IGATE
Speed.Agility.Imagination

SQL Server Reporting Services 2008
Lab Book

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Speed.Agility.Imagination

Document Revision History

Date	Revision No.	Author	Summary of Changes
25-Jan-2013	1	Ajit Jog	Content Creation

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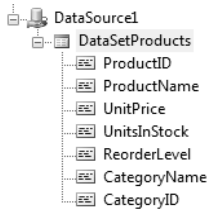
Lab 1	Creating a Tabular Product Listing Report
Description	We will create a report which will show product details grouped according product category and add category wise subtotals/
Objective	To learn 1. How to create Shared Data Source and Local Data Source 2. Define Report DataSet 3. Use Data Set and Table report item to create tabular report 4. Define a row group 5. Add Sub totals to group 6. Add Expressions using Data Set fields

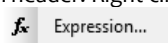
1. Open BIDS IDE, Start New SSRS Project
    a. File -> New Project , select Business Intelligence Project, Select Report Server Project template, Give Project Name IgateSSRSReportsDemo, clck ok
2. Create Shared Data Source
    a. In Solution Explorer , right click Shared Data Sources, click Add New Data Source
        i. Type: MS SQL
        ii. For Connection String, click edit.. specify the credentials and other details.
3. Right click Reports folder in Soln Explorer, click Add -> New Item.
    a. Select report item template
    b. Give ProductsReport as report name
4. In Report Data Window,
    a. Click New Data Source and create a local report level data source based on Shared Data Source of step 2
    b. Click New Data Set
        i. Create a dataset on local data source created in step 4.a
        ii. The Select Query for DataSet is:-

```
SELECT      Products.ProductID, Products.ProductName,
Products.UnitPrice, Products.UnitsInStock, Products.ReorderLevel,
Categories.CategoryName,
                Categories.CategoryID
FROM        Products INNER JOIN
            Categories ON Products.CategoryID = Categories.CategoryID
ORDER BY Categories.CategoryName, Products.ProductName
```

        iii. Click ok.
5. From toolbox, drag a Table report item onto report designer surface.
6. Right click the column header of 3rd column in table report item and insert a new column.
7. Drag ProductId, ProductName, UnitPrice, UnitsInStock dataset fields onto the table columns. Set dark blue color, bold 10pt font size for column headers and for fields set fontsize 9pt



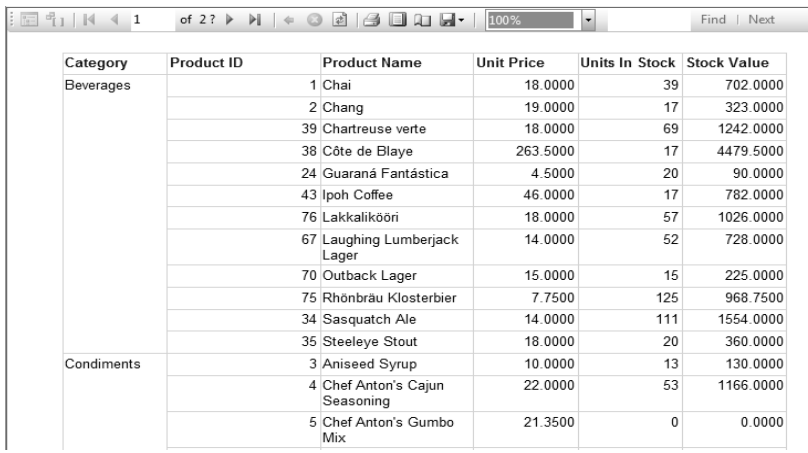
Product ID	Product Name	Unit Price	Units In Stock
[ProductID]	[ProductName]	[UnitPrice]	[UnitsInStock]

8. Right click the column header of 4th column in table report item and insert a new 5th column.
9. Type Stock Value in the 5th column header. Right click the textbox cell below the 5th column header, select expression 

and in the expression dialog box type following expression and click ok

   =Fields!UnitsInStock.Value*Fields!UnitPrice.Value

10. Right click the ProductId field textbox, select Add Group, under
    Row Group – select Parent Group.
11. In the Group dialog box
    a. give group name as Category
    b. select [CategoryName] from the drop down. Click ok
12. Click Preview Tab the output should be as below:



Category	Product ID	Product Name	Unit Price	Units In Stock	Stock Value
Beverages	1	Chai	18.0000	39	702.0000
	2	Chang	19.0000	17	323.0000
	39	Chartreuse verte	18.0000	69	1242.0000
	38	Côte de Blaye	263.5000	17	4479.5000
	24	Guaraná Fantástica	4.5000	20	90.0000
	43	Ipoh Coffee	46.0000	17	782.0000
	76	Lakkalikööri	18.0000	57	1026.0000
	67	Laughing Lumberjack Lager	14.0000	52	728.0000
	70	Outback Lager	15.0000	15	225.0000
	75	Rhönbräu Klosterbier	7.7500	125	968.7500
	34	Sasquatch Ale	14.0000	111	1554.0000
	35	Steeleye Stout	18.0000	20	360.0000
Condiments	3	Aniseed Syrup	10.0000	13	130.0000
	4	Chef Anton's Cajun Seasoning	22.0000	53	1166.0000
	5	Chef Anton's Gumbo Mix	21.3500	0	0.0000

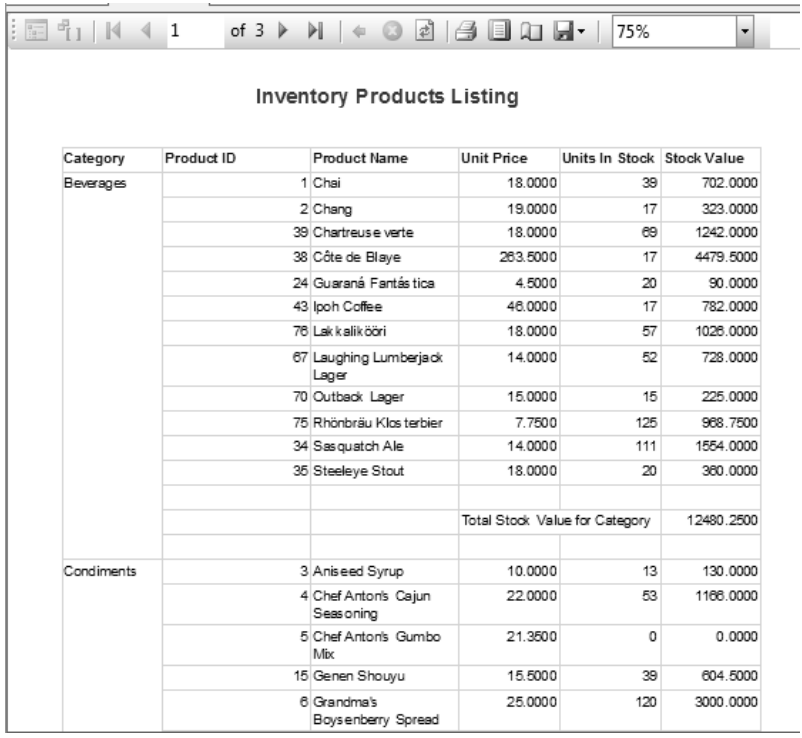
13. Right Click CategoryName field textbox in the report table, Insert Row -> Inside Group- Below. Add such total 3 blank rows.
14. In the middle row under stock value , right click the cell textbox and give following expression

    =Sum(Fields!UnitsInStock.Value*Fields!UnitPrice.Value)

15. Select the 2 adjacent cells and right click and merge and then type the following:

Total Stock Value for Category

16. Drag a TextBox from toolbox on the top of table and give "Inventory Products Listing" as report heading and format it.
17. Click Preview tab to see the result



Inventory Products Listing

Category	Product ID	Product Name	Unit Price	Units In Stock	Stock Value
Beverages	1	Chai	18.0000	39	702.0000
	2	Chang	19.0000	17	323.0000
	39	Chartreuse verte	18.0000	69	1242.0000
	38	Côte de Blaye	263.5000	17	4479.5000
	24	Guaraná Fantástica	4.5000	20	90.0000
	43	Ipoh Coffee	46.0000	17	782.0000
	76	Lakkalikööri	18.0000	57	1026.0000
	67	Laughing Lumberjack Lager	14.0000	52	728.0000
	70	Outback Lager	15.0000	15	225.0000
	75	Rhönbräu Klosterbier	7.7500	125	968.7500
	34	Sasquatch Ale	14.0000	111	1554.0000
	35	Steeleye Stout	18.0000	20	360.0000
			Total Stock Value for Category		12480.2500
Condiments	3	Aniseed Syrup	10.0000	13	130.0000
	4	Chef Anton's Cajun Seasoning	22.0000	53	1166.0000
	5	Chef Anton's Gumbo Mix	21.3500	0	0.0000
	15	Genen Shouyu	15.5000	39	604.5000
	6	Grandma's Boysenberry Spread	25.0000	120	3000.0000

Lab 2	**Creating a drill down group report**
Description	We will create a report which will show the orders placed by customers from various countries and it's cities between specific dates
Objective	To learn 1. How to create multiple nested groups. 2. How to add drill down feature. 3. Use Parameters for filtering. 4. Dynamic Report heading through expression

1. Add a new blank report
    a. Right click Reports folder in Soln Explorer, click Add -> New Item.
        i. Select report item template
        ii. Give DrillDownReportDemo as report name
2. Create a local data source based on shared data source and define a data set using following select statement:

```
SELECT      Customers.CustomerID, Customers.CompanyName, Customers.Country,
Customers.City, Orders.OrderID, Orders.OrderDate, Orders.Freight
FROM        Customers INNER JOIN
            Orders ON Customers.CustomerID = Orders.CustomerID
ORDER BY Customers.Country, Customers.City, Customers.CompanyName
```

3. Drag a table report item.
4. Drag Orderid, OrderDate and Freight fields on to table columns.
5. Right click OrderId field , Add Group , Parent Group under Row Group
    a. Select companyname field in drop down
6. Similarly Right click CompanyName field and a parent row group using field City.
7. Again Right click City field and a parent row group using field Country
8. Now in Row Groups pane below double click every group and rename the groups as grpcompanyname, grpcity and grpcountry
9. Similarly change the column header for those group fields in the table.
10. Add Subtotal to OrderId at company level.
    a. Right click orderid field, Select Add Total
    b. Aggregation will be added for orderid and freight.
    c. Right click and edit the aggregate expresion for OrderId and change it to:

```
="Total   Orders " + cstr(Count(Fields!OrderID.Value))
```

11. Similarly right click companyname and city add subtotals for it. and change sum(orderid) expression to Count(Orderid)
12. Format the table as below:-

Country	City	Customer	Order ID	Order Date	Freight
[Country]	[City]	[CompanyName]	[OrderID]	[OrderDate]	[Freight]
			«Expr»		
		Total	**[Count(Orde**		**[Sum(Freight)**
	Total		[Count(Orde		[Sum(Freight)

13. Select the City and Country Field textboxes and note the textbox names.
14. Double click grpcompanyname group in row groups pane, goto visibility tab, select hide, check Display can be toggled checkbox and select City Field textbox name from the drop down. Click.
15. Similarly for grpcity group set the Country Field Textbox name for toggle.

16. Preview the report.

Country	City	Customer	Order ID	Order Date	Freight
⊞ Argentina	Total		16		598.5800
⊞ Austria	Total		40		7391.5000
⊞ Belgium	Total		19		1280.1400
⊞ Brazil	Total		83		4880.1900
⊞ Canada	Total		30		2198.0900
⊞ Denmark	Total		18		1396.1900

