

SQL Queries:

Each of the following will have two SQL queries:
AdventureWorksDW2017

1. What are the sales, product costs, profit, number of orders & quantity ordered for internet sales by product category and ranked by sales?

Query:-

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimProductCategory.ProductCategoryKey ,
RANK() OVER (order by sum(SalesAmount-TotalProductCost) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactInternetSales on
dbo.FactInternetSales.ProductKey=dbo.DimProduct.ProductKey
group by dbo.DimProductCategory.ProductCategoryKey;
```

2. What are the sales, product costs, profit, number of orders & quantity ordered for reseller sales by product category and ranked by sales?

Query:-

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimProductCategory.ProductCategoryKey,
RANK() OVER (order by sum(SalesAmount) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactResellerSales on
dbo.FactResellerSales.ProductKey=dbo.DimProduct.ProductKey
group by dbo.DimProductCategory.ProductCategoryKey;
```

3.What are the sales, product costs, profit, number of orders & quantity ordered for both internet & reseller sales by product category and ranked by sales?

Query :-

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimProductCategory.ProductCategoryKey ,
RANK() OVER (order by sum(SalesAmount-TotalProductCost) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactInternetSales on
dbo.FactInternetSales.ProductKey=dbo.DimProduct.ProductKey
group by dbo.DimProductCategory.ProductCategoryKey
```

Union all

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
count(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimProductCategory.ProductCategoryKey,
RANK() OVER (order by sum(SalesAmount-TotalProductCost) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactResellerSales on
dbo.FactResellerSales.ProductKey=dbo.DimProduct.ProductKey
group by dbo.DimProductCategory.ProductCategoryKey;
```

4. What are the sales, product costs, profit, number of orders & quantity ordered for product category Accessories broken-down by Product Hierarchy (Category, Subcategory, Model & Product) for both internet & reseller sales?

Query:-

```
select format(sum(SalesAmount),'c','EN-US') as TotalSales,
Format(sum(ProductStandardCost),'c','EN-US') as TotalCost, Format(sum(SalesAmount -
ProductStandardCost),'c','EN-US') as Profit, sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_Orders, dbo.DimProduct.ProductSubcategoryKey,
dbo.DimProduct.ModelName, dbo.DimProduct.ProductKey ,
dbo.DimProductCategory.ProductCategoryKey from dbo.FactResellerSales
INNER JOIN dbo.DimProduct on dbo.FactResellerSales.ProductKey =
dbo.DimProduct.ProductKey
INNER JOIN dbo.DimProductSubCategory on dbo.DimProduct.ProductSubcategoryKey =
dbo.DimProductSubCategory.ProductSubcategoryKey
INNER JOIN dbo.DimProductCategory on dbo.DimProductSubCategory.ProductCategoryKey =
dbo.DimProductCategory.ProductCategoryKey
group by  dbo.DimProduct.ProductSubcategoryKey, dbo.DimProduct.ModelName,
dbo.DimProduct.ProductKey , dbo.DimProductCategory.ProductCategoryKey
```

union all

```
select format(sum(SalesAmount),'c','EN-US') as TotalSales,
Format(sum(ProductStandardCost),'c','EN-US') as TotalCost, Format(sum(SalesAmount -
ProductStandardCost),'c','EN-US') as Profit, sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_Orders, dbo.DimProduct.ProductSubcategoryKey,
dbo.DimProduct.ModelName, dbo.DimProduct.ProductKey ,
dbo.DimProductCategory.ProductCategoryKey from dbo.FactResellerSales
INNER JOIN dbo.DimProduct on dbo.FactResellerSales.ProductKey =
dbo.DimProduct.ProductKey
INNER JOIN dbo.DimProductSubCategory on dbo.DimProduct.ProductSubcategoryKey =
dbo.DimProductSubCategory.ProductSubcategoryKey
INNER JOIN dbo.DimProductCategory on dbo.DimProductSubCategory.ProductCategoryKey =
dbo.DimProductCategory.ProductCategoryKey
group by  dbo.DimProduct.ProductSubcategoryKey, dbo.DimProduct.ModelName,
dbo.DimProduct.ProductKey , dbo.DimProductCategory.ProductCategoryKey;
```

5. What are the sales, product costs, profit, number of orders & quantity ordered for both internet & reseller sales by country and ranked by sales?

Query:-

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimProductCategory.ProductCategoryKey,
dbo.DimSalesTerritory.SalesTerritoryCountry as Country,
RANK() OVER (order by sum(SalesAmount) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactResellerSales on
dbo.FactResellerSales.ProductKey=dbo.DimProduct.ProductKey
inner join dbo.DimReseller on
dbo.DimReseller.ResellerKey=dbo.FactResellerSales.ResellerKey
inner join dbo.DimGeography on
dbo.DimGeography.GeographyKey=dbo.DimReseller.GeographyKey
inner join dbo.DimSalesTerritory on
dbo.DimSalesTerritory.SalesTerritoryKey=dbo.DimGeography.SalesTerritoryKey
group by
dbo.DimSalesTerritory.SalesTerritoryCountry, dbo.DimProductCategory.ProductCategoryKey
```

union all

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimProductCategory.ProductCategoryKey,
dbo.DimSalesTerritory.SalesTerritoryCountry as Country,
RANK() OVER (order by sum(SalesAmount) DESC) as Rank_of_Product
from dbo.DimProductCategory
```

```
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactInternetSales on
dbo.FactInternetSales.ProductKey=dbo.DimProduct.ProductKey
inner join dbo.DimSalesTerritory on
dbo.DimSalesTerritory.SalesTerritoryKey=dbo.FactInternetSales.SalesTerritoryKey
group by
dbo.DimSalesTerritory.SalesTerritoryCountry, dbo.DimProductCategory.ProductCategoryKey;
```

6. What are the sales, product costs, profit, number of orders & quantity ordered for France by city and ranked by sales for both internet & reseller sales?

Query:-

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimGeography.City as City,
RANK() OVER (order by sum(SalesAmount) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactResellerSales on
dbo.FactResellerSales.ProductKey=dbo.DimProduct.ProductKey
inner join dbo.DimReseller on
dbo.DimReseller.ResellerKey=dbo.FactResellerSales.ResellerKey
inner join dbo.DimGeography on
dbo.DimGeography.GeographyKey=dbo.DimReseller.GeographyKey
inner join dbo.DimSalesTerritory on
dbo.DimSalesTerritory.SalesTerritoryKey=dbo.DimGeography.SalesTerritoryKey
where dbo.DimSalesTerritory.SalesTerritoryCountry='France'
group by dbo.DimGeography.City
```

union all

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimGeography.City as City,
RANK() OVER (order by sum(SalesAmount) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
```

```
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKe
y
inner join dbo.FactInternetSales on
dbo.FactInternetSales.ProductKey=dbo.DimProduct.ProductKey
inner join dbo.DimSalesTerritory on
dbo.DimSalesTerritory.SalesTerritoryKey=dbo.FactInternetSales.SalesTerritoryKey
inner join dbo.DimGeography on
dbo.DimSalesTerritory.SalesTerritoryKey=dbo.DimGeography.SalesTerritoryKey
where dbo.DimSalesTerritory.SalesTerritoryCountry='France'
group by dbo.DimGeography.City;
```


7. What are the top ten resellers by reseller hierarchy (business type, reseller name) ranked by sales?

Query:-

```
select top 10
dbo.DimReseller.ResellerName, dbo.DimReseller.BusinessType
, sum(dbo.FactResellerSales.SalesAmount) as totalsales , Rank() over (order by
sum(dbo.FactResellerSales.SalesAmount) desc) as Rank from dbo.FactResellerSales
inner join dbo.DimReseller on
dbo.DimReseller.ResellerKey=dbo.FactResellerSales.ResellerKey
group by dbo.DimReseller.ResellerName, dbo.DimReseller.BusinessType;
```

8. What are the top ten (internet) customers ranked by sales?

Query:-

```
select top 10
dbo.DimCustomer.FirstName,dbo.DimCustomer.LastName,sum(dbo.FactInternetSales.SalesA
mount) as totalsales , Rank() over (order by sum(dbo.FactInternetSales.SalesAmount) desc) as
Rank from dbo.DimCustomer
inner join dbo.FactInternetSales on
dbo.FactInternetSales.CustomerKey=dbo.DimCustomer.CustomerKey
group by dbo.DimCustomer.FirstName,dbo.DimCustomer.LastName;
```

9. What are the sales, product costs, profit, number of orders & quantity ordered by Customer Occupation?

Query:-

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimCustomer.EnglishOccupation,dbo.DimCustomer.FrenchOccupation,dbo.DimCustomer.
SpanishOccupation
from dbo.FactInternetSales
inner join dbo.DimCustomer on
dbo.DimCustomer.CustomerKey=dbo.FactInternetSales.CustomerKey
group by
dbo.DimCustomer.EnglishOccupation,dbo.DimCustomer.FrenchOccupation,dbo.DimCustomer.
SpanishOccupation ;
```

10. What are the ranked sales of the sales people (employees)?

Query:-

```
select top 10
dbo.DimEmployee.FirstName,dbo.DimEmployee.LastName,sum(dbo.FactResellerSales.SalesA
mount) as totalsales , Rank() over (order by sum(dbo.FactResellerSales.SalesAmount) desc) as
Rank from dbo.DimEmployee
inner join dbo.FactResellerSales on dbo.FactResellerSales.EmployeeKey=
dbo.DimEmployee.EmployeeKey
group by dbo.DimEmployee.FirstName,dbo.DimEmployee.LastName;
```

11. What are the sales, discount amounts (promotion discounts), profit and promotion % of sales for Reseller Sales by Promotion Hierarchy (Category, Type & Name) – sorted descending by sales.?

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(DiscountAmount),'c','en-US') as DiscountAmount,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(dbo.DimPromotion.DiscountPct) as DiscountPercent ,
dbo.DimPromotion.EnglishPromotionCategory as PromotionCategory,
dbo.DimPromotion.EnglishPromotionType as PromotionType,
dbo.DimPromotion.EnglishPromotionName as PromotionName
from
dbo.FactResellerSales
inner join dbo.DimPromotion on
dbo.DimPromotion.PromotionKey=dbo.FactResellerSales.PromotionKey
group by dbo.DimPromotion.EnglishPromotionCategory,
dbo.DimPromotion.EnglishPromotionType,
dbo.DimPromotion.EnglishPromotionName
order by sum(SalesAmount) desc;
```

12. What are the sales, product costs, profit, number of orders & quantity ordered by Sales Territory Hierarchy (Group, Country, region) and ranked by sales for both internet & reseller sales?

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimSalesTerritory.SalesTerritoryGroup as STG,
dbo.DimSalesTerritory.SalesTerritoryCountry as STC,
dbo.DimSalesTerritory.SalesTerritoryRegion as STRT,
RANK() OVER (order by sum(SalesAmount) DESC) as Rank_of_Product
from dbo.DimProductCategory
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactResellerSales on
dbo.FactResellerSales.ProductKey=dbo.DimProduct.ProductKey
inner join dbo.DimReseller on
dbo.DimReseller.ResellerKey=dbo.FactResellerSales.ResellerKey
inner join dbo.DimGeography on
dbo.DimGeography.GeographyKey=dbo.DimReseller.GeographyKey
inner join dbo.DimSalesTerritory on
dbo.DimSalesTerritory.SalesTerritoryKey=dbo.DimGeography.SalesTerritoryKey
group by dbo.DimSalesTerritory.SalesTerritoryGroup,
dbo.DimSalesTerritory.SalesTerritoryCountry ,dbo.DimSalesTerritory.SalesTerritoryRegion

