## Experiment No. : 9

**Title:** Dashboard Report creation using SQL Server Reporting Services

**Objectives**: 1. To Create Dashboard using SQL Server Reporting Services

**Key concepts:** Dashboard, SSRS

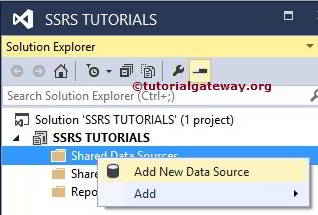
**Steps to create Dashboard using SQL Server Reporting Services**

**Create a New SSRS Report**

After creating a New Project, We have three folders in the solution explorer, such as Shared Data Sources, Shared Datasets, and Reports. Reports folder is enough to design a basic report.

**Creating SSRS Shared Data Source**

To create a SSRS shared data source, Right-click on the Shared Data Sources folder present in the solution explorer and select the **Add New Data Source** option from the context menu

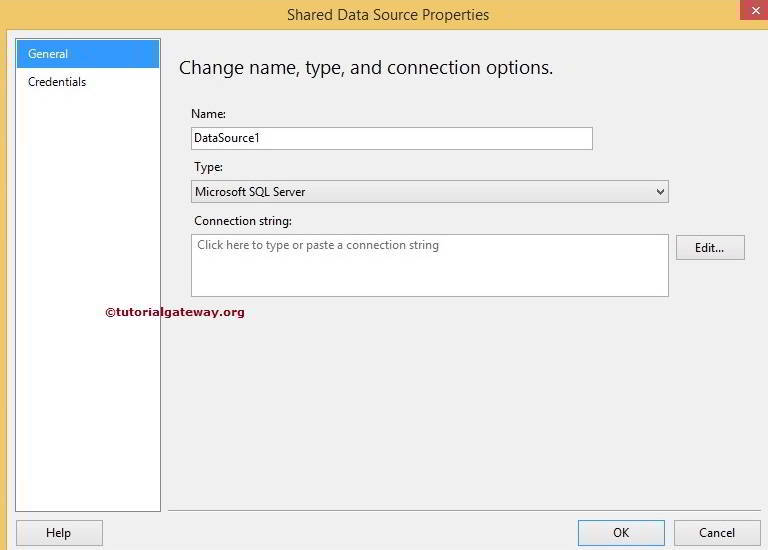


Or you can choose the **Add**option, and select **New Item** option from the context menu. It opens a New window to select the **New Data Source** option

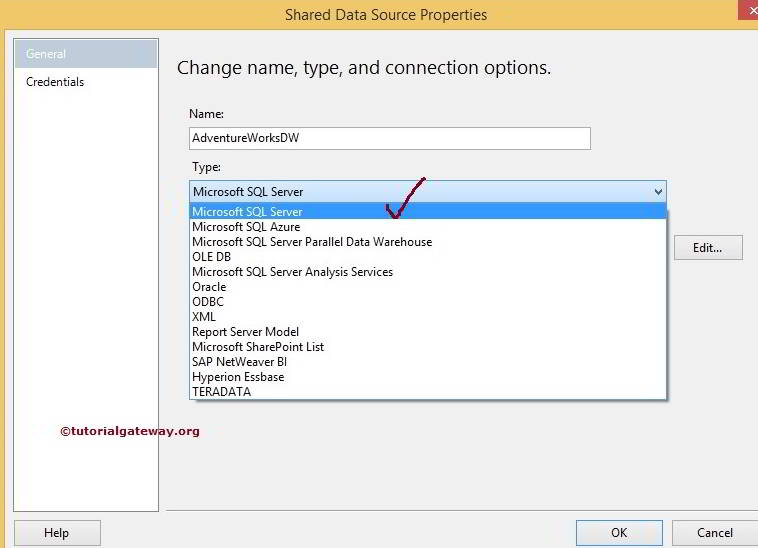


In this example, We selected the **Add New Data Source** option from the context menu. Once you click on that option, it will open the **Shared Data Source Properties**window to configure the SSRS Shared Data Source. Following are the properties inside the Shared Data Source Properties window

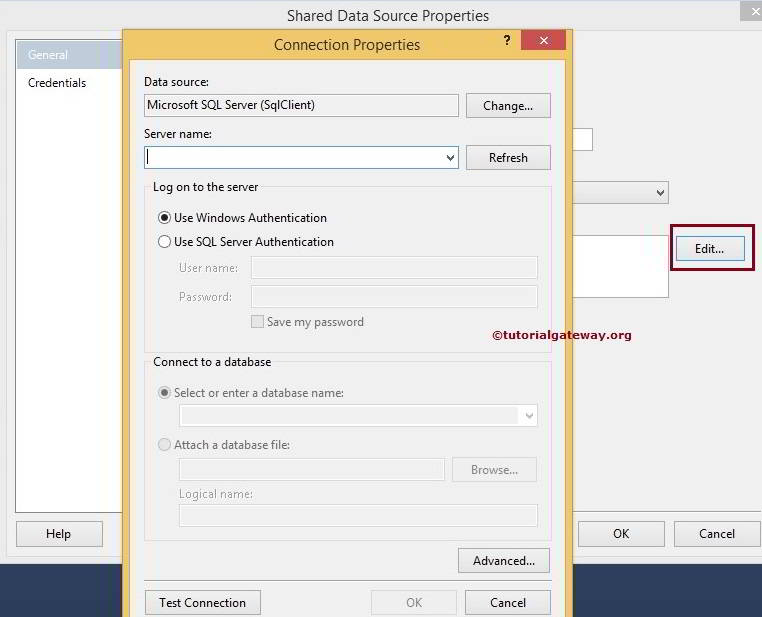
* **Name:** Please specify a valid unique name for the data source you want to create.
* **Type:** Please select the connection type from the drop-down list
* **Connection Strings:**If you know, How to write the connection string, then write down here. If not, click on the Edit button to specify the Data Source (Provider), Server Instance Name, Login credentials, and Database Name.



The following screenshot will show you the supporting types. For instance, if your data source is [SQL Server](https://www.tutorialgateway.org/sql/), then select **Microsoft SQL Server** or **OLE DB**. If your data source is SQL Server Analysis Service, then select **Microsoft SQL Server Analysis Services**.

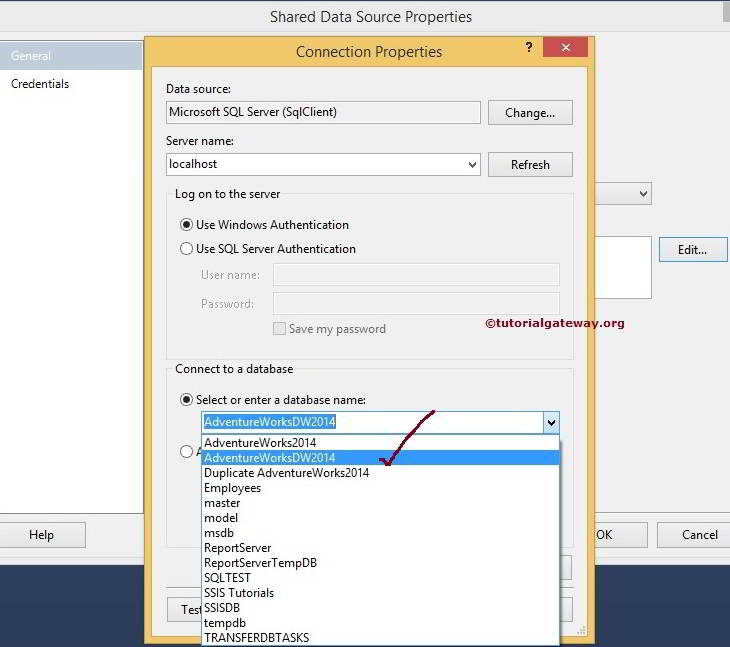


Click on the Edit button from the above screenshot will open another window to configure the **Connection Properties.**Here we have to specify the Data Source (Provider), Server Name (or Instance Name), Login credentials, and Database Name.



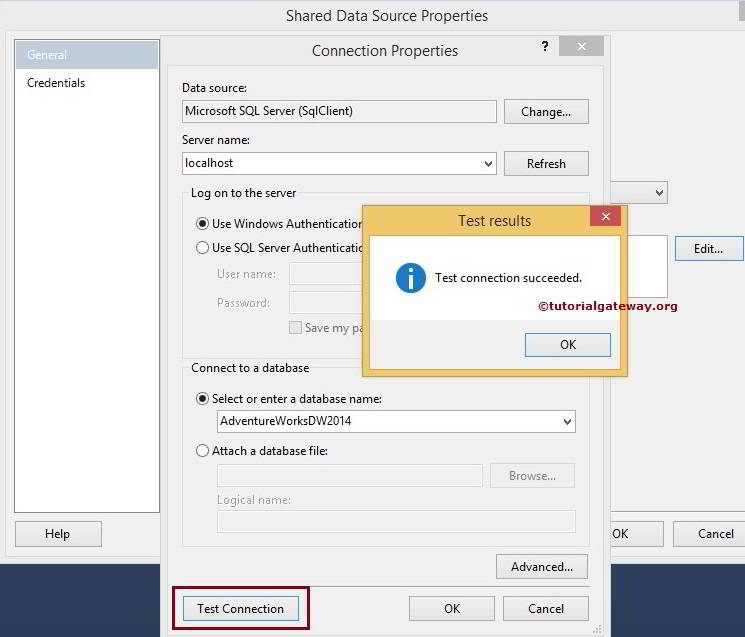
In this SSRS Shared data source example,

* **Data Source:** We are retrieving data from SQL Server so, We selected the Microsoft [SQL Server](https://www.tutorialgateway.org/sql/) (SqlClient). You can change this option as per your requirement.
* **Server name:** Please specify the SQL Server name. For now, we are using our local hostname.
* **Log on to the Server:** Please specify, How you want to log into SQL Server. For now, we are using windows authentication.