17. Switch to design tab, right click data set select Query and change the existing query to:- (note the WHERE clause)

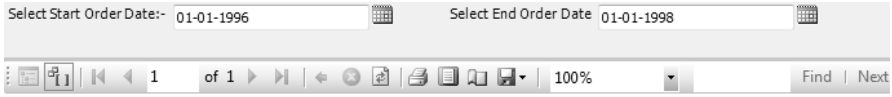
```
SELECT    Customers.CustomerID, Customers.CompanyName, Customers.Country,
Customers.City, Orders.OrderID, Orders.OrderDate, Orders.Freight
FROM      Customers INNER JOIN
              Orders ON Customers.CustomerID = Orders.CustomerID
WHERE     (Orders.OrderDate BETWEEN @fromdate AND @todate)
ORDER BY Customers.Country, Customers.City, Customers.CompanyName
```

18. Note in report data window 2 parameters will be created.
19. Double click @fromdate parameter
    a. Give prompt as Select Start Order Date:-
    b. Set data type to datetime
    c. Goto Default Values tab, select specify values
    d. Click add Type 01/01/1996, click ok
20. Similarly configure @todate parameter
    a. Prompt: Select End Order Date:-
    b. Default value 01/01/1998

21. From the toolbox drag a textbox on top of table. Set arial, 14 pt bold size and dark maroon color. Right click the textbox and set following expression :

```
="Orders Placed by Customers between " +
            cstr(Parameters!fromdate.Value) +  " and " +
                                    cstr(Parameters!todate.Value)
```

22. Click preview tab, You can expand the country and the city to get the further sales details as shown below:-



Orders Placed by Customers between 1/1/1996 and 1/1/1998

Country	City	Customer	Order ID	Order Date	Freight
⊞ Argentina	Total		6		117.6600
⊞ Austria	Total		29		5000.7400
⊞ Belgium	Total		9		518.0500
⊟ Brazil	⊞ Campinas	**Total**	**7**		**309.0600**
	⊞ Resende	**Total**	**6**		**131.7400**
	⊞ Rio de Janeiro	**Total**	**22**		**945.1100**
	⊞ Sao Paulo	**Total**	**21**		**2068.8600**
	Total		56		3454.7700
⊞ Canada	Total		22		1828.4000

Lab 3	Using Subreport
Description	We will create 2 reports one which will list product categories and other will display products. The products report will be embedded or added as a subreport in the product categories report.
Objective	To learn 1. How to add another report as a subreport 2. How to link subreport to parent report via parameters

1. Create a report named ProductCategoriesListing which displays the category details in a table as shown below:

Category ID	Category Name	Description
[CategoryID]	[CategoryName]	[Description]

2. The DataSet Query is as below:

```
SELECT      CategoryID, CategoryName, Description
FROM        Categories
ORDER BY    CategoryName
```

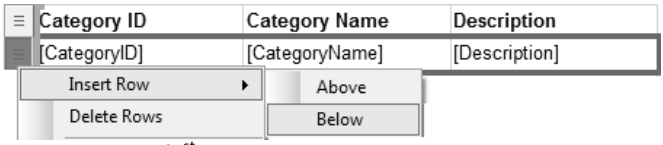
3. Preview the report
4. Create another report named ProductsListing which will show product details in a table as shown below:-
   Note: Set the dimensions of report body so as it matches the dimensions of table report item.

Product ID	Product Name	Unit Price
[ProductID]	[ProductName]	[UnitPrice]

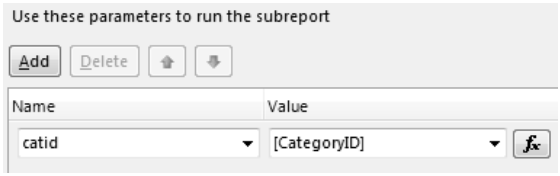
5. The Data Set Query of this report:-

```
SELECT      ProductID, ProductName, UnitPrice,
                UnitsInStock, CategoryID
FROM        Products
WHERE       (CategoryID = @catid)
ORDER BY    ProductName
```

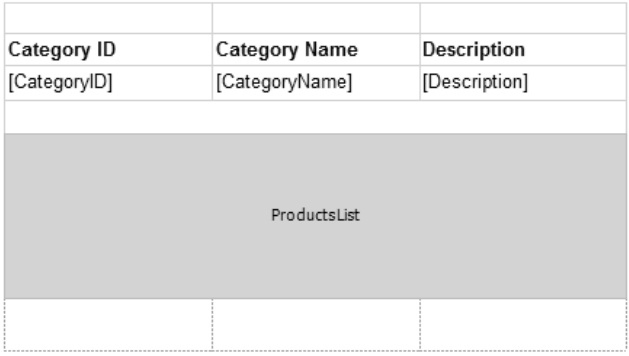
6. In the report data window goto @catid parameter properties
   a. Set data type: integer
   b. Select parameter visibilty to hidden
   c. Goto Default Values tab, and specify default value as 1
7. Preview the report to ensure that it always displays category id 1 products.
8. Open ProductCategoriesListing report.
   a. Right clck the field row in left grey area, and add a row below.Add such 2 blank rows.



b. Select the cells of 1st blank row and merge the cells.
c. Select the cells of 2nd blank row and merge the cells.
d. In the 2nd row drag Subreport report item from toolbox.
e. Right Click the subreport and in the subreport properties
    i. Select ProductsList as subreport.
    ii. Goto parameters tab, click add and set as shown below:



9. Right click column header row and add a blank row above
10. Right click subreport row and add a blank row below.
11. Report design is as below:-



12. Preview the report

Category ID	Category Name	Description
1	Beverages	Soft drinks, coffees, teas, beers, and ales

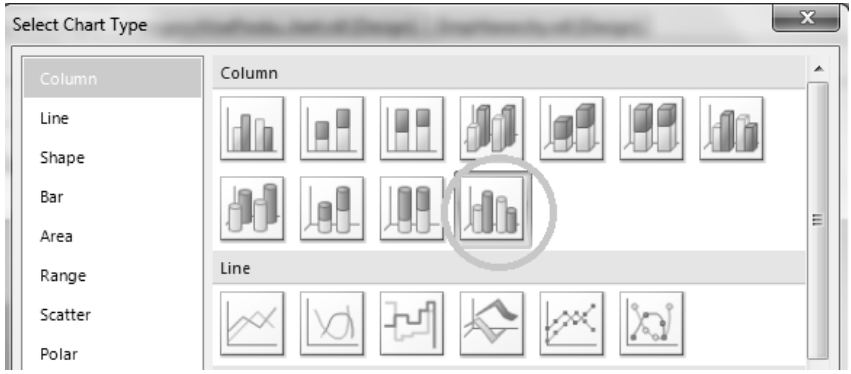
Product ID	Product Name	Unit Price
1	Chai	18.0000
2	Chang	19.0000
39	Chartreuse verte	18.0000
38	Côte de Blaye	263.5000
24	Guaraná Fantástica	4.5000
43	Ipoh Coffee	46.0000
76	Lakkalikööri	18.0000
67	Laughing Lumberjack Lager	14.0000
70	Outback Lager	15.0000
75	Rhönbräu Klosterbier	7.7500
34	Sasquatch Ale	14.0000
35	Steeleye Stout	18.0000

Lab 4	**Creating a Report using Chart**
Description	We will create a report which will have a Column Chart which will display Region wise customer distribution
Objective	To learn 1. How to use Chart to display the Information