union all
```

```
Select Format(sum(SalesAmount),'c','en-US') as TotalSales,
Format(sum(TotalProductCost),'c','en-US') as Totalcost,
Format(sum(SalesAmount-TotalProductCost),'c','en-US') as Profit,
sum(OrderQuantity) as OrderQuantity,
count(SalesOrderNumber) as Number_of_order,
dbo.DimSalesTerritory.SalesTerritoryGroup as STG,
dbo.DimSalesTerritory.SalesTerritoryCountry as STC,
dbo.DimSalesTerritory.SalesTerritoryRegion as STRT,
RANK() OVER (order by sum(SalesAmount) DESC) as Rank_of_Product
from dbo.DimProductCategory
```

```
inner join dbo.DimProductSubcategory on
dbo.DimProductSubcategory.ProductCategoryKey=dbo.DimProductCategory.ProductCategoryKey
inner join dbo.DimProduct on
dbo.DimProduct.ProductSubcategoryKey=dbo.DimProductSubcategory.ProductSubcategoryKey
inner join dbo.FactInternetSales on
dbo.FactInternetSales.ProductKey=dbo.DimProduct.ProductKey
inner join dbo.DimSalesTerritory on
dbo.DimSalesTerritory.SalesTerritoryKey=dbo.FactInternetSales.SalesTerritoryKey
group by dbo.DimSalesTerritory.SalesTerritoryGroup,
dbo.DimSalesTerritory.SalesTerritoryCountry ,dbo.DimSalesTerritory.SalesTerritoryRegion;
```

13. What are the sales by year by sales channels (internet, reseller & total)?

```
select YEAR(dbo.FactInternetSales.ShipDate) as years,
Format(sum(dbo.FactInternetSales.SalesAmount),'c','en-US') as totalsales_internet,
Format(sum(dbo.FactResellerSales.SalesAmount),'c','en-US') as totalsales_reseller,
Format(sum(dbo.FactInternetSales.SalesAmount+dbo.FactResellerSales.SalesAmount),'c','en-US') as total from dbo.FactInternetSales
inner join dbo.FactResellerSales on
dbo.FactResellerSales.ProductKey=dbo.FactInternetSales.ProductKey
where YEAR(dbo.FactInternetSales.ShipDate)=YEAR(dbo.FactResellerSales.ShipDate)
group by YEAR(dbo.FactInternetSales.ShipDate);
```

14.What are the total sales by month (& year)?

```
select MONTH(dbo.FactInternetSales.ShipDate) AS months ,
Format(sum(dbo.FactInternetSales.SalesAmount+dbo.FactResellerSales.SalesAmount),'c','en-US') as total from dbo.FactInternetSales
inner join dbo.FactResellerSales on
dbo.FactResellerSales.ProductKey=dbo.FactInternetSales.ProductKey
where MONTH(dbo.FactInternetSales.ShipDate)=MONTH(dbo.FactResellerSales.ShipDate)

group by MONTH(dbo.FactInternetSales.ShipDate);
```

15. Please explain (briefly) the differences between SQL queries used to answer the same questions between AdventureWorksDW2017 & AdventureWorks2017

- 1.AdventureWorksDW represents a database of the dimensional approach where as AdventureWork represents a database of normalized approach.
- 2.AdventureWorksDW consist of facts and dimensions and AdventureWork consists of tables
- 3.AdventureWorksDB is much easier to understand and extract information from where in AdventureWork is much more complex and can be utilised to add in more info.
- 4.AdventureWorksDW queries are much shorter and less complicated and requires less of joins between different facts and dimensions where as in AdventureWorks queries are bigger and require lot of joins and conditions.
- 5.Iteration through queries in AdventureWorksDW is easier since there are less facts and dimensions Where as for AdventureWorks it is tougher because of so many tables.
- 6.In AdventureWorksDW there are facts for both resellers and internet sells where in AdventureWorks there is a single tables of salesHeaderorder and sql query is suppose to check value for onlineHeadertag, but in DW it is easier because the info is being extracted from two facts , there is little complexity.