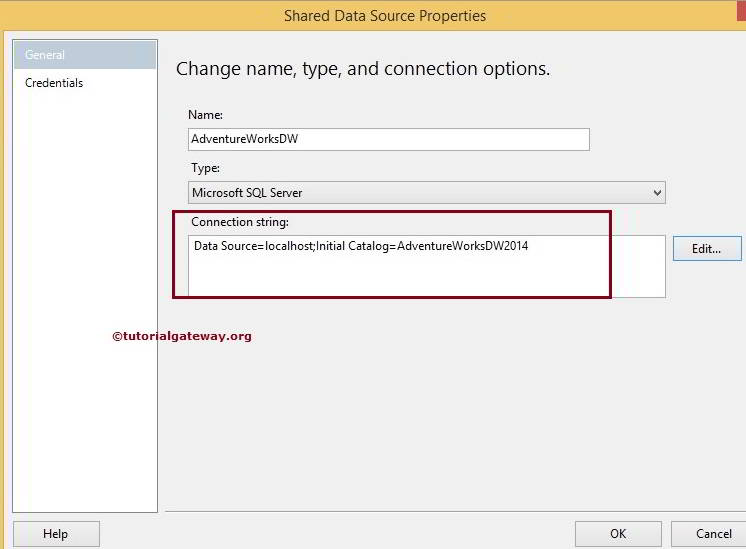


From the above screenshot, you can observe that we are using selecting the [AdventureWorksDW2014] database from the list.

Click on the **Test Connection** button provided below to check whether the connection is successful or not.

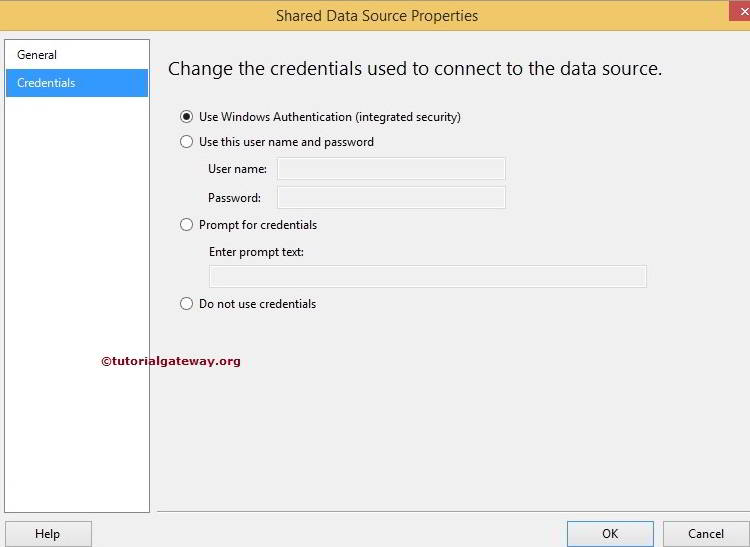


Click Ok to finish configuring the connection properties.

