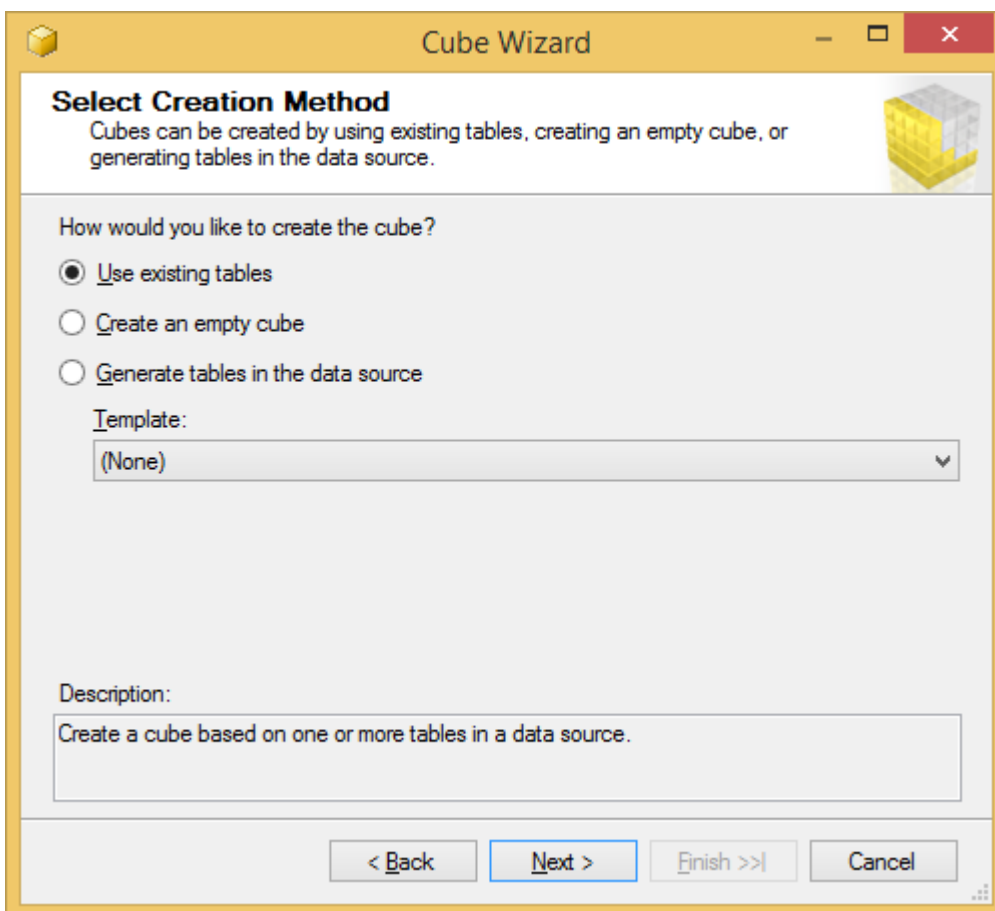
## Step 4: Creating new cube

### Right click on Cubes → New Cube

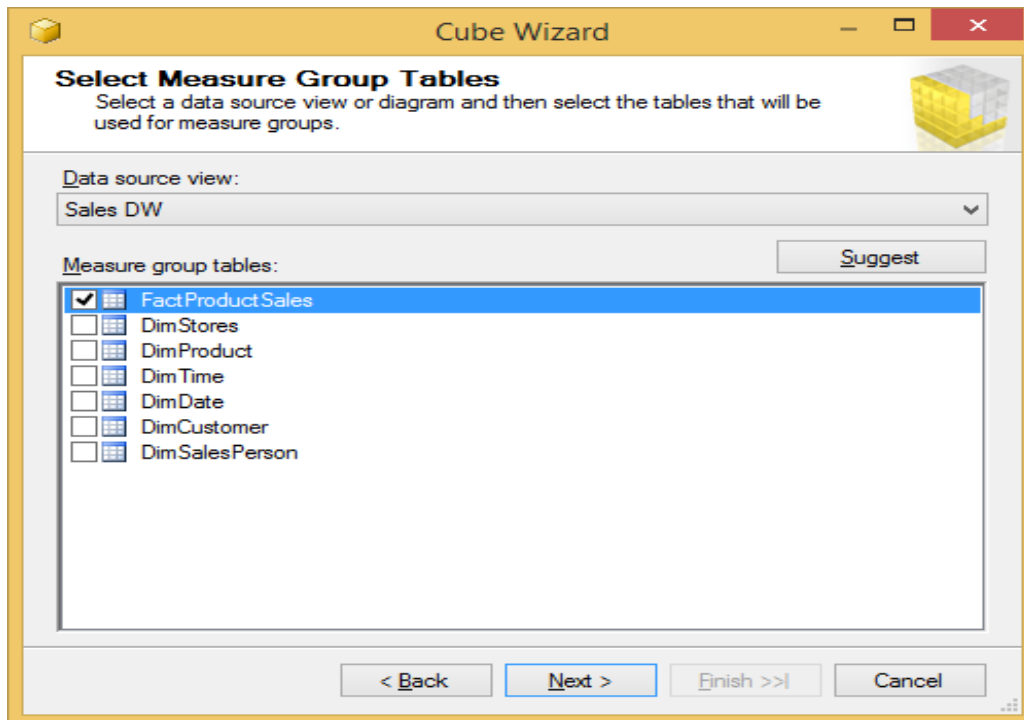




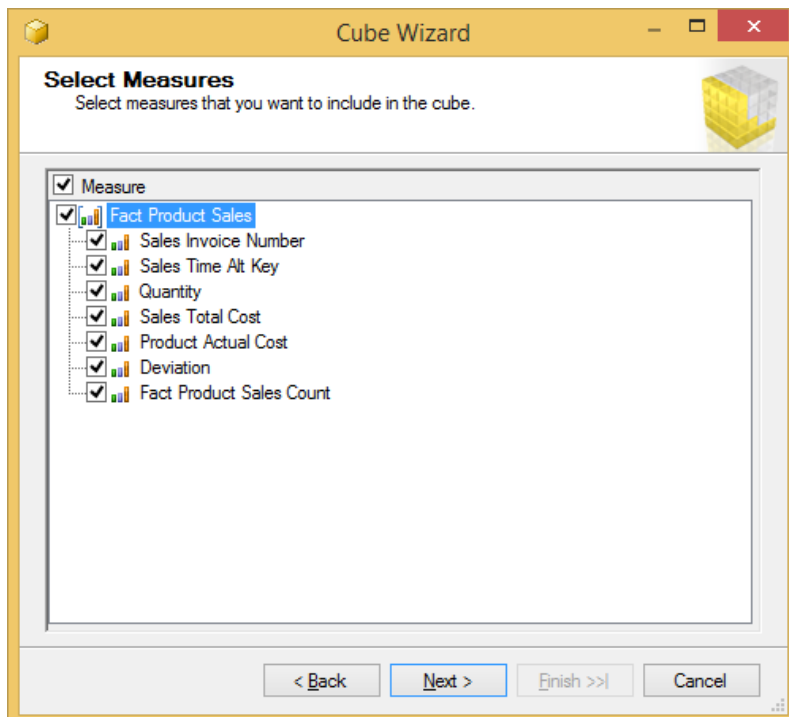
**Select Use existing tables in Select Creation Method → Next**