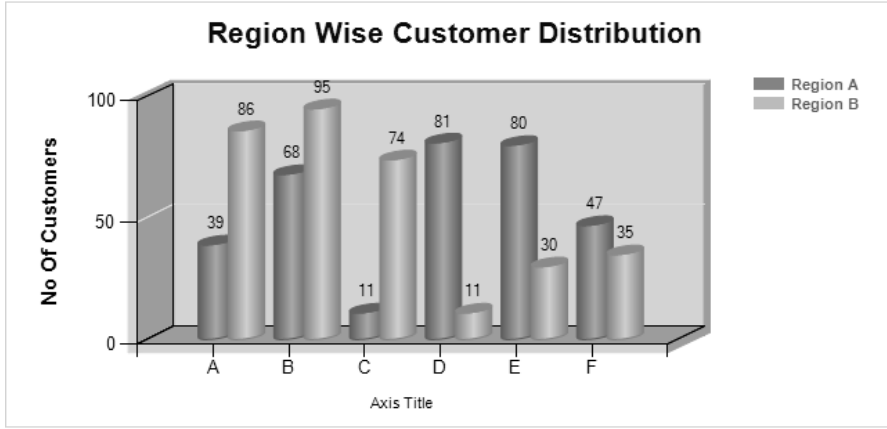
1. Add a new blank report
   a. Right click Reports folder in Soln Explorer, click Add -> New Item.
      i. Select report item template
      ii. Give RegionWiseCustomerDistribution as report name
2. Create a local data source based on shared data source and define a data set using following select statement:

```
SELECT    Region, COUNT(*) AS NOOFCUSTOMERS
FROM      Customers
WHERE Region is not null
GROUP BY Region
```

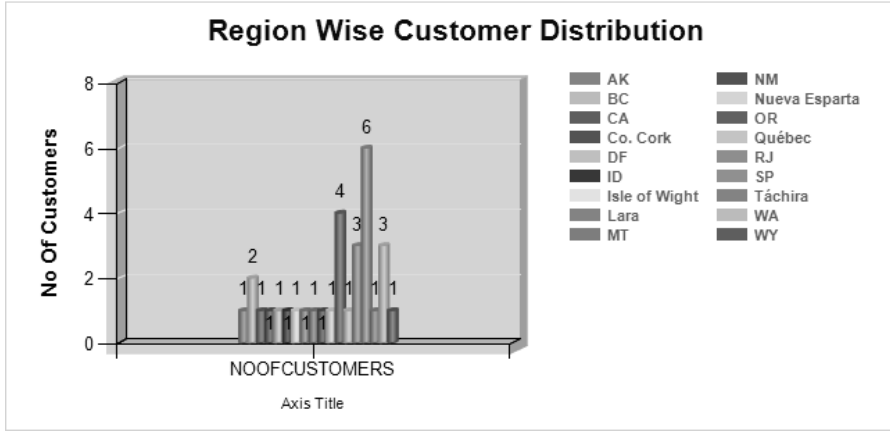
3. Drag a chart and select 3D chart type.



4. Drop "NOOFCUSTOMERS" field on Data Field section and Region Field on Series section
5. Rt click chart in the middle and select show data labels.
6. Change the Chart Title and Axis title as below



7. Run the report.



Lab 5	Creating a Hierarchical Report
Description	We will create a report which will show employees listed according to their reporting heirarchy
Objective	To learn 1. How to create a hierarchical report.

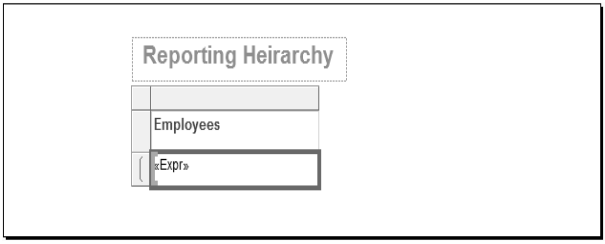
1. Add a new blank report
   a. Right click Reports folder in Soln Explorer, click Add -> New Item.
      i. Select report item template
      ii. Give EmpHeirarchyReport as report name
2. Create a local data source based on shared data source and define a data set using following select statement:

```
SELECT    EmployeeID, LastName, FirstName,ReportsTo
FROM      Employees
```

3. Drag a table report item. Delete all columns except one
4. Right click the only cell in the Details Row and write following expression

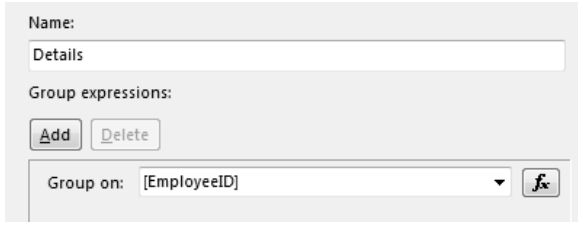
=trim(Fields!LastName.Value) + " " +
Fields!FirstName.Value

