Data Warehouse Lab 2

Task 1

Prepare a SQL query that results in a report of sales made by individual customers in different product categories. Defined as:

a. Order('Lastname, Firstname', Product Category, Number of orders, Sales value)

i. Sales value should be calculated using unit prices, discounts, and quantity

SELECT Person.LastName, FirstName, ProductCategory.Name, SUM(SalesOrderDetail.OrderQty) AS 'Number of orders', SUM(SalesOrderDetail.LineTotal) AS 'Sales Value'
FROM Person.Person, Sales.Customer, Sales.SalesOrderHeader, Sales.SalesOrderDetail, Production.Product, Production.ProductSubcategory, Production.ProductCategory
WHERE Person.BusinessEntityID = Customer.PersonID AND Customer.CustomerID = SalesOrderHeader.CustomerID AND
SalesOrderDetail.SalesOrderID = SalesOrderHeader.SalesOrderID AND Product.ProductID = SalesOrderDetail.ProductID
AND ProductSubcategory.ProductSubcategoryID = Product.ProductSubcategoryID
AND ProductCategory.ProductCategoryID = ProductSubcategory.ProductCategoryID
GROUP BY Person.LastName, Person.FirstName, ProductCategory.Name

Results

	LastName	FirstName	Name	Number of orders	Sales Value
1	Abel	Catherine	Accessories	117	2782.908000
2	Abel	Catherine	Bikes	115	90827.979000
3	Abel	Catherine	Clothing	181	5025.781400
4	Abel	Catherine	Components	86	14251.998000
5	Abercrombie	Kim	Accessories	77	1225.774500
6	Abercrombie	Kim	Bikes	545	460821.465300
7	Abercrombie	Kim	Clothing	226	5396.634420
8	Abercrombie	Kim	Components	210	51967.482100
9	Acevedo	Humberto	Accessories	10	204.287500
10	Acevedo	Humberto	Bikes	42	59468.164825
11	Acevedo	Humberto	Clothing	26	435.385200
12	Acevedo	Humberto	Components	18	7833.355800
13	Achong	Gustavo	Accessories	55	997.213500
14	Achong	Gustavo	Bikes	100	104921.589350
15	Achong	Gustavo	Clothing	211	5839.127855
16	Achong	Gustavo	Components	82	19345.051600
17	Ackerman	Pilar	Accessories	196	5192.412108
18	Ackerman	Pilar	Bikes	231	187435.529550
19	Ackerman	Pilar	Clothing	412	10622.854686
20	Ackerman	Pilar	Components	136	17918.988000

Prepare a similar report using:

a. MS Excel Pivot Table using source AdventureWorks database – prepare a single sheet

Row Labels	Column Labels						
	Accessories		Bikes		Clothing		Compone
	Sum of OrderQty	Sum of LineTotal	Sum of OrderQty	Sum of LineTotal	Sum of OrderQty	Sum of LineTotal	Sum of O
Adams							
Aaron	3	36.96	1	2294.99	1	49.99	
Adam	2	39.98					
Alex	2	39.98					
Angel	3	67.58					
Carlos			2	4347.76	2	123.98	
Connor	4	39.25	1	2319.99			
Elijah	1	4.99					
Eric	2	141.98			1	69.99	
Evan	4	90.95			1	49.99	
Gabriel	1	34.99	1	2319.99			
Hunter	2	56.97	2	5873.26			
Isaac	2	36.59	1	2443.35			
Isaiah	1	4.99					
Jack			1	1700.99	2	62.98	
Jackson	1	21.98			2	119.98	
James	4	51.26	3	7122.41	1	8.99	
Jason	1	21.98	1	2294.99	1	63.5	
Jesse	5	56.26	2	3062.34			
Jonathan	4	83.96	3	7122.41			
Jordan	2	28.98	1	1700.99	2	78.48	

b. SQL query from (1.) as the source – prepare a single sheet

	A	B	C	D	E
	LastName	FirstName	Name	Number of orders	Sales Value
2	Abel	Catherine	Accessories	117	2782.908
3	Abel	Catherine	Bikes	115	90827.979
4	Abel	Catherine	Clothing	181	5025.7814
5	Abel	Catherine	Components	86	14251.998
6	Abercrombie	Kim	Accessories	77	1225.7745
7	Abercrombie	Kim	Bikes	545	460821.4653
8	Abercrombie	Kim	Clothing	226	5396.63442
9	Abercrombie	Kim	Components	210	51967.4821
10	Acevedo	Humberto	Accessories	10	204.2875
11	Acevedo	Humberto	Bikes	42	59468.16483
12	Acevedo	Humberto	Clothing	26	435.3852
13	Acevedo	Humberto	Components	18	7833.3558
14	Achong	Gustavo	Accessories	55	997.2135
15	Achong	Gustavo	Bikes	100	104921.5894
16	Achong	Gustavo	Clothing	211	5839.127855
17	Achong	Gustavo	Components	82	19345.0516
18	Ackerman	Pilar	Accessories	196	5192.412108
19	Ackerman	Pilar	Bikes	231	187435.5296
20	Ackerman	Pilar	Clothing	412	10622.85469
21	Ackerman	Pilar	Components	136	17918.988

Task 2

1. Report the number of orders per different status in different years.

Sum of OrderQty	Column Labels	
Row Labels	5	Grand Total
2011	12888	12888
2012	68579	68579
2013	131788	131788
2014	61659	61659
Grand Total	274914	274914

2. Identify the year with highest sales values – display all years ordered by the sales value.

	A	B
1	Row Labels ↓	Sum of LineTotal
2	⊞ 2013	43622479.05
3	⊞ 2012	33524301.32
4	⊞ 2014	20057928.81
5	⊞ 2011	12641672.21
6	Grand Total	109846381.4

Sum of LineTotal from Largest to Smallest

3. Report the average order value over different years and sales locations – display all data.

|	A	B	C	D	E	F
1	OrderQty	1	▼			
2						
3	Average of LineTotal	Column Labels ▼				
4	Row Labels ▼	2011	2012	2013	2014	Grand Total
5	Australia	3309.192884	2382.043927	521.6531095	383.4048932	674.0231374
6	Canada	1061.209499	969.8408432	229.0944085	189.6822879	324.6830809
7	Central	812.4762971	520.2013034	406.1927963	376.2535688	488.9581303
8	France	3054.539406	1514.560435	413.2131028	321.4249061	469.9856357
9	Germany	3047.661047	2209.119424	440.1753577	360.7615031	511.3875716
10	Northeast	638.757209	538.3956333	453.2122303	423.1350882	505.051349
11	Northwest	1972.355307	1259.981058	310.2142044	275.2519627	424.3317802
12	Southeast	734.3494325	528.2830522	436.6663883	431.8281768	506.0929282
13	Southwest	1630.593498	1141.821975	354.5149194	324.599427	471.0422403
14	United Kingdom	3101.612116	1438.730915	410.9969297	345.6174328	485.4371387
15	Grand Total	1814.040795	1227.792141	385.0644744	318.4115127	488.5861179

Avg order value

4. Report the number of products per subcategory, limited to subcategories containing word "Bike" in their name.

Count of Name	Column Labels ▼					
Row Labels ▼	Bike Racks	Bike Stands	Mountain Bikes	Road Bikes	Touring Bikes	Grand Total
All-Purpose Bike Stand		1				1
Hitch Rack - 4-Bike	1					1
Mountain-100 Black, 38			1			1
Mountain-100 Black, 42			1			1
Mountain-100 Black, 44			1			1
Mountain-100 Black, 48			1			1
Mountain-100 Silver, 38			1			1
Mountain-100 Silver, 42			1			1
Mountain-100 Silver, 44			1			1
Mountain-100 Silver, 48			1			1
Mountain-200 Black, 38			1			1
Mountain-200 Black, 42			1			1
Mountain-200 Black, 46			1			1
Mountain-200 Silver, 38			1			1
Mountain-200 Silver, 42			1			1
Mountain-200 Silver, 46			1			1
Mountain-300 Black, 38			1			1
Mountain-300 Black, 40			1			1
Mountain-300 Black, 44			1			1
Mountain-300 Black, 48			1			1
Mountain-400-W Silver, 38			1			1
Mountain-400-W Silver, 40			1			1
Mountain-400-W Silver, 42			1			1

5. Identify top 10 products with highest sales values – add a slicer with order date and filter the data to year 2013

	A	B
1	**Row Labels**	**Sum of LineTotal**
2	Mountain-200 Black, 38	2212974.783
3	Mountain-200 Black, 42	1932388.291
4	Mountain-200 Silver, 38	1815673.093
5	Mountain-200 Black, 46	1666660.024
6	Mountain-200 Silver, 46	1657616.282
7	Mountain-200 Silver, 42	1596847.227
8	Road-250 Black, 44	1262950.163
9	Road-250 Black, 48	1154069.879
10	Road-350-W Yellow, 48	1097415.131
11	Touring-1000 Blue, 60	1086388.752
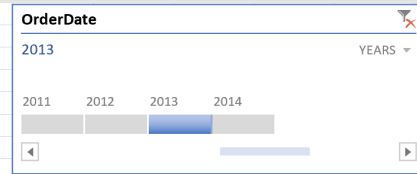
Top 10 Products ordered by largest to smallest

