TASK 1 - SOLUTIONS:

Use this section to provide your solutions, try to briefly comment your approach:

1

a. Where is the information about orders is stored?

It stored in PurchaseOrderDetail and Purchasing.PurchaseOrderHeader because each table basically contains details about order, product, delivery and something more.

b. Which attribute defines the type of the order?

ProductID is define the type of the order because its describing the product and we can get information from that.

c. Which attributes, numerical data, can be used to measure the *performance* of an order?

We can use Sales.SalesOrderDetail as a measure the performance of an order because we have information about product and order quantity, with that information we can calculate how many same items is sold in month or for a year than we can find a solution for our question.

2

a. Which table(s) contain information related to products, like product's name?

Production.Product table contain main and the most important informations about product's.

b. Are products organised in some manner, like dairy products, clothes, etc.?

ProductSubcategory and ProductCategory is a manner of organisation.

c. What additional information about products is available?

Document for the product, review of the product, photos, model and culture also.

3

a. What information about sales locations is available?

As we can see on the table Sales.SalesTerritory and Sales.SalesOrderHeader

We have Country Region Code, Shipment address, currency and few other information about locations.

4

a. How to identify different types of customers? What is the main difference between these types (data-wise)?

We can identify different customers using table Person.Person because this table contains personal information about customers, especially personType

b. How to identify an employee? Are there different types of employees?

WE can identify an employee with same table as previous question (Person.Person). Because as we can see that in "PersonType" we can see the different type of employees.

TASK 2

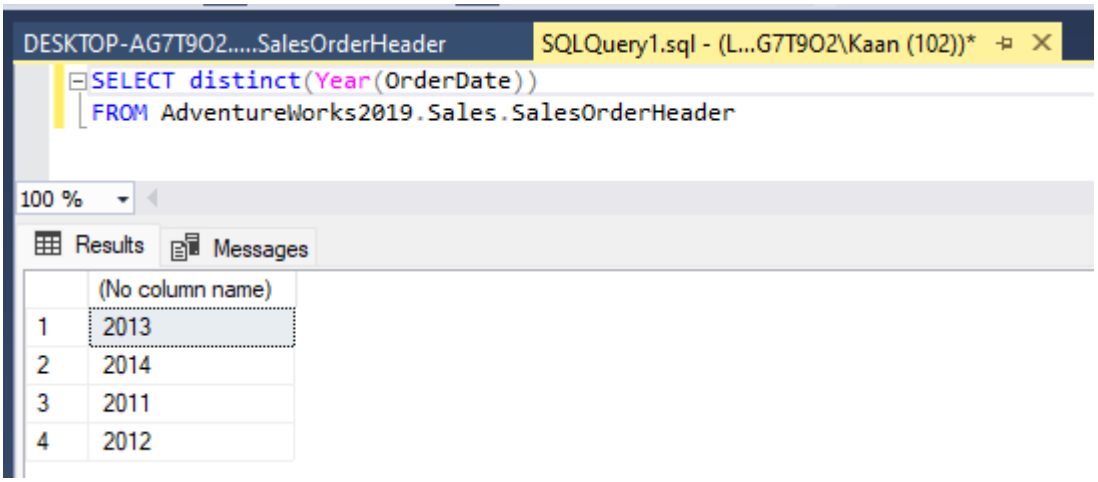
Please use SalesOrderHeader table. Prepare adequate SQL queries to:

1. Determine the years in which orders have been registered in the database
2. Create a list of orders placed in the first year of order registration (ID, Year, Order Amount)
3. Create a list of orders placed in May in each year (Year, mc, ID, Order amount)

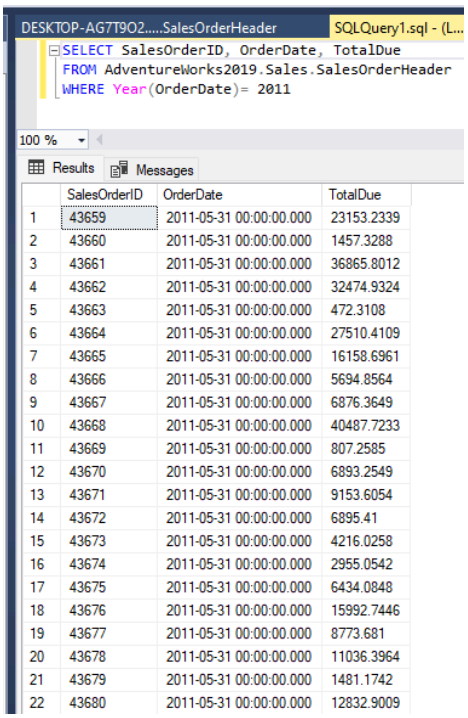
TASK 2 - SOLUTIONS:

Use this section to provide your solutions, please remember to present an expert from the obtained results (several records, along with headers) and basic metadata (like number of rows), try to explain your approach:

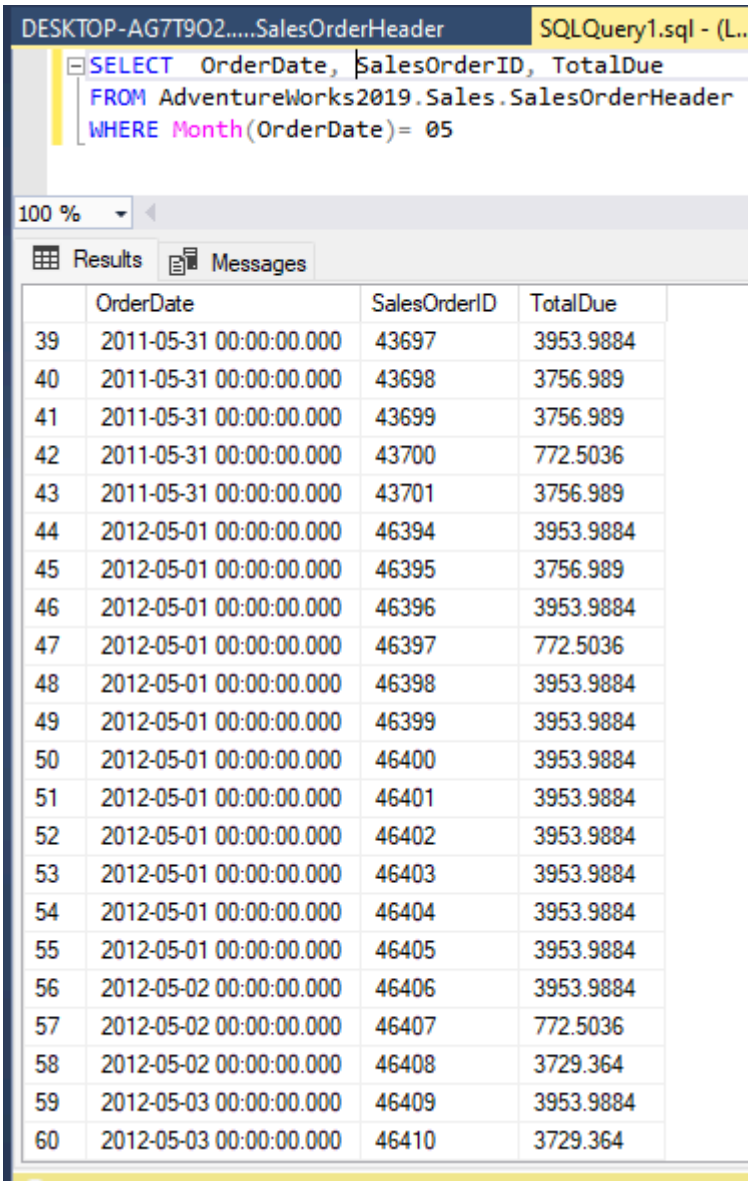
1



2

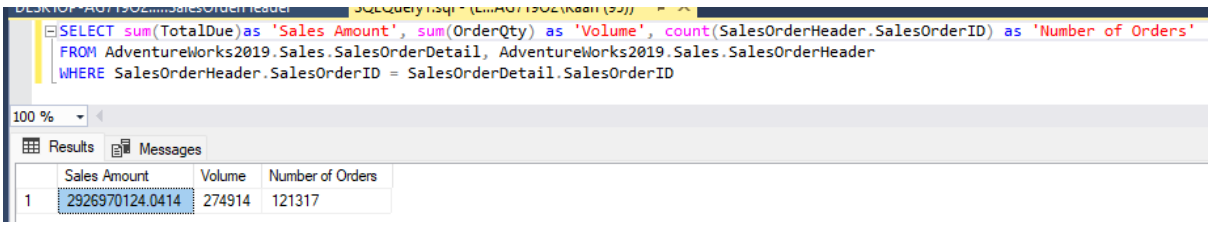


3



	OrderDate	SalesOrderID	TotalDue
39	2011-05-31 00:00:00.000	43697	3953.9884
40	2011-05-31 00:00:00.000	43698	3756.989
41	2011-05-31 00:00:00.000	43699	3756.989
42	2011-05-31 00:00:00.000	43700	772.5036
43	2011-05-31 00:00:00.000	43701	3756.989
44	2012-05-01 00:00:00.000	46394	3953.9884
45	2012-05-01 00:00:00.000	46395	3756.989
46	2012-05-01 00:00:00.000	46396	3953.9884
47	2012-05-01 00:00:00.000	46397	772.5036
48	2012-05-01 00:00:00.000	46398	3953.9884
49	2012-05-01 00:00:00.000	46399	3953.9884
50	2012-05-01 00:00:00.000	46400	3953.9884
51	2012-05-01 00:00:00.000	46401	3953.9884
52	2012-05-01 00:00:00.000	46402	3953.9884
53	2012-05-01 00:00:00.000	46403	3953.9884
54	2012-05-01 00:00:00.000	46404	3953.9884
55	2012-05-01 00:00:00.000	46405	3953.9884
56	2012-05-02 00:00:00.000	46406	3953.9884
57	2012-05-02 00:00:00.000	46407	772.5036
58	2012-05-02 00:00:00.000	46408	3729.364
59	2012-05-03 00:00:00.000	46409	3953.9884
60	2012-05-03 00:00:00.000	46410	3729.364

1



	Sales Amount	Volume	Number of Orders
1	2926970124.0414	274914	121317

2

```
SELECT year(OrderDate)as 'year',sum(TotalDue) as 'Sales Amount', sum(OrderQty) as 'Volume', count(SalesOrderHeader.SalesOrderID) as 'Number of Orders'
 FROM AdventureWorks2019.Sales.SalesOrderDetail, AdventureWorks2019.Sales.SalesOrderHeader
 WHERE SalesOrderHeader.SalesOrderID = SalesOrderDetail.SalesOrderID
 GROUP BY year(OrderDate)
 ORDER BY year(OrderDate)
```

100 %

Results Messages

	year	Sales Amount	Volume	Number of Orders
1	2011	170783734.9557	12888	5716
2	2012	972777341.2287	68579	21689
3	2013	1342968284.4611	131788	56573
4	2014	440440763.3959	61659	37339

3

…

DESKTOP-AG7T9O2.....SalesOrderHeader SQLQuery3.sql - (L...AG7T9O2\Kaan (94))*

```
SELECT*FROM(SELECT CustomerID, TotalDue, YEAR(OrderDate) as 'date'
 FROM AdventureWorks2019.Sales.SalesOrderHeader ) as Test
 PIVOT(AVG(TotalDue) for date in([2013],[2014]))as test
 ORDER BY test.CustomerID;
```

100 %

Results Messages

	CustomerID	2013	2014
1	11000	2679.0725	NULL
2	11001	2674.0227	650.8008
3	11002	2604.5126	NULL
4	11003	2618.4632	NULL
5	11004	2649.801	NULL
6	11005	2622.3529	NULL
7	11006	2607.2696	NULL
8	11007	2658.083	NULL
9	11008	2614.0543	NULL
10	11009	2605.7778	NULL
11	11010	2590.1476	NULL
12	11011	2615.0101	NULL
13	11012	82.8529	6.9394
14	11013	43.0729	82.8529
15	11014	76.4936	NULL
16	11015	2763.5719	NULL
17	11016	2577.1694	NULL
18	11017	2560.2519	820.2968
19	11018	2587.8769	874.4086
20	11019	54.0613	59.6954
21	11020	2560.2519	NULL
22	11021	2621.0158	NULL
23	11022	2566.1194	NULL
24	11023	128.1358	6.9394
25	11024	31.2218	NULL
26	11025	2658.0444	879.9557
27	11026	2651.4144	857.8447
28	11027	2666.3208	860.3751
29	11028	2604.7944	820.2968
30	11029	2661.9119	835.7447
31	11030	2563.589	830.2307
32	11031	2566.1194	835.7447
33	11032	NULL	1740.6...
34	11033	NULL	1723.9...
35	11034	NULL	1707.9...
36	11035	NULL	1699.6...

4

2

```
SELECT CustomerID,
    AVG(CASE WHEN YEAR([OrderDate]) = 2013 THEN TotalDue END) as [2013],
    AVG(CASE WHEN YEAR([OrderDate]) = 2014 THEN TotalDue END) as [2014]
FROM AdventureWorks2019.Sales.SalesOrderHeader
Group By CustomerID
ORDER BY CustomerID
```