**In Select Measure Group Tables → Select FactProductSales → Click Next**

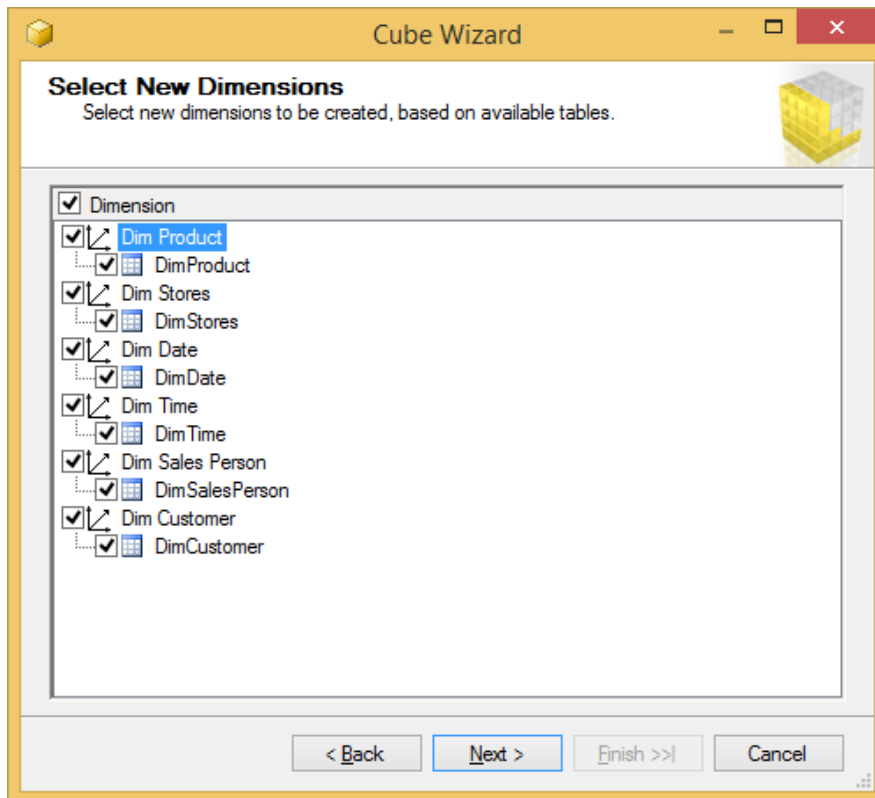


**In Select Measures → check all measures → Next**





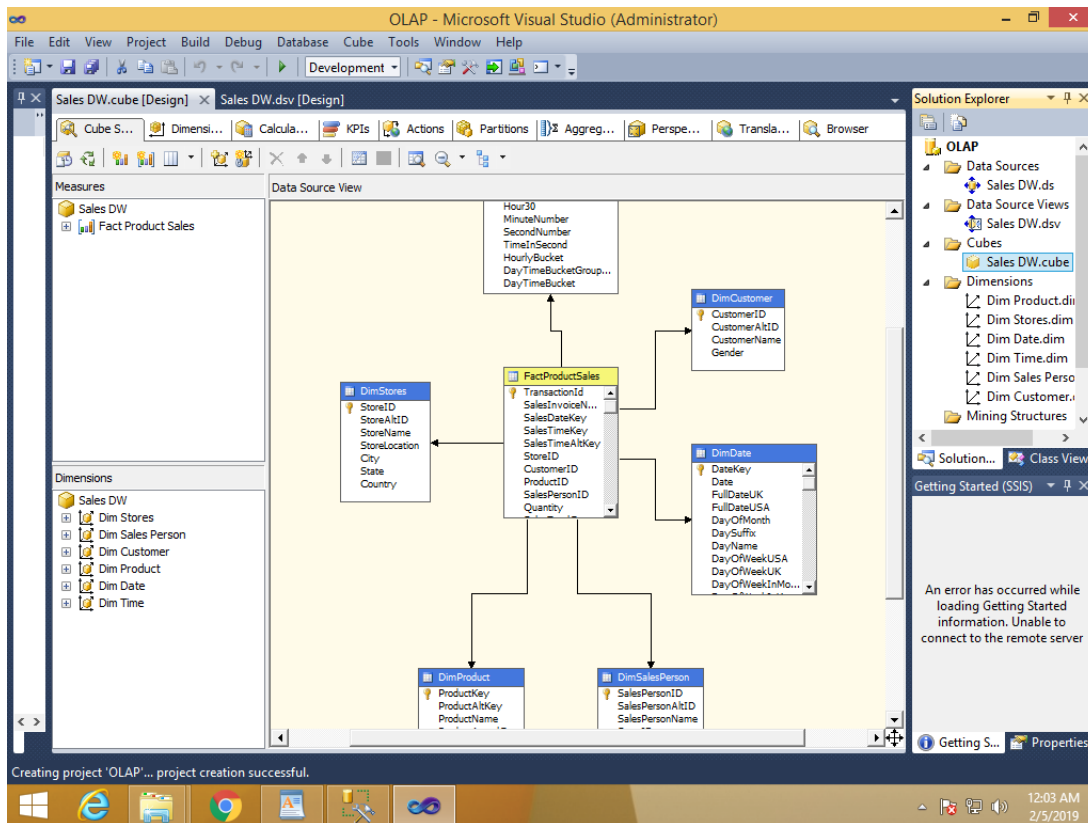
**In Select New Dimensions → Check all Dimensions → Next**



