SQL Queries:

Each of the following will have two SQL queries:
AdventureWorks2017

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(Production.Product.StandardCost),'c','en-US') as Totalcost,
format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
sum(Sales.SalesOrderDetail.OrderQty) as Order_Quantity,
Count(Sales.SalesOrderHeader.SalesOrderID) as Number_of_Order,
format(sum(Sales.SalesOrderHeader.SubTotal-Production.Product.StandardCost),'c','en-US') as Profit,
Production.ProductCategory.Name,
Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as Rank_by_Sales
from Sales.SalesOrderDetail
inner join Sales.SalesOrderHeader on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCategoryID
Where Sales.SalesOrderHeader.OnlineOrderFlag=1
group by Production.ProductCategory.Name;

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(Production.Product.StandardCost),'c','en-US') as Totalcost,
format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
sum(Sales.SalesOrderDetail.OrderQty) as Order_Quantity,
Count(Sales.SalesOrderHeader.SalesOrderID) as Number_of_Order,
format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as Profit,
Production.ProductCategory.Name,
Rank() over (order by sum(Sales.SalesOrderDetail.OrderQty*Sales.SalesOrderDetail.UnitPrice)
desc) as Rank_by_Sales
from Sales.SalesOrderDetail
inner join Sales.SalesOrderHeader on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCateg
oryID
Where Sales.SalesOrderHeader.OnlineOrderFlag=0
group by Production.ProductCategory.Name;
```

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(Production.Product.StandardCost),'c','en-US') as Totalcost,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 sum(Sales.SalesOrderDetail.OrderQty) as Order_Quantity,
 Count(Sales.SalesOrderHeader.SalesOrderID) as Number_of_Order,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as Profit,
 Production.ProductCategory.Name,
 Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as Rank_by_Sales
 from Sales.SalesOrderDetail
 inner join Sales.SalesOrderHeader on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
 inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
 inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
 inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCateg
oryID
 Where Sales.SalesOrderHeader.OnlineOrderFlag=0 or
Sales.SalesOrderHeader.OnlineOrderFlag=1
 group by Production.ProductCategory.Name;
```

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(Production.Product.StandardCost),'c','en-US') as Totalcost,
format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
sum(Sales.SalesOrderDetail.OrderQty) as Order_Quantity,
Count(Sales.SalesOrderHeader.SalesOrderID) as Number_of_Order,
format(sum(Sales.SalesOrderHeader.SubTotal-Production.Product.StandardCost),'c','en-US')
as Profit,
Production.ProductCategory.Name as Category,
Production.ProductSubcategory.Name as SubCategory,
Production.ProductModel.Name as ModelName,
Production.Product.Name as ProductName,
Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as Rank_by_Sales
from Sales.SalesOrderDetail
inner join Sales.SalesOrderHeader on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCateg
oryID
inner join Production.ProductModel on Production.ProductModel.ProductModelID=
Production.Product.ProductModelID
Where Sales.SalesOrderHeader.OnlineOrderFlag=0 or
Sales.SalesOrderHeader.OnlineOrderFlag=1
group by Production.ProductCategory.Name,
Production.ProductSubcategory.Name,
Production.ProductModel.Name,
Production.Product.Name;
```

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(Production.Product.StandardCost),'c','en-US') as Totalcost,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 SUM(Sales.SalesOrderDetail.OrderQty) as Order_Quantity,
 Count(Sales.SalesOrderHeader.SalesOrderID) as Number_of_Order,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as Profit,
 sales.CountryRegionCurrency.CountryRegionCode as Country,
 Dense_Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as
Rank_by_Sales
 from Sales.SalesOrderHeader
 inner join Sales.SalesOrderDetail on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
 inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
 inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
 inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCateg
oryID
 inner join sales.SalesTerritory on
sales.SalesTerritory.TerritoryID=sales.SalesOrderHeader.TerritoryID
 inner join sales.CountryRegionCurrency on
sales.CountryRegionCurrency.CountryRegionCode=sales.SalesTerritory.CountryRegionCode
group by  sales.CountryRegionCurrency.CountryRegionCode;
```