6. Identify the color (product) with the highest popularity in year 2011 for each product category – show all colors and all categories.

| Sum of OrderQty Column Labels					
Row Labels	**Accessories**	**Bikes**	**Clothing**	**Components**	**Grand Total**
Blue	360				360
White			674		674
Silver		1234		268	1502
Multi			1572		1572
Black		341	2613	549	3503
Red		331	4116	830	5277
Grand Total	**1032**	**7963**	**2246**	**1647**	**12888**
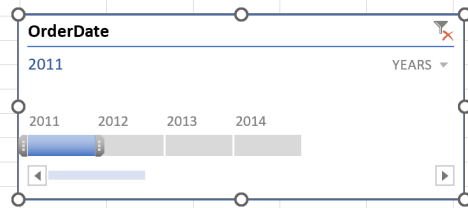
Popular colors and categories for each product by smallest to largest

7. Report the sales representative's (sales person) default sales location name (sales territory which is assigned to sales person and not to the sales itself) overall sales values and yearly sales values.

Sum of LineTotal Column Labels										
Row Labels	**Australia**	**Canada**	**Central**	**France**	**Germany**	**Northeast**	**Northwest**	**Southeast**	**Southwest**	**United Kingdom**	**Grand Total**
274	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
275	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
276	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
277	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
278	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
279	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
280	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
281	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
282	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
283	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
284	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
285	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
286	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
287	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
288	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
289	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
290	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
(blank)	10655335.96	16355770.45	7909009.006	7251555.647	4915407.596	6939374.481	16084942.55	7879655.072	24184609.6	7670721.035	109846381.4
Grand Total	**10655335.96**	**16355770.45**	**7909009.006**	**7251555.647**	**4915407.596**	**6939374.481**	**16084942.55**	**7879655.072**	**24184609.6**	**7670721.035**	**109846381.4**

8. Identify the sales territory name with highest sales values for sales representatives over different years – show all territories with % of sales each year.

Row Labels	**Sum of LineTotal**
Australia	9.70%
Canada	14.89%
Central	7.20%
France	6.60%
Germany	4.47%
Northeast	6.32%
Northwest	14.64%
Southeast	7.17%
Southwest	22.02%
United Kingdom	6.98%
Grand Total	**100.00%**
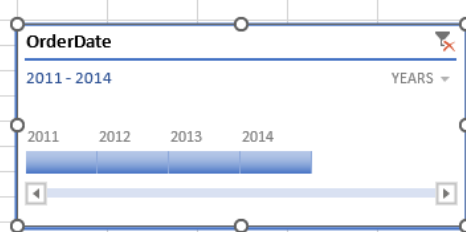
9. Report the percentage of the number of orders made by customers per different territories' names?

CustomerID	All	

Row Labels	Sum of LineTotal
Australia	9.70%
Canada	14.89%
Central	7.20%
France	6.60%
Germany	4.47%
Northeast	6.32%
Northwest	14.64%
Southeast	7.17%
Southwest	22.02%
United Kingdom	6.98%
Grand Total	100.00%

10. Identify the customer with highest increase in sales – look at a year 2013 and compare it to the previous year

Row Labels	Sum of LineTotal
29818	784165.97
30117	755610.9807
29614	740601.7745
29722	732033.9953
29715	714674.5475
29646	674457.3374
29994	673605.6082
29639	671213.4984
29716	661440.4532
29580	653766.6118
29827	645385.0553
29617	634717.5957
29497	609468.2957
29701	607447.0661

OrderDate

2011 - 2013   YEARS

2011   2012   2013   2014

Task 3
Using the AdventureWorks database and MS Excel prepare a basic analytical dashboard (a single sheet with multiple visualisations – here pivot tables/charts):
Prepare a dashboard to help identifying the most prominent customers

OrderDate (Year)   LineTotal

Sum of LineTotal

Total

Row Labels	Sum of LineTotal
29736	157700.6034
29770	151824.9944
29629	149216.628
29715	139174.632
29701	138870.4631
29916	133851.4504
29546	129950.808
30050	119939.616
29957	118449.9426
29929	118143.6132
Grand Total	1357122.751

29614 29617 29639 29646 29701 29715 29722 29818 29994 30117

CustomerID

OrderDate

2014   MONTHS

2014

JN   JUL   AUG   SEP   OCT   NOV   DEC