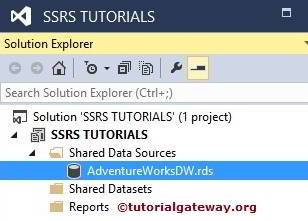


**Credentials Tab of the SSRS Shared Data Source:**

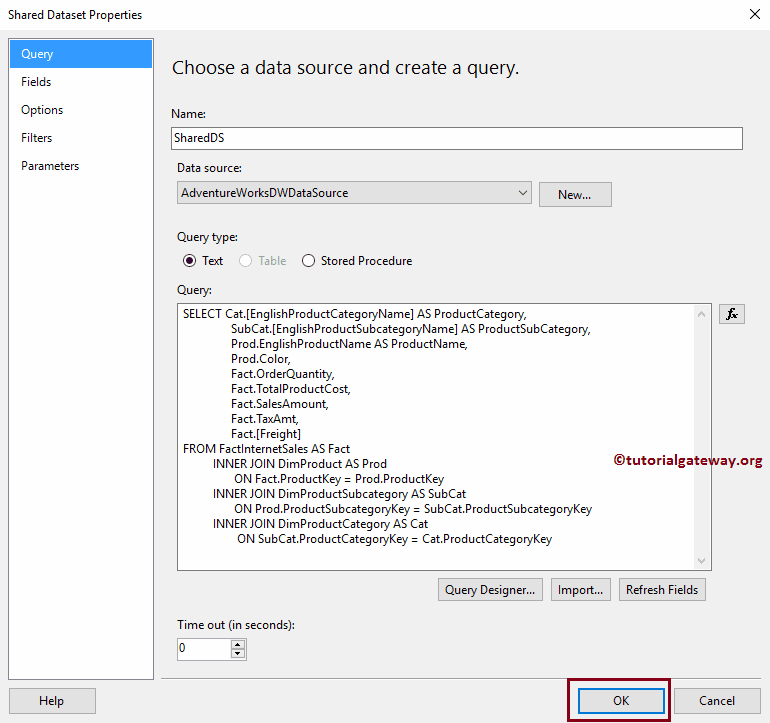
* **Use Windows Authentication:** It will use the current user windows credentials to connect to the data source. For now, We are using this option
* **Use this User name and Password:**Please specify the username and password to log into the data source. The report will use this username and password to connect to the data source
* **Prompt for credentials:** When the report is a connection to the data source, it will prompt the given text (asking for credentials).
* **Do not use credentials:** Report will not use any credentials to connect with the data source.



Click ok to finish creating the SSRS shared Data Source. Let us see in the solution explorer.



The below screenshot will show you the [Data Source](https://www.tutorialgateway.org/ssrs-shared-data-source/), and [Dataset](https://www.tutorialgateway.org/shared-dataset-in-ssrs/) that we used to create this [SSRS](https://www.tutorialgateway.org/ssrs/) dashboard.



and the Custom SQL Query we used against the [SQL Server](https://www.tutorialgateway.org/sql/) Data Source for this SSRS Dashboard report is:

-- SQL Query that we use in SSRS Dashboard

SELECT Cat.[EnglishProductCategoryName] AS ProductCategory,

SubCat.[EnglishProductSubcategoryName] AS ProductSubCategory,

Prod.EnglishProductName AS ProductName,

Prod.Color,

Fact.OrderQuantity,

Fact.TotalProductCost,

Fact.SalesAmount,

Fact.TaxAmt,

Fact.[Freight]

FROM FactInternetSales AS Fact

INNER JOIN DimProduct AS Prod

ON Fact.ProductKey = Prod.ProductKey

INNER JOIN DimProductSubcategory AS SubCat

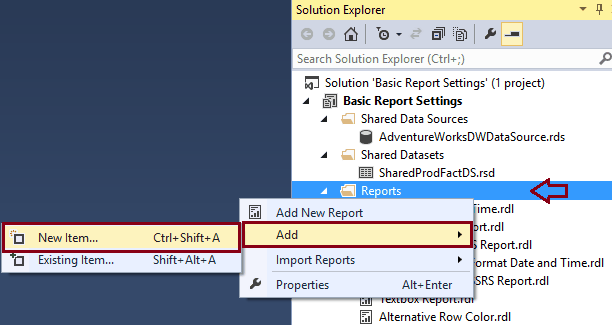
ON Prod.ProductSubcategoryKey = SubCat.ProductSubcategoryKey

INNER JOIN DimProductCategory AS Cat

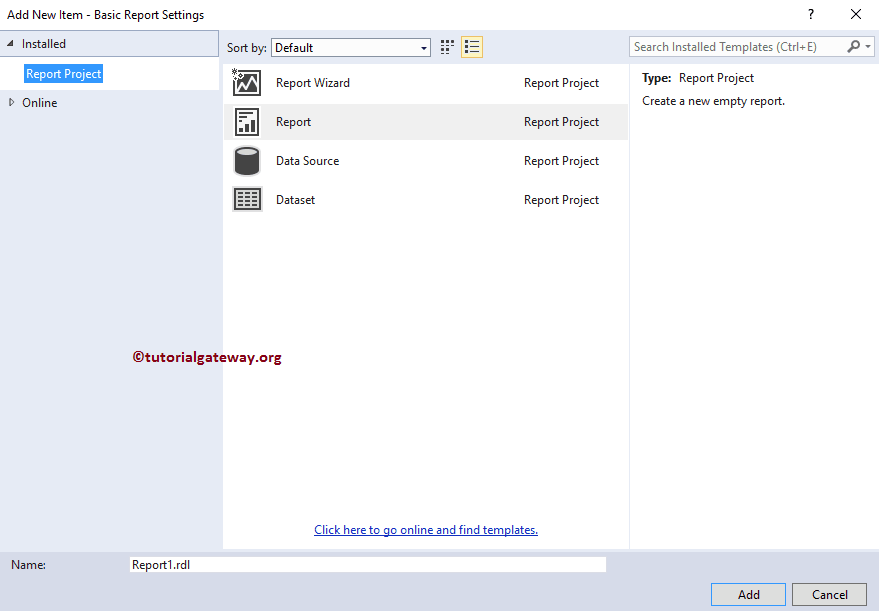
ON SubCat.ProductCategoryKey = Cat.ProductCategoryKey

