Assignment: AdventureWorks -SQL queries

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Database: AdventureWork2017

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

```
SELECT pc.Name,
    SUM(sod.OrderQty*sod.UnitPrice) Sales,
    SUM(p.StandardCost) ProductCosts,
    (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost)) AS 'Profit',
    COUNT(sod.SalesOrderID) AS 'Number of Orders',
    SUM(sod.OrderQty) AS 'Quantity ordered',
    RANK() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS 'Rank'
FROM Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader sh ON sh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID
AND sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON pp.ProductID = sp.ProductID
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
INNER JOIN Production.ProductSubcategory ps ON ps.ProductSubcategoryID =
p.ProductSubcategoryID
INNER JOIN Production.ProductCategory pc ON pc.ProductCategoryID = ps.ProductCategoryID
WHERE sh.OnlineOrderFlag=1
GROUP BY pc.Name;
```

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

```
SELECT  pc.Name,
                SUM(sod.OrderQty*sod.UnitPrice) Sales,
                SUM(p.StandardCost) ProductCosts,
                (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost))  AS 'Profit',
                COUNT(sod.SalesOrderID) AS 'Number of Orders',
                SUM(sod.OrderQty) AS 'Quantity ordered',
                RANK() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS 'Rank'
from Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader sh ON sh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON pp.ProductID = sp.ProductID
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
```

```
INNER JOIN Production.ProductSubcategory ps ON ps.ProductSubcategoryID =
p.ProductSubcategoryID
INNER JOIN Production.ProductCategory pc ON pc.ProductCategoryID = ps.ProductCategoryID
WHERE sh.OnlineOrderFlag='0'
GROUP BY pc.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?

```
SELECT  pc.Name,
                SUM(sod.OrderQty*sod.UnitPrice) Sales,
                SUM(p.StandardCost) ProductCosts,
                (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost))  AS 'Profit',
                COUNT(sod.SalesOrderID) AS 'Number of Orders',
                SUM(sod.OrderQty) AS 'Quantity ordered',
                RANK() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS 'Rank'
from Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader sh ON sh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON pp.ProductID = sp.ProductID
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
INNER JOIN Production.ProductSubcategory ps ON ps.ProductSubcategoryID =
p.ProductSubcategoryID
INNER JOIN Production.ProductCategory pc ON pc.ProductCategoryID = ps.ProductCategoryID
WHERE sh.OnlineOrderFlag IN (0,1)
GROUP BY pc.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?

```
SELECT  pc.Name, ps.Name,pm.Name, p.Name,
                SUM(sod.OrderQty*sod.UnitPrice) Sales,
                SUM(p.StandardCost) ProductCosts,
                (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost))  AS 'Profit',
                COUNT(sod.SalesOrderID) AS 'Number of Orders',
                SUM(sod.OrderQty) AS 'Quantity ordered',
                ROW_NUMBER() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS
'Rank'
from Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader sh ON sh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON pp.ProductID = sp.ProductID
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
```

```
INNER JOIN Production.ProductSubcategory ps ON ps.ProductSubcategoryID =
p.ProductSubcategoryID
INNER JOIN Production.ProductCategory pc ON pc.ProductCategoryID = ps.ProductCategoryID
INNER JOIN Production.ProductModel pm ON pm.ProductModelId = p.ProductModelId
WHERE sh.OnlineOrderFlag IN (0,1) AND pc.Name='Accessories'
GROUP BY pc.Name, ps.Name,pm.Name, p.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?

```
SELECT  cr.Name,
                SUM(sod.OrderQty*sod.UnitPrice) Sales,
                SUM(p.StandardCost) ProductCosts,
                (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost))  AS 'Profit',
                COUNT(sod.SalesOrderID) AS 'Number of Orders',
                SUM(sod.OrderQty) AS 'Quantity ordered',
                RANK() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS 'Rank'
from Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader sh ON sh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON pp.ProductID = sp.ProductID
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
INNER JOIN Production.ProductSubcategory ps ON ps.ProductSubcategoryID =
p.ProductSubcategoryID
INNER JOIN Production.ProductCategory pc ON pc.ProductCategoryID = ps.ProductCategoryID
INNER JOIN Sales.SalesTerritory t ON t.TerritoryID=sh.TerritoryID
INNER JOIN Person.CountryRegion cr ON t.CountryRegionCode=cr.CountryRegionCode
WHERE sh.OnlineOrderFlag IN (0,1)
GROUP BY  cr.Name;
```

-- 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?

```
SELECT  a.City,
                SUM(sod.OrderQty*sod.UnitPrice) Sales,
                SUM(p.StandardCost) ProductCosts,
                (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost))  AS 'Profit',
                COUNT(sod.SalesOrderID) AS 'Number of Orders',
                SUM(sod.OrderQty) AS 'Quantity ordered',
                ROW_NUMBER() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS
'Rank'
from Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader sh ON sh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON pp.ProductID = sp.ProductID
```

```
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
INNER JOIN Sales.SalesTerritory t ON t.TerritoryID=sh.TerritoryID
INNER JOIN Person.CountryRegion cr ON t.CountryRegionCode=cr.CountryRegionCode
INNER JOIN Person.StateProvince state ON state.CountryRegionCode=cr.CountryRegionCode
INNER JOIN Person.Address a ON a.StateProvinceID= state.StateProvinceID
WHERE sh.OnlineOrderFlag IN (0,1) AND cr.Name='France'
GROUP BY  a.City;
```

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

```
SELECT top 10 vdemo.BusinessType,
        vdemo.Name,
        SUM(sod.UnitPrice*sod.OrderQty) AS 'Sales',
        ROW_NUMBER() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS 'Rank'
FROM Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader soh ON soh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.Customer c ON c.CustomerId=soh.CustomerId
INNER JOIN Sales.Store s ON s.BusinessEntityID=c.StoreID
INNER JOIN Sales.vStoreWithDemographics vdemo ON vdemo.BusinessEntityID=s.BusinessEntityID
WHERE soh.OnlineOrderFlag=0
  AND vdemo.Name=s.Name
GROUP BY vdemo.BusinessType,
       vdemo.Name;
```

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

```
SELECT top 10 vdemo.LastName,
        vdemo.FirstName,
        SUM(sod.UnitPrice*sod.OrderQty) AS 'Sales',
        ROW_NUMBER() OVER(ORDER BY SUM(sod.OrderQty*sod.UnitPrice) DESC) AS 'Rank'
FROM Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader soh ON soh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.Customer c ON c.CustomerId=soh.CustomerId
INNER JOIN Sales.vIndividualCustomer vdemo ON vdemo.BusinessEntityID=c.CustomerId
WHERE soh.OnlineOrderFlag=1
GROUP BY vdