**SQL Server Reporting Services (SSRS) Intro Assignment**

This assignment is similar to the work that a junior BI analyst, or reporting analyst would perform. As such completion of this assignment gives you an example of work that you can discuss with recruiters. Here the queries are given to you, you do not have to alter the queries. Add all requested functionality in SSRS.

Management is preparing their annual report that examines regional sales performance across both the reseller channel (Query 1 & 2 below) and the Internet channel (Query 3 & 4 below). Please create a report to management, which includes a cover page, executive summary, and the four reports each with textual analysis. Each report will use one of the queries below, so the majority of the hard work has already been completed. When you run each query inside the report be sure that your data source connects to AdventureWorksDW2012.

Add a heading, a chart and a logo to each report. You can add more than one chart if it helps you understand the data. **Add the columns of data to each report that help to explain the regional sales performance and add calculated fields as well according to your insight and abilities**. Be sure to format all columns and headings. For each report, interact with the report until you have a feeling for the data. When you have completed the design activity, run the report and copy/paste a portion of the first page of the report to a word processing document. Crop the image and add a paragraph or two of analysis to each report (above the report). Start each new report on a new page and use page numbers. The goal is to turn in a professional looking document, and better grades are given for more detailed analysis, professional formatting, and ‘going above and beyond the minimums’…, rather than a quick cut and paste job.  
  
You can use a shared data source connecting to AventureWorksDW2012 and place all four reports into one project. Recall that when you want to build a list for the dropdown control (which is used in the parameterized report), you need to create a second dataset which uses a separate query.

|  |  |  |
| --- | --- | --- |
| 1 | SELECT st.SalesTerritoryCountry, r.resellerkey, r.ResellerName, Count(rs.SalesOrderNumber) AS [# Sales]  , SUM(rs.[OrderQuantity]) as [Units]  , SUM([SalesAmount]) as [Revenue]  , SUM( [TotalProductCost]) AS [Total Cost]  , SUM([DiscountAmount]) AS [Total Discounts Granted]  FROM [dbo].[DimReseller] as r  INNER JOIN dbo.FactResellerSales as rs  ON rs.ResellerKey = r.ResellerKey  INNER JOIN dbo.DimSalesTerritory as st  on st.SalesTerritoryKey = rs.SalesTerritoryKey  WHERE DATEPART(year, rs.OrderDate) = 2007  GROUP BY st.SalesTerritoryCountry, r.resellerkey, r.ResellerName  ORDER BY st.SalesTerritoryCountry, [# Sales] DESC | Please make a report that displays the resellers retrieved by the query on the left. Just copy the query as is into the query builder when building your dataset. Any additional functionality (such as sorting) can often be done in the SQL, and a good analyst drives as much functionality into the SQL query, but here you are asked here to add all extra functionality in SSRS.  In Data Tools |SSRS please add a parent group to the details row (which has the reseller information). Add a parent group using SalesTerritoryCountry, and enable drill-down (visibility to the details resellers group). Add totals for SalesTerritoryCountry. |
|  | Sort the resellers within each Country on the $ Total sales field (high to low), and format the numeric fields. Use the tablix properties | sorting option. Add one or more charts in SSRS report that explain the findings. The charts should show a summary of the total country $ sales or units sold. When running the report, print screen the first page of the report and copy/paste/crop the report into MS-Word. Add a paragraph of your analysis. | |
| 2 | SELECT st.SalesTerritoryCountry, r.resellerkey, r.ResellerName  , DATEPART(quarter, rs.orderDate) as [Quarter]  , Count(rs.SalesOrderNumber) AS [# Sales]  , SUM(rs.[OrderQuantity]) as [Units]  , SUM([SalesAmount]) as [Revenue]  , SUM( [TotalProductCost]) AS [Total Cost]  , SUM([DiscountAmount]) AS [Total Discounts Granted]  FROM [dbo].[DimReseller] as r  INNER JOIN dbo.FactResellerSales as rs  ON rs.ResellerKey = r.ResellerKey  INNER JOIN dbo.DimSalesTerritory as st  ON st.SalesTerritoryKey = rs.SalesTerritoryKey  WHERE DATEPART(year, rs.OrderDate) = 2007  GROUP BY st.SalesTerritoryCountry, r.resellerkey, r.ResellerName  , DATEPART(quarter, rs.orderDate)  ORDER BY st.SalesTerritoryCountry, [# Sales] DESC | Be sure to watch the parameterized reports video series before starting this report.   Staying in the same project, add a new report, and specify the datasource in the report. Copy this query into the SSRS query builder and run it. Next parameterize the report on SalesTerritoryCountry (the values are Australia, Canada, France, Germany, United Kingdom, and United States). While you can specify the available values for the parameter by typing them in, a more realistic scenario is to add a new dataset and use a query that retrieves the values. This methodology is superior as values will change over time, and using a new query will always produce an up to date list.  So add a new dataset for the dropdown list used to specify the parameter. Use a SELECT DISTINCT Englishcountryregionname FROM the dimGeography (or SELECT DISTICT salesTerritoryCountry from the dimSalesTerritory) table. After you create the second dataset, open up you original dataset and add parameter on the country field. Then go into the paramter’s properties and set the available values to your dataset of countries. Build a drop-down list of values and parameterize your report. |
|  | Your report should show several measures for individual resellers, so add some calculated fields of your own design. This query is different from #1 in that it is parameterized and has data grouped on quarters (sales in the reseller channel are lumpy and large, so there are many months without sales, therefore it is common to group sales by quarter). Be sure to leverage that and make this report markedly different from the first, you can add a grouping on quarter, or parameterize by country and quarter (note there are not sales for each quarter), or even use a matrix report.  Add one or two charts (perhaps show best resellers for selected country). Format professionally, with a logo, numerical formatting and a title.  When running the report, print screen the first page of the report and copy/paste/crop the report into MS-Word. Add a paragraph of your analysis after interacting with the dataset for a while. This project is not about quickly providing a pretty picture. It is about analyzing and interpreting data and providing analysis and recommended actions. | |