**Create SSRS Report without using Wizard**

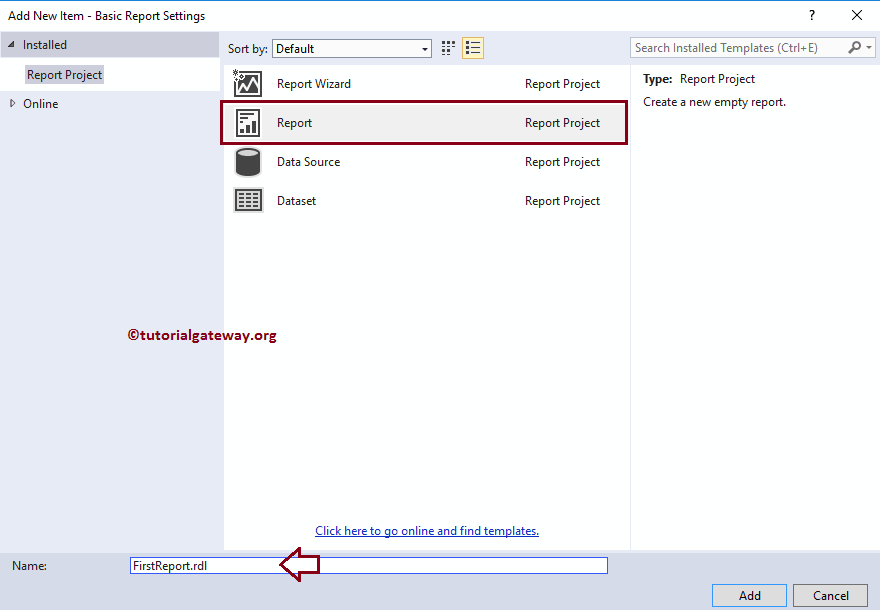
In general, we don’t use the report wizard to generate any report. To create a report usually, first go to Solution Explorer. Next, within the solution explorer, Right-click on Reports folder -> Add -> New Item



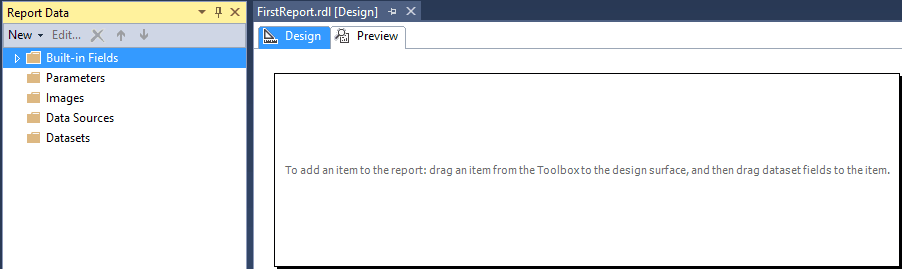
It will open the Add New Item window with all the available option. Please select the Report option and rename it as per your requirements.



change the Report name to a more meaningful one (FirstReport.rdl)



Once you click on the Add button, a new SSRS report with the specified name will generate. If you observe the Report Data pane, we have five different folders.



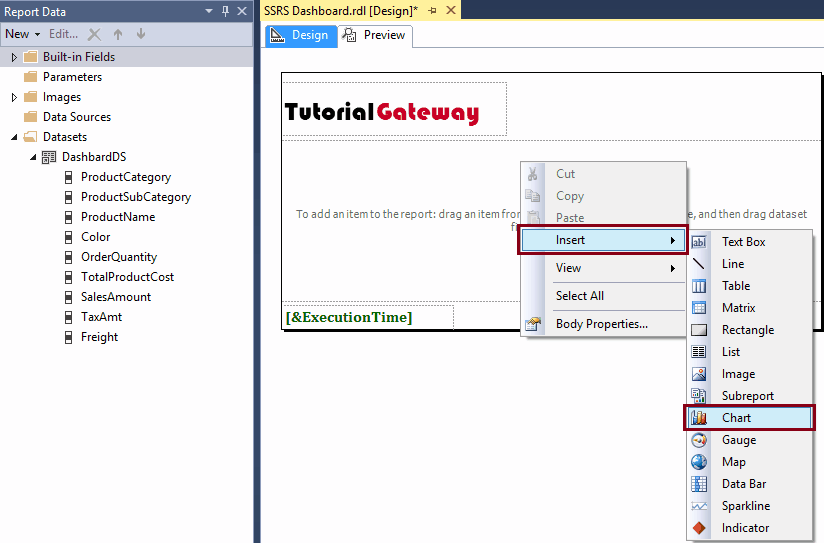
**How to Create Dashboard Reports in SSRS**

To demonstrate the SSRS Dashboard creation, we will add One Pie Chart, One Column Chart, and an Area Chart to the dashboard.

### Add Pie Chart to SSRS Dashboard Example

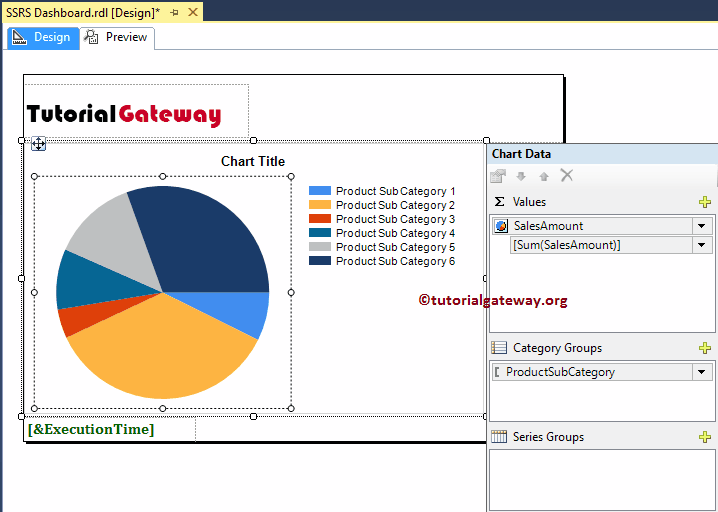
We can add any [Chart](https://www.tutorialgateway.org/charts-in-ssrs/) by dragging the Chart property from the SSRS Toolbox to Design space. Or, we can right-click on the report designer to open the context menu.

Please select the Insert -> Chart option from the context menu, as we showed below.

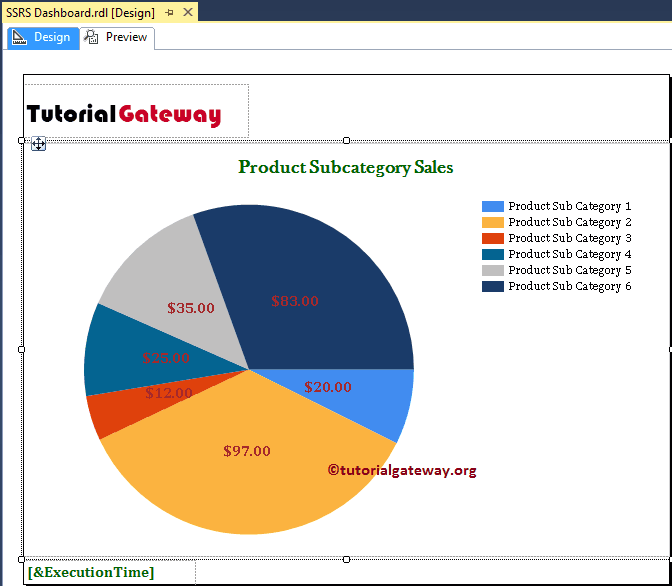


Selecting the Chart option will open a new window called **Select Chart Type**. For this example, we had selected Pie Chart. Next, Click on the empty space around the Pie Chart will open the **Chart Data**window.

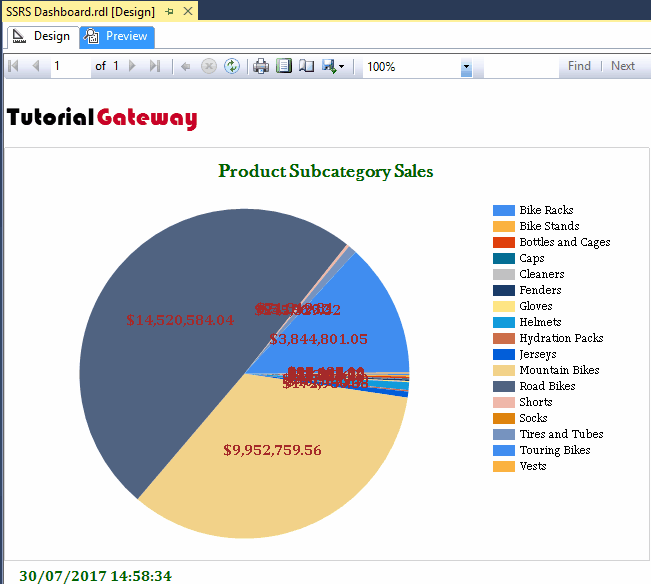
For now, we want to create a Pie chart to display the Sales by Product Subcategory. So, Drag and drop the Sales Amount column from dataset to chart data values and Product Subcategory in the category group.



Next, do some formatting to the Pie Chart to look neat and clean.