5. Give Employees as column heading and drag texbox and provide report header as below



6. Rt Click the expression TextBox above, goto Alignment TAB, and write following expr for Left padding option
   =CStr(5 + Level()*16) + "pt"

7. Double click the details pane in Row Groups.
8. Add a group on EmployeeId field



9. Goto Advanced TAB, and set recursive parent to ReportsTo field.
10. Run the report.

Reporting Heirarchy

Employees
Fuller Andrew
Davolio Nancy
Leverling Janet
Peacock Margaret
Buchanan Steven
Suyama Michael
King Robert
Dodsworth Anne
Callahan Laura

Lab 6	**Creating and Customizing Report Model and using Report Builder**
Description	We will create a Report Model based on AdventureWorks Database tables and use it in Report Builder to create a report.
Objective	To learn 1. How to Create and Customize Report Model 2. How to create report using Report Builder

1. In the Microsoft Visual Studio window, click File, point to New, and then click Project.
2. Click Report Model Project.In the Name box, type Adventure Works Model. Click OK.
3. In Solution Explorer, right-click Data Sources, and then select Add New Data Source connecting AdventureWorks database
4. In Solution Explorer, right-click the Data Source Views folder and select Add New Data Source View.
5. On the Select Tables and Views page, select all the tables in the Available objects area, and then click the arrow button.
6. In Solution Explorer, right-click Report Models and then select Add New Report Model.
7. The Report Model Wizard opens.
8. On the Welcome to the Report Model Wizard page, click Next.
9. On the Select Data Source View page, verify that the AdventureWorks data source view you created in the previous procedure is selected.
10. Click Next.
11. In the Select model language drop-down list of the Select report model generation rules page, select a language for the model.
12. The language you select tells Model Designer which language-specific code it should use when generating user-friendly names for the tables and columns in your database. After you complete the wizard, you can set the Culture property on the model.
13. Accept the default rules.
14. Click Next.
15. On the Collect Model Statistics page, verify that the Update model statistics before generating option is selected, and then click Next.

16. On the Completing the Wizard page, verify that AdventureWorks appears in the Name box, and then click Run.
17. The report model is created.
18. When the wizard is finished, click Finish.
19. The AdventureWorks.smdl file appears in Solution Explorer. You have successfully created a report model. In the next procedure, you will explore the model.
20. ⊟To explore the report model
21. In the Model pane, select the Customer entity.
22. View the center pane. The contents of the Customer entity appear. The attributes include: #Customers, #CustomerID, Account Number, Customer Type, and Modified Date.
23. In the List view, select the #Customers attribute, and then view the contents of the Properties window.
24. In the List view, select the Customer Type attribute, and then view the contents of the Properties window.
25. In the List view, select the Sales Order Headers role, and then view the contents of the Properties window.
26. On the File menu, click Save All.
27. Next, you will deploy the report model to the report server.
28. ⊟To deploy the report model
29. On the Project menu, click AdventureWorks Model Properties.
30. After you confirm the deployment properties that you want to use, click OK.
31. On the Build menu, click Deploy AdventureWorks Model.
32. If the deployment is successful, a Deploy succeeded message is displayed in the Output window. To view the Output window, on the View menu, click Output. If the deployment fails, you need to troubleshoot the reported error.
33. In the next procedure, you will test the report model in Report Builder.
34. ⊟To use the model in Report Builder
35. Open your browser.
36. In the Address bar, type http://localhost/reports.
37. The Home page for SQL Server Reporting Services opens.
38. On the Report Manager toolbar, click Report Builder.