**Click on Finish**

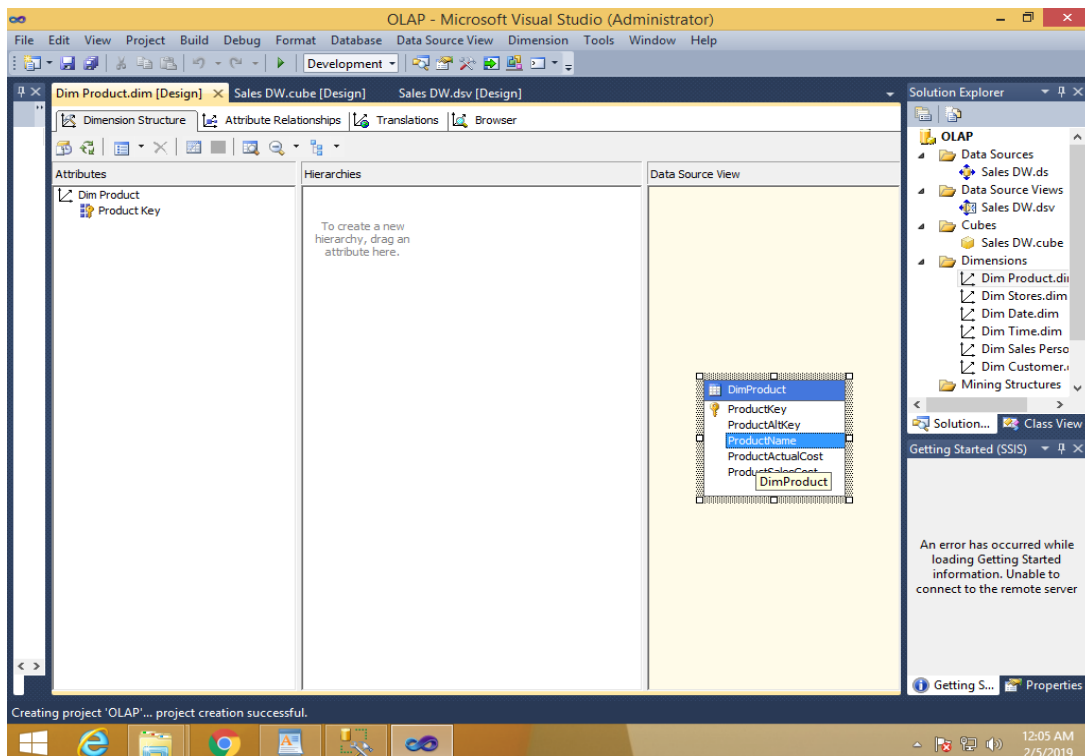


## Sales\_DW.cube is created

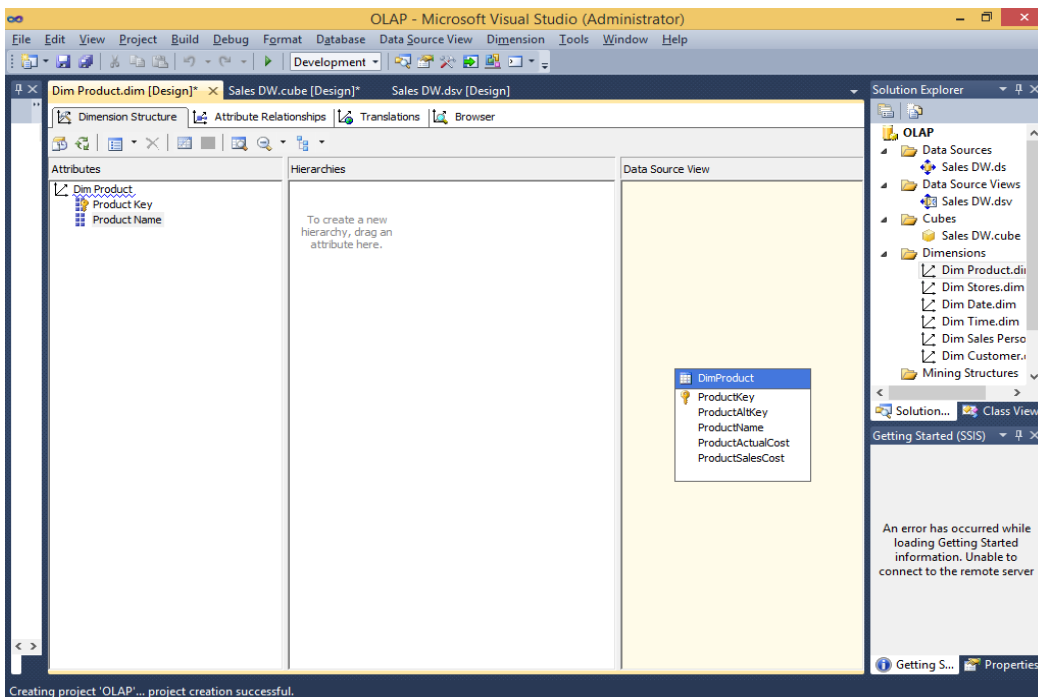


## Step 5: Dimension Modification

In dimension tab → Double Click Dim Product.dim



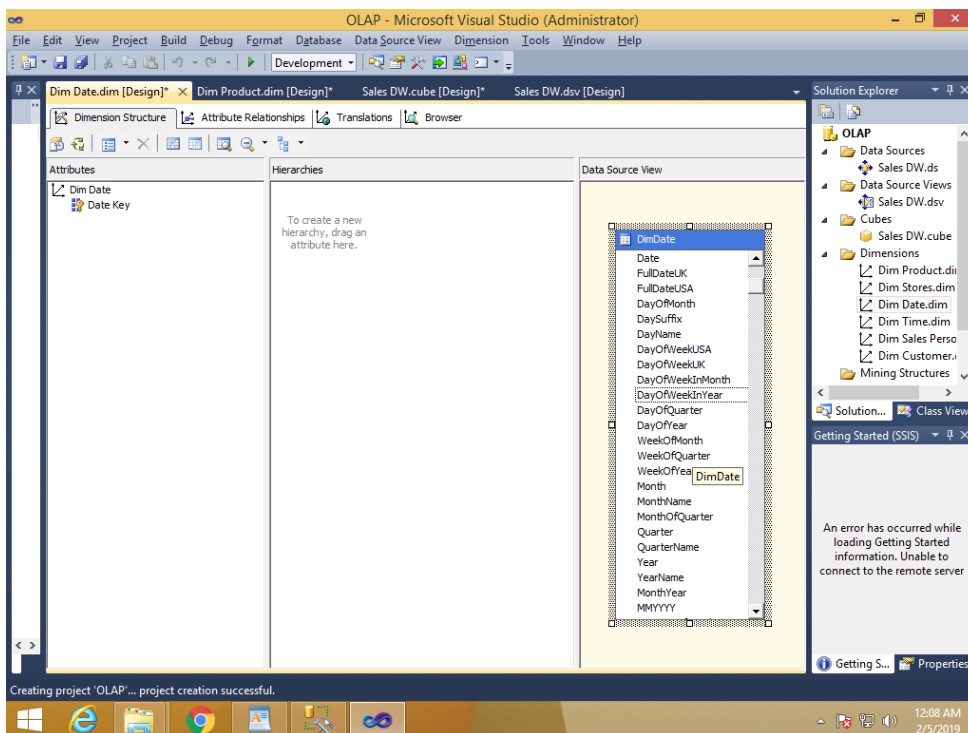
## Drag and Drop Product Name from Table in Data Source View and Add in Attribute Pane at left side