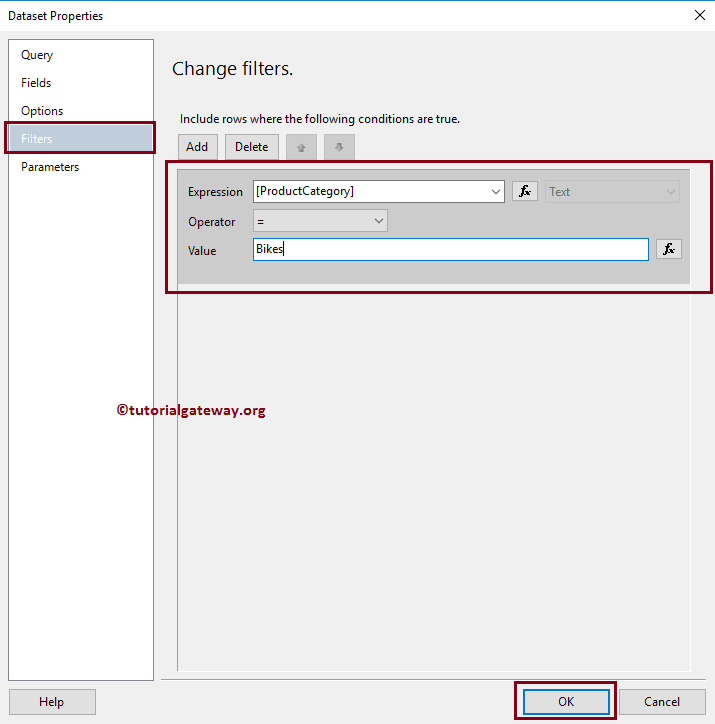
Click on the Preview button to see the report preview of SSRS Dashboard. As you can see from the below screenshot, there are too many Product subcategories to display in Pie Chart. So add a Filter to view the product Subcategories that only belong to Bikes.



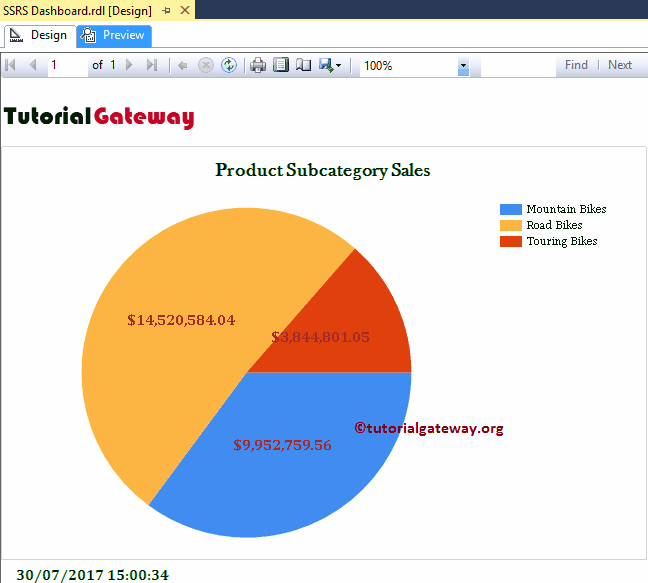
#### Add Filters at Dataset level in SSRS Dashboard

#### Please select the Dataset on which you want to apply filters from the Report data tab, and right-click on it will open the context menu. Please select the Dataset Properties.. option from it. Once we choose that option, a new window called Dataset Properties will open. Please select the Filters tab, and click on the Add button.

In this example, We are going to display the Charts whose [Product Category] is Bikes so, Please select the [Product Category] as an Expression and Operator as Equals to, and Value as Bikes.