39. In the Getting Started pane, select AdventureWorks and then click OK.
40. In the Entities list, select Sales Order Header.
41. From the Entities list, drag the Sales Person entity to the design area.
42. Notice that the Sales Person National ID Number and Commission Pct fields are added to the design area.
43. In the Fields list, double-click Total Total Due.
44. Notice that the Total Total Due field is not formatted as a monetary value.
45. To see the results of your query, click Run Report.
46. On the File menu, click Exit
47. To add a description to a report model
48. Return to the AdventureWorks report model project open in the Business Intelligence Development Studio window.
49. In the Tree view, select the Model node.
50. In the Properties window, locate the Description property.
51. In the Description box, type the following: This report model is for the AdventureWorks database.
52. In the Tree view, select the Sales Person entity, and then type the following in the Description box: All sales people are employees.
53. In the List view, select the Sales Quota attribute, and then type the following in the Description box: Sales quotas are updated quarterly.
54. On the File menu, click Save All.
55. To add a folder to the report model
56. In the Tree view, right-click Model, point to New, and then click Folder.
57. The new folder is added at the bottom of the list of entities.
58. Right-click the new folder, and select Rename.
59. Type Product Details.
60. You have successfully added a new folder. Next, to organize the contents of your model, you will add model items to the folder.
61. ⊟To add entities to the folder
62. In the Tree view, verify that Model is selected.

63. In the List view, select all the entities that begin with the word Product, except for the Product entity itself.

64. Drag the selected entities to the Product Details folder in the Tree view.

65. You have successfully organized the Product entities within the model.

66. To view the contents of Product Details, click the folder.

67. To rename model items
68. In the Tree view, right-click the Sales Order Header entity, and then click Rename.

69. Type the following: Sales Order.

70. With the Sales Order entity selected, locate the Sales Order Details role in the List view.

71. Right-click the Sales Order Details role, and then click Rename.

72. Type the following: Sales.

73. In the List view, expand the Total Due attribute.

74. Right-click Total Total Due, and then click Rename.

75. Type the following: Sum Total Due.

76. In the Tree view, select the Sales Order Detail entity, and rename the entity Sales.

77. In the Tree view, select the Sales Person entity.

78. Notice that there is a role called Sales Person within the Sales Person entity. The name of this role is misleading because this role really links to the Employee entity.

79. Rename the Sales Person role to Employee.

80. On the File menu, click Save All.

81. To hide a model item
82. In the Tree view, select the Sales Order entity.

83. In the List view, select the Rowguid attribute.

84. In the Properties window, select the Hidden property.

85. In the properties drop-down list, select True.

86. On the File menu, select Save All.

87. In the Tree view, select the Sales Person entity.

88. In the Properties window, select DefaultDetailAttributes.

89. To edit the property, click the ellipsis (…) button.

90. In the Members list of the AttributeReference Collection Editor dialog box, select Commission Pct, and then click Remove.

91. Click Add.

92. The Default Detail Attributes dialog box appears.

93. In the Entities list, select the Employee entity and then select the Contact entity.

94. In the Fields list, select First Name, Middle Name, and Last Name, and then click OK.

95. Click OK again.

96. In the Properties window, note that the DefaultDetailAttributes property indicates that there are four attributes. When the user adds the Sales Person entity to their report, the sales person's National ID Number, and first, middle and last names are added.

97. On the File menu, click Save All.

98. ⊟To deploy the report model
99. On the Build menu, click Deploy AdventureWorks Model.

100. ⊟To view report model changes in Report Builder
101. Launch Report Builder.

102. In the Getting Started pane, select the AdventureWorks model, and then click OK.

103. To see the Product Details folder, scroll down the list of entities.

104. This folder was created in Lesson 3.

105. To see the contents of the Product Details folder, click Product Details.

106. The entities in this folder were added to the folder in Lesson 3.

107. In the Entities list, find the Sales Orders and Sales entities.

108. These entities were renamed in Lesson 4.

109. Select the Sales Orders entity, and then drag the Sum Total Due field to the design area.

110. This field was renamed in Lesson 4 and formatted in Lesson 7.

111. Drag the Sales Person entity to left of the Sum Total Due field.

112. Notice that the National ID Number, First Name, Middle Name, and Last Name fields are added to the report. These are the default detail attributes that you added to the

entity in this lesson. This is the same report that you created earlier except that now your new model changes are displayed.

113. To view the results of your report, click Run Report.

114. To return to the design area, click Design Report.