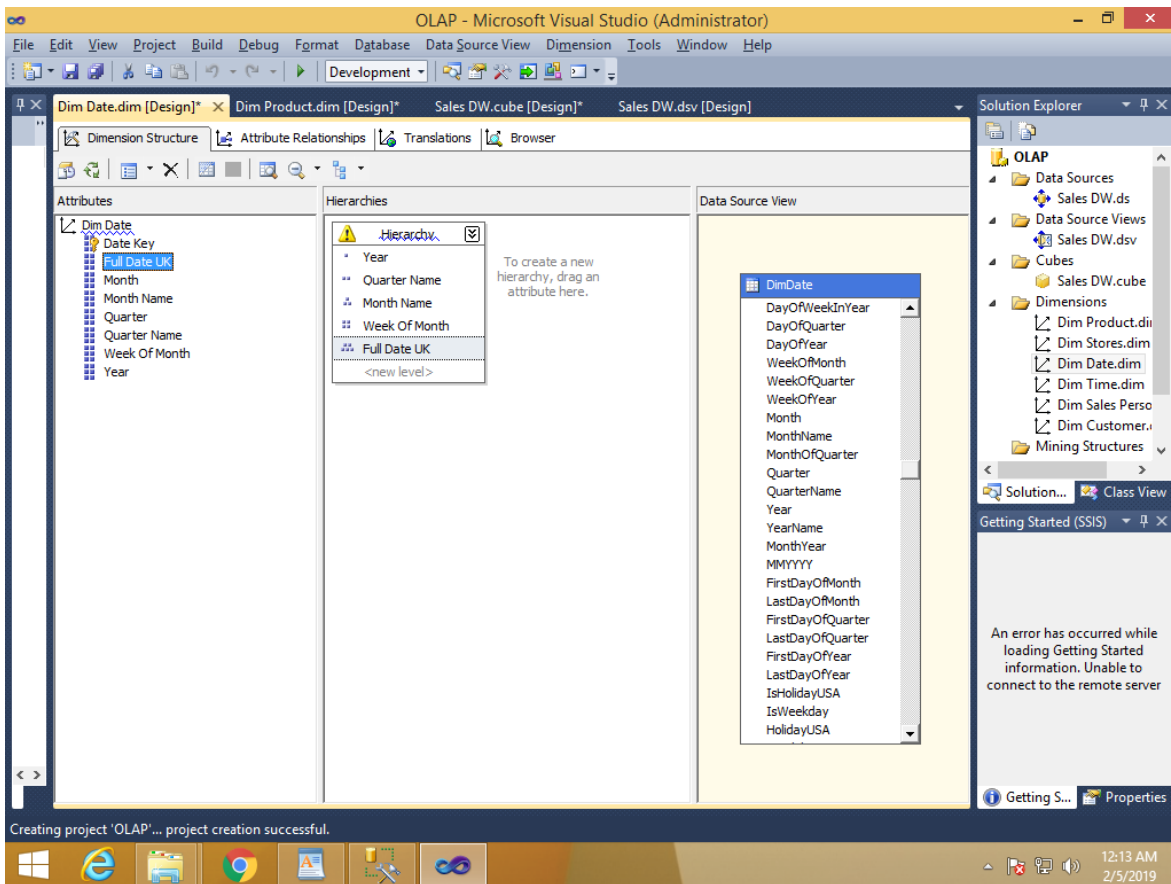


## Step 6: Creating Attribute Hierarchy in Date Dimension

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.

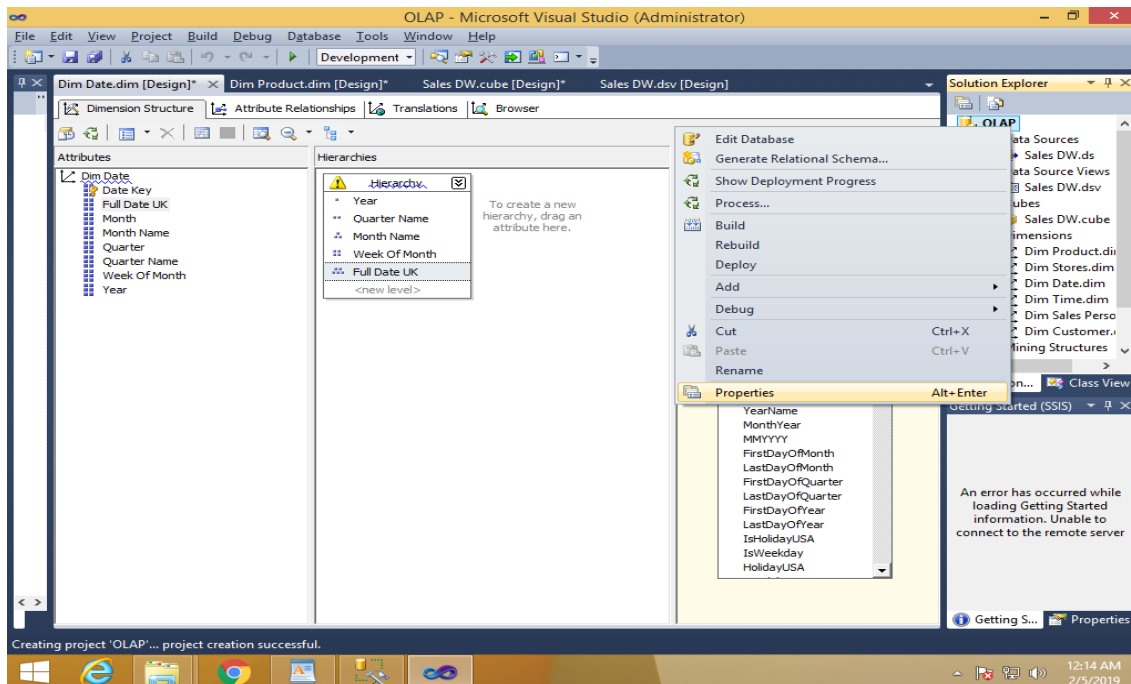
Drag fields in sequence from Attributes to Hierarchy window (Year, Quarter Name, Month Name, Week of the Month, Full Date UK)