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(Production.Product.StandardCost),'c','en-US') as Totalcost,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 SUM(Sales.SalesOrderDetail.OrderQty) as Order_Quantity,
 Count(Sales.SalesOrderHeader.SalesOrderID) as Number_of_Order,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as Profit,
 person.Address.City as City,
 Dense_Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as
Rank_by_Sales
 from Sales.SalesOrderHeader
 inner join Sales.SalesOrderDetail on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
 inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
 inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
 inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCateg
oryID
 inner join sales.SalesTerritory on
sales.SalesTerritory.TerritoryID=sales.SalesOrderHeader.TerritoryID
 inner join sales.SalesTerritoryHistory on
sales.SalesTerritoryHistory.TerritoryID=sales.SalesTerritory.TerritoryID
 inner join Person.StateProvince on
Person.StateProvince.CountryRegionCode=sales.SalesTerritory.CountryRegionCode
inner join person.CountryRegion on
Person.CountryRegion.CountryRegionCode=person.StateProvince.CountryRegionCode
inner join person.Address on
person.Address.StateProvinceID=person.StateProvince.StateProvinceID
 Where  person.CountryRegion.Name='France'
 group by  person.Address.City;
```

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

Query:-

```sql
select top 10 sales.vStoreWithDemographics.BusinessType as BusinessType,
sales.Store.Name as Name,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 Dense_Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as
Rank_by_Sales
 from Sales.SalesOrderDetail
 inner join Sales.SalesOrderHeader on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
 inner join sales.Store on sales.Store.SalesPersonID=sales.SalesOrderHeader.SalesPersonID

 inner join sales.vStoreWithDemographics on
sales.vStoreWithDemographics.BusinessEntityID=sales.Store.BusinessEntityID
 Where Sales.SalesOrderHeader.OnlineOrderFlag=0 and
sales.vStoreWithDemographics.Name=sales.Store.Name
 group by sales.vStoreWithDemographics.BusinessType ,sales.Store.Name
 order by sum(Sales.SalesOrderHeader.SubTotal) desc ;
```

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

Query:-

```
select top 10 person.Person.FirstName as FirstName, person.Person.LastName as LastName,
format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as Rank_by_Sales
from Sales.SalesOrderHeader
inner join Sales.CreditCard on
Sales.CreditCard.CreditCardID=sales.SalesOrderHeader.CreditCardID
inner join sales.PersonCreditCard on
sales.PersonCreditCard.CreditCardID=sales.CreditCard.CreditCardID
inner join person.Person on
person.Person.BusinessEntityID=sales.PersonCreditCard.BusinessEntityID
where sales.SalesOrderHeader.OnlineOrderFlag=1
group by  person.Person.FirstName,person.Person.LastName;
```

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

Query:-

```
select sales.vPersonDemographics.Occupation as Occupation,
format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as Rank_by_Sales
from Sales.SalesOrderHeader
inner join Sales.CreditCard on
Sales.CreditCard.CreditCardID=sales.SalesOrderHeader.CreditCardID
inner join sales.PersonCreditCard on
sales.PersonCreditCard.CreditCardID=sales.CreditCard.CreditCardID
inner join person.Person on
person.Person.BusinessEntityID=sales.PersonCreditCard.BusinessEntityID
inner join sales.vPersonDemographics on
sales.vPersonDemographics.BusinessEntityID=person.person.BusinessEntityID
WHERE sales.vPersonDemographics.Occupation IS NOT NULL
group by  sales.vPersonDemographics.Occupation;
```

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

Query:-

select sales.vSalesPerson.FirstName as FirstName, sales.vSalesPerson.LastName as LastName,
 format(sum(Sales.SalesPerson.SalesYTD),'c','en-US') as TotalSales,
 Dense_Rank() over (order by sum(Sales.SalesPerson.SalesYTD) desc) as Rank_by_Sales
 from Sales.SalesPerson
 inner join sales.vSalesPerson on
sales.vSalesPerson.BusinessEntityID=sales.SalesPerson.BusinessEntityID
group by sales.vSalesPerson.FirstName , sales.vSalesPerson.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 ascending by sales.?

Query:-