100 %

Results Messages

	CustomerID	2013	2014
1	11000	2679.0725	NULL
2	11001	2674.0227	650.8008
3	11002	2604.5126	NULL
4	11003	2618.4632	NULL
5	11004	2649.801	NULL
6	11005	2622.3529	NULL
7	11006	2607.2696	NULL
8	11007	2658.083	NULL
9	11008	2614.0543	NULL
10	11009	2605.7778	NULL
11	11010	2590.1476	NULL
12	11011	2615.0101	NULL
13	11012	82.8529	6.9394
14	11013	43.0729	82.8529
15	11014	76.4936	NULL
16	11015	2763.5719	NULL
17	11016	2577.1694	NULL
18	11017	2560.2519	820.2968
19	11018	2587.8769	874.4086
20	11019	54.0613	59.6954

	Order Date			
Customer ID	2011	2012	2013	2014
11000	3,757		2,679	
11001	3,729		2,674	651
11002	3,757		2,605	
11003	3,757		2,618	
11004	3,757		2,650	
11005	3,729		2,622	
11006	3,757		2,607	
11007	3,757		2,658	
11008	3,729		2,614	
11009	3,729		2,606	
11010	3,757		2,590	
11011	3,757		2,615	
11012			83	7
11013			43	83
11014			76	
11015			2,764	
11016			2,577	
11017	3,729		2,560	820
11018	3,757		2,588	874
11019			54	60
11020			2,560	
11021			2,621	
11022			2,566	
11023			128	7
11024			31	
11025	3,729		2,658	880
11026	3,757		2,651	858
11027	3,757		2,666	860
11028	3,729		2,605	820
11029	3,757		2,662	836
11030	3,757		2,564	830
11031	3,757		2,566	836
11032	3,729			1,741
11033	3,729			1,724
11034	3,757			1,708
11035	3,729			1,700

TASK 4

Prepare adequate SQL queries and graphical representation in Tableau to:

1. Determine which factors influence shopping.
    a. An example of the query result is shown in Table 4.1 below.

Table 4.1. Result excerpt for task 4.1

Reason	Number of orders

Price	17473
On Promotion	3515
…	…

2. For the factor with dominant influence identify annual total volume (number of sold items) from orders made in years 2011-2014 by different colors (product) to identify colors with highest decrease in popularity in order to tweak their pricing schemes.
    a. An example of the query result is shown in Table 4.2 below.

Tabel 4.2 Result excerpt for task 4.2

Color	2011	2012	2013	2014
Black	3503	31458	35134	11842
Blue	360	1519	14214	7566
…	…	…	…	…

1

```
SELECT SalesReason.Name, count(SalesOrderHeaderSalesReason.SalesReasonID)
FROM AdventureWorks2019.Sales.SalesReason, Sales.SalesOrderHeaderSalesReason
WHERE SalesOrderHeaderSalesReason.SalesReasonID = SalesReason.SalesReasonID group by SalesOrderHeaderSalesReason.SalesReasonID, SalesReason.Name
```

100 %

Results Messages

	Name	(No column name)
1	Quality	1551
2	Review	1245
3	Price	17473
4	Other	1395
5	Television Advertisement	722
6	Manufacturer	1746
7	On Promotion	3515

2

```
SELECT*FROM(SELECT Year(SalesOrderHeader.OrderDate) as 'date', SalesOrderDetail.OrderQty as Qty, Product.Color as 'color'
FROM AdventureWorks2019.Sales.SalesOrderDetail, Sales.SalesOrderHeader, Production.Product
WHERE SalesOrderDetail.SalesOrderID = SalesOrderHeader.SalesOrderID and SalesOrderDetail.ProductID = Product.ProductID and color is not null)as testTable
PIVOT(SUM(Qty) for date in ([2011],[2012],[2013],[2014])) as Test
```

100 %

Results Messages

	color	2011	2012	2013	2014
1	Black	3503	31458	35134	11842
2	Blue	360	1519	14214	7566
3	Multi	1572	8492	10721	4288
4	Red	5277	14531	7455	1966
5	Silver	1502	4271	13309	5941
6	Silver/Black	NULL	NULL	2774	1157
7	White	674	523	2724	1296
8	Yellow	NULL	3646	19536	9374

3.

Sheet 1

SalesReaso..	Name	
1	Price	17,473
2	On Promotion	3,515
4	Television Advertisement	722
5	Manufacturer	1,746
6	Review	1,245
9	Quality	1,551
10	Other	1,395

	Order Date			
Color	2011	2012	2013	2014
Null		4,139	25,921	18,229
Black	3,503	31,458	35,134	11,842
Blue	360	1,519	14,214	7,566
Multi	1,572	8,492	10,721	4,288
Red	5,277	14,531	7,455	1,966
Silver	1,502	4,271	13,309	5,941
Silver/Black			2,774	1,157
White	674	523	2,724	1,296
Yellow		3,646	19,536	9,374