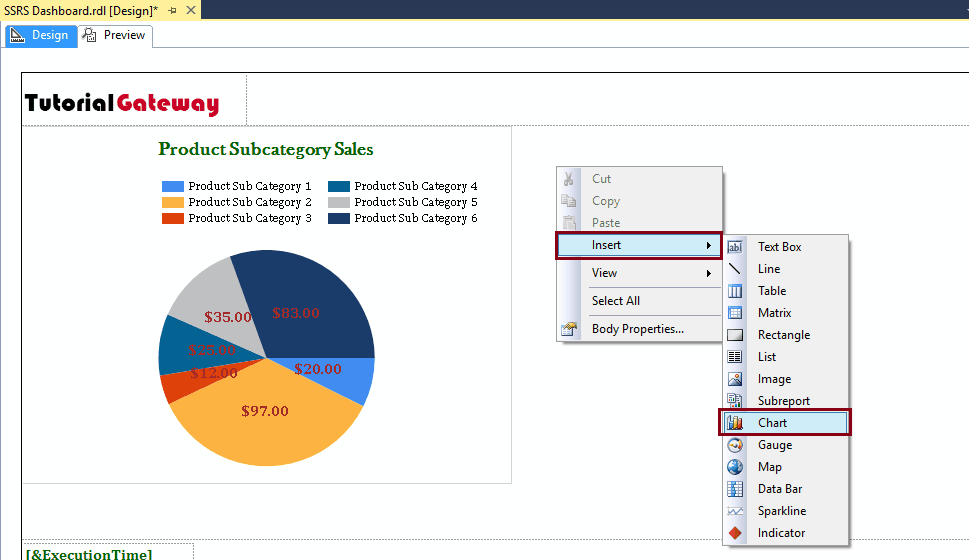


Click OK to apply the Filters at Dataset level, and click on the preview tab to see the report preview. From the below screenshot, you can see that Pie Chart is displaying the product subcategories that belong to Bikes Category.

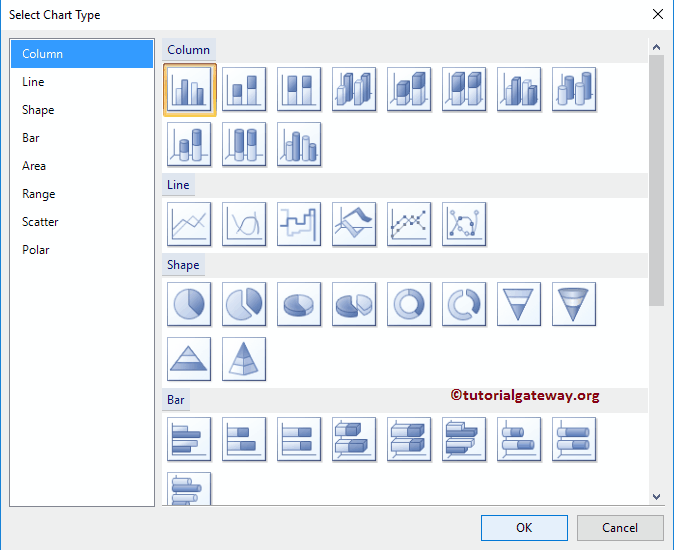


### Add Column Chart to SSRS Dashboard Example

Next, we will add a [Column Chart](https://www.tutorialgateway.org/column-chart-in-ssrs/) beside the previously created Pie Chart in SSRS Dashboard. For this, right-click on the open space beside the Pie Chart to open the context menu. Please choose the Insert -> Chart option from it.

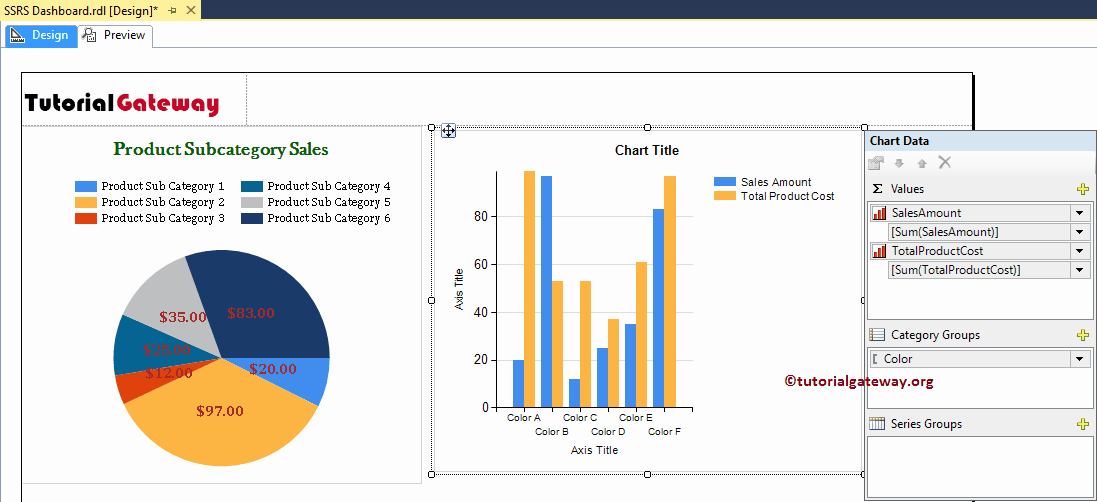


Once you select the Chart option, a new window called **Select Chart Type** opens. Here, select the Column Chart.



Click on the empty space around the [Column Chart](https://www.tutorialgateway.org/column-chart-in-ssrs/) will open the **Chart Data** window. Here, we want to create a Column Chart to display the difference between the Sales Amount and the Total Product Cost by Product Color.

So, Drag and drop the Sales Amount, Total Product Cost columns from dataset to chart data values, and Product Color in the category group



Apply some formatting techniques on the Column Chart.

Let me show you the SSRS dashboard preview