```
select format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 format(sum(Sales.SalesOrderHeader.SubTotal-Production.Product.StandardCost),'c','en-US')
as Profit,
sales.SpecialOffer.Category as Promotion_Category,sales.SpecialOffer.Type as
Promotion_Type,sales.SpecialOffer.Description as Description,
sum(sales.SpecialOffer.DiscountPct) as promotion_percentage,
sum(sales.SalesOrderDetail.OrderQty * sales.SalesOrderDetail.UnitPriceDiscount) as
promotion_discount,
 Dense_Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) asc) as Rank_by_Sales
 from Sales.SalesOrderHeader
 inner join sales.SalesOrderDetail on
sales.SalesOrderDetail.SalesOrderID=sales.SalesOrderHeader.SalesOrderID
 inner join sales.SpecialOffer on
sales.SpecialOffer.SpecialOfferID=sales.SalesOrderDetail.SpecialOfferID
 inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
 where sales.SalesOrderHeader.OnlineOrderFlag=0
 group by sales.SpecialOffer.Category,sales.SpecialOffer.Type,sales.SpecialOffer.Description
 order by sum(Sales.SalesOrderHeader.SubTotal) asc;
```

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?

Query:-

```
select format(sum(Production.Product.StandardCost),'c','en-US') as Totalcost,
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 sum(Sales.SalesOrderDetail.OrderQty) as Order_Quantity,
 Count(Sales.SalesOrderHeader.SalesOrderID) as Number_of_Order,
 format(sum(Sales.SalesOrderHeader.SubTotal-Production.Product.StandardCost),'c','en-US')
as Profit,
 sales.SalesTerritory.[Group] as Group_ ,sales.vStoreWithAddresses.CountryRegionName as
Country,sales.vStoreWithAddresses.City as city,
 Dense_Rank() over (order by sum(Sales.SalesOrderHeader.SubTotal) desc) as
Rank_by_Sales
 from Sales.SalesOrderDetail
 inner join Sales.SalesOrderHeader on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
 inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
 inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
 inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCateg
oryID
 inner join sales.SalesTerritory  on
sales.SalesTerritory.TerritoryID=sales.SalesOrderHeader.TerritoryID
 inner join sales.Store on sales.Store.SalesPersonID=sales.SalesOrderHeader.SalesPersonID
 inner join sales.vStoreWithAddresses on
sales.vStoreWithAddresses.BusinessEntityID=sales.Store.BusinessEntityID
 group by sales.SalesTerritory.[Group] ,sales.vStoreWithAddresses.CountryRegionName
,sales.vStoreWithAddresses.City ;
```

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

Query:-

```
select
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 YEAR(sales.SalesOrderHeader.OrderDate) as year, sales.SalesOrderHeader.OnlineOrderFlag
as "sales channel"
 from sales.SalesOrderHeader
 inner join Sales.SalesOrderDetail on
Sales.SalesOrderHeader.SalesOrderID=Sales.SalesOrderDetail.SalesOrderID
 inner join Production.Product on Sales.SalesOrderDetail.ProductID=
Production.Product.ProductID
 inner join Production.ProductSubcategory on Production.Product.ProductSubcategoryID=
Production.ProductSubcategory.ProductSubcategoryID
 inner join Production.ProductCategory on
Production.ProductCategory.ProductCategoryID=Production.ProductSubcategory.ProductCateg
oryID
 group by
YEAR(sales.SalesOrderHeader.OrderDate),sales.SalesOrderHeader.OnlineOrderFlag
 order by
YEAR(sales.SalesOrderHeader.OrderDate),sales.SalesOrderHeader.OnlineOrderFlag;
```

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

Query:-

```
select
 format(sum(Sales.SalesOrderHeader.SubTotal),'c','en-US') as TotalSales,
 YEAR(sales.SalesOrderHeader.OrderDate) as year,
MONTH(sales.SalesOrderHeader.OrderDate) as months
 from sales.SalesOrderHeader
 group by
YEAR(sales.SalesOrderHeader.OrderDate),MONTH(sales.SalesOrderHeader.OrderDate)
 order by
YEAR(sales.SalesOrderHeader.OrderDate),MONTH(sales.SalesOrderHeader.OrderDate);
```

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.