## Step 7: Deploy Cube

### Right click on Project name → Properties



**This window appears**

OLAP Property Pages

Configuration: Active(Development) Platform: N/A Configuration Manager...

Configuration Properties

- Build
- Debugging
- Deployment

Options

Processing Option	Default
Transactional Deployment	False
Server Mode	Deploy Changes Only

Target

Server	localhost
Database	OLAP

Server

The Analysis Services instance to which the project will be deployed.

OK Cancel Apply

**Do following changes and click on Apply & ok**

OLAP Property Pages

Configuration: Active(Development) Platform: N/A Configuration Manager...

Configuration Properties

- Build
- Debugging
- Deployment

Options

Processing Option	Do Not Process
Transactional Deployment	False
Server Mode	Deploy All

Target

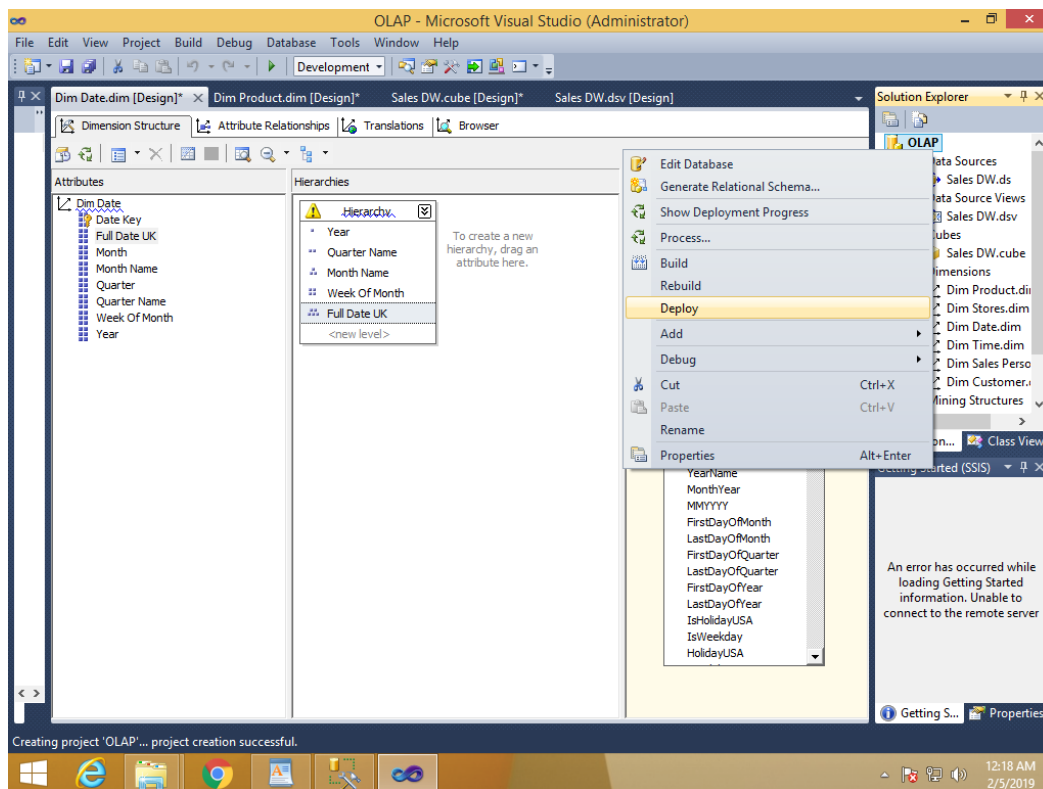
Server	localhost
Database	OLAP

Server Mode

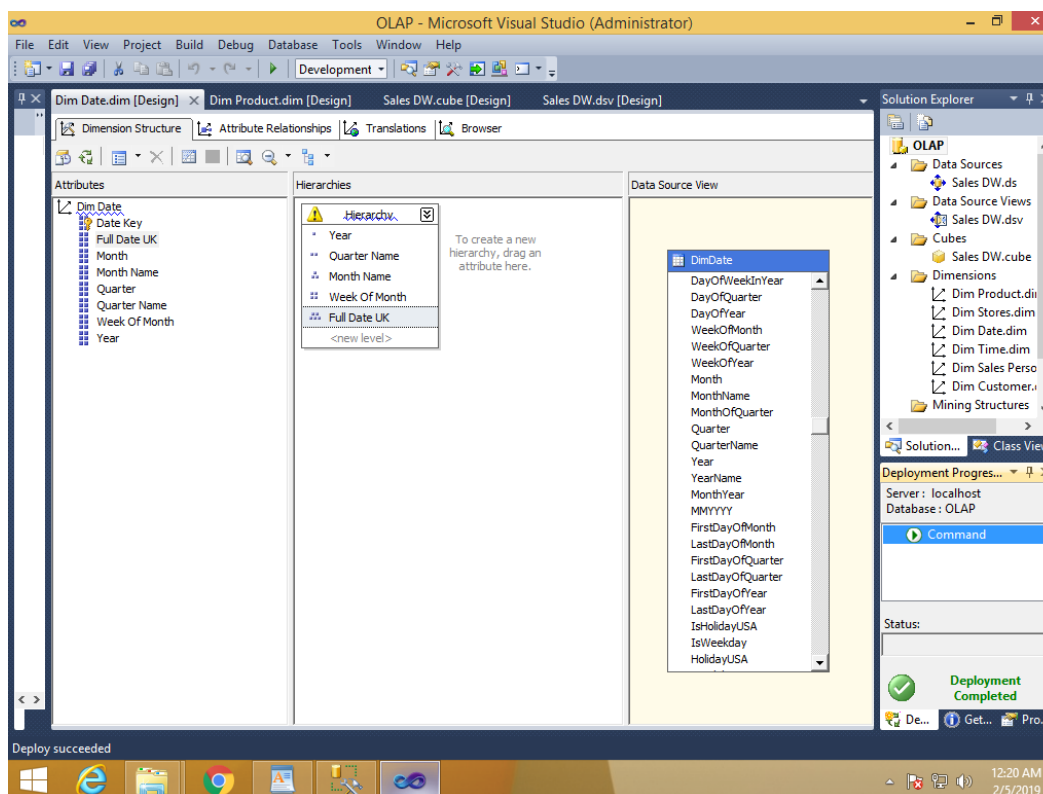
Specifies whether only changed objects or all objects should be deployed.

OK Cancel Apply

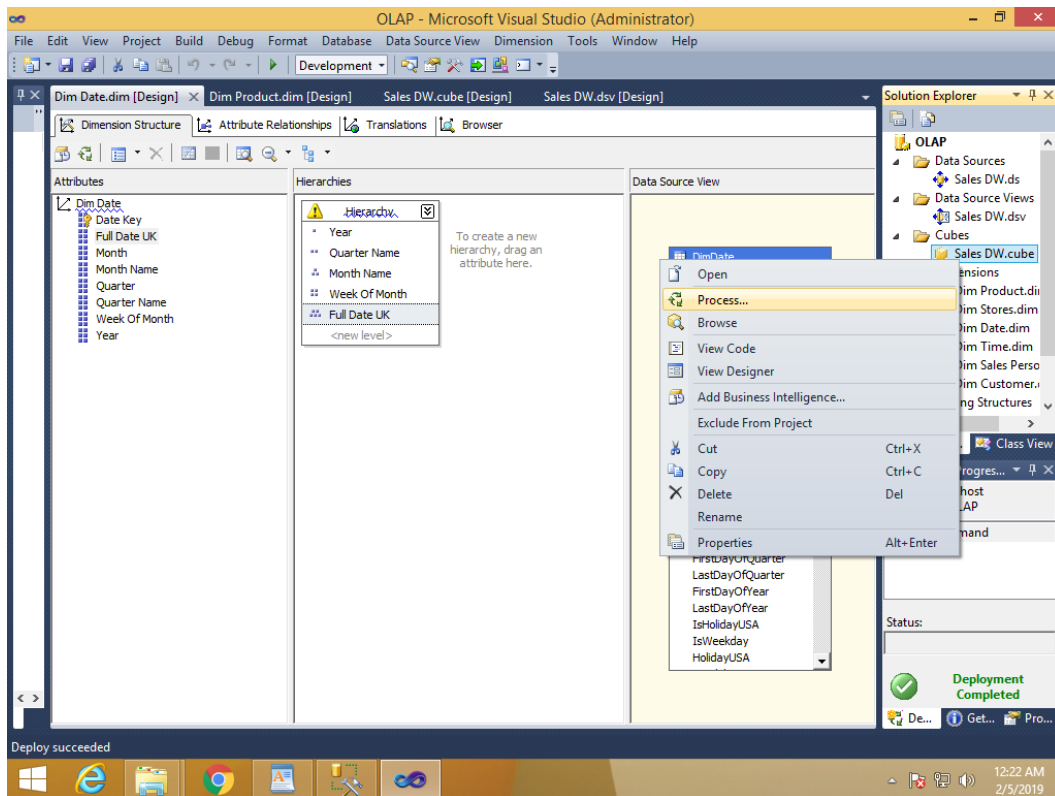
## Right click on project name → Deploy



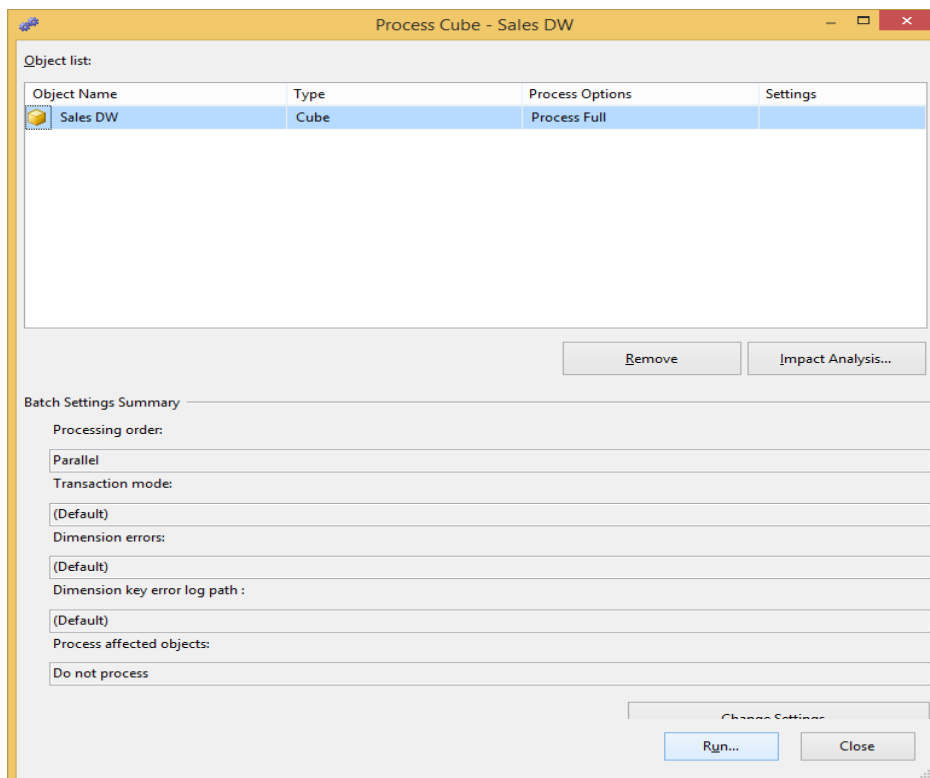
## Deployment successful

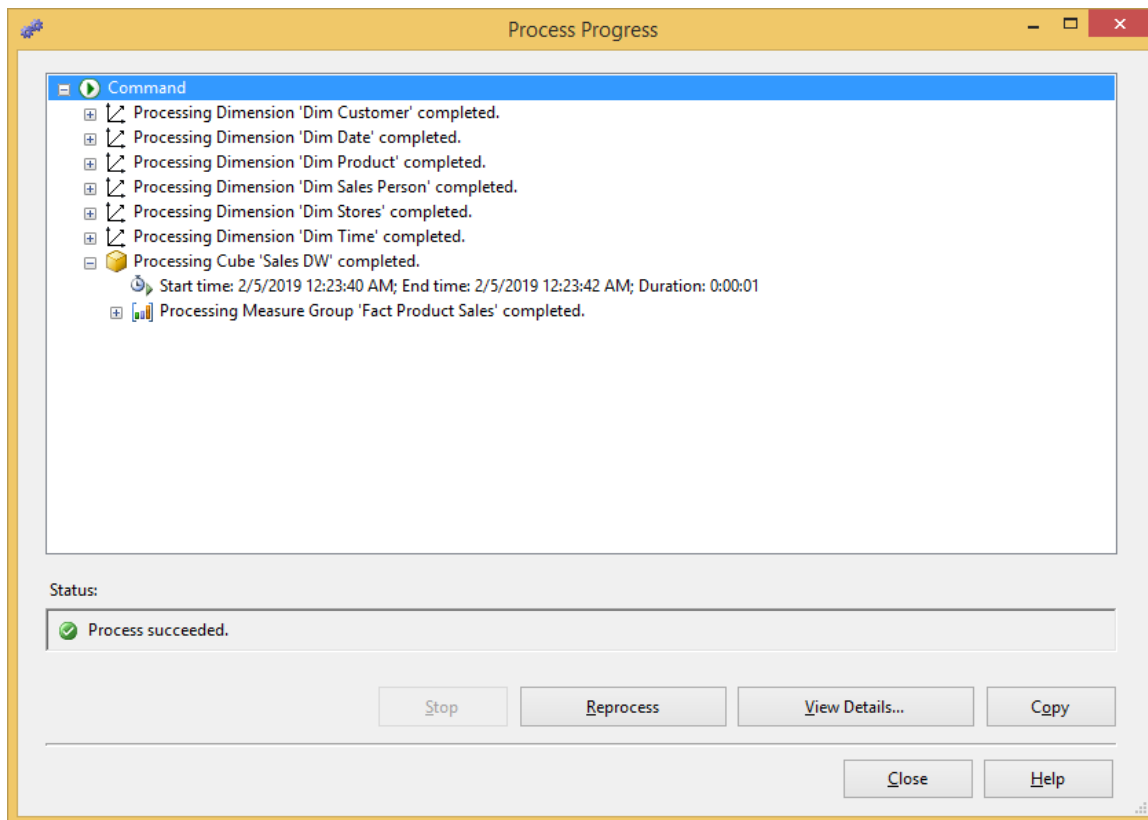


To process cube right click on Sales\_DW.cube → Process



Click run





## Browse the cube for analysis in solution explorer