|  |  |  |
| --- | --- | --- |
| 3 | SELECT [EnglishCountryRegionName], [StateProvinceCode], [City]  , c.CustomerKey,[LastName],[FirstName] AS [Customer]  , [BirthDate], [YearlyIncome]  , COUNT(s.[SalesOrderNumber]) AS [#Orders]  , SUM([SalesAmount]) AS [Total Sales]  FROM DimCustomer as c INNER JOIN [dbo].[DimGeography] as g  on c.[GeographyKey] = g.GeographyKey  INNER JOIN [dbo].[FactInternetSales] as s  on s.[CustomerKey] = c.[CustomerKey]  GROUP BY [EnglishCountryRegionName], [StateProvinceCode], [City], c.CustomerKey, [LastName], [FirstName],[BirthDate], [YearlyIncome] | Staying in the same project, add a new report, and consume the datasource in the report. Copy this query into the SSRS query builder and run it. Management needs a regional list of sales by customers for the **Internet sales Channel**. Again create a parameterized report on country and inside the report, add grouping on (state province, then City).   So you are building a customer list that is grouped on state province code (level 1), and then within city (level 2). The customer info is the details band.  Please refer to the instructions above for formatting. Including add an appropriate heading.  When running the report, print screen the first page of the report and copy/paste/crop the report into MS-Word. Add a paragraph of your analysis. |

Here is the query for Report #4. Instructions are on the next page. While the top query works well IN SSMS, in SSRS you will have to use the second query as your starting point in SSRS (modifications will be needed). Differences are highlighted in yellow.

|  |  |
| --- | --- |
| 4 | SELECT [EnglishCountryRegionName], [City], c.CustomerKey  , CONCAT([LastName], ', ' ,[FirstName]) AS [Name], pc.[EnglishProductCategoryName] AS [Category]  , SUM([OrderQuantity]) as [Qty]  , SUM([SalesAmount]) AS [Total Sales]  FROM [dbo].[FactInternetSales] as s  INNER JOIN [dbo].[DimCustomer] as c ON c.CustomerKey = s.CustomerKey  INNER JOIN [dbo].[DimGeography] as g ON g.GeographyKey = c.GeographyKey  INNER JOIN [dbo].[DimProduct] as p ON p.ProductKey = s.ProductKey  INNER JOIN [dbo].[DimProductSubCategory] as sc ON sc.ProductSubcategoryKey = p.ProductSubcategoryKey  INNER JOIN [dbo].[DimProductCategory] as pc ON pc.ProductcategoryKey = sc.ProductcategoryKey  WHERE [EnglishCountryRegionName] = 'United States'  GROUP BY [EnglishCountryRegionName], [City],pc.[EnglishProductCategoryName], c.CustomerKey, CONCAT([LastName], ', ' ,[FirstName])  ORDER BY [EnglishCountryRegionName], [City], pc.[EnglishProductCategoryName], c.CustomerKey, CONCAT([LastName], ', ' ,[FirstName])  Interestingly, while the above code works just fine in SSMS the CONCAT function will not work in SSRS  SELECT g.EnglishCountryRegionName, g.City, c.CustomerKey, c.FirstName + ' ' + c.LastName AS Customer  , pc.EnglishProductCategoryName AS Category, SUM(s.OrderQuantity) AS Qty, SUM(s.SalesAmount)  AS [Total Sales]  FROM FactInternetSales AS s INNER JOIN  DimCustomer AS c ON c.CustomerKey = s.CustomerKey INNER JOIN  DimGeography AS g ON g.GeographyKey = c.GeographyKey INNER JOIN  DimProduct AS p ON p.ProductKey = s.ProductKey INNER JOIN  DimProductSubcategory AS sc ON sc.ProductSubcategoryKey = p.ProductSubcategoryKey INNER JOIN  DimProductCategory AS pc ON pc.ProductCategoryKey = sc.ProductCategoryKey  WHERE (g.EnglishCountryRegionName = 'United States')  GROUP BY g.EnglishCountryRegionName, g.City, pc.EnglishProductCategoryName, c.CustomerKey, c.FirstName + ' ' + c.LastName  ORDER BY g.EnglishCountryRegionName, g.City, Category, c.CustomerKey |
| 4 | Create a new report in the same project. Generate a summary of sales to Internet customers residing in France. The customers should be grouped on city and country. When testing the report you will have to change the WHERE clause to France. Ultimately the report will be parameterized by country so please make a parameterized matrix report (filtering by country, grouping the customers on city down the page. Across the page place the product categories). Open the query in the dataset and add the parameter to the country field as before. Also place a report on top showing the Total sales for each city in the country that was selected. Here is an example – the customers for Berlin are shown in the report, but the Sales by city are shown in the chart.  The Matrix report’s columns will display the category sales for each product category for each city in France and when drilled into show the individual customers. Interact with the data for 10 minutes then add your analysis. When running the report, print screen the report and copy/paste/crop the report into MS-Word. |
|  |  |

#5 Optional (will be used to assign top grades) – Make another report of your own design that examines sales by product category (by cities within countries) for 2007 in the Internet channel. You can modify the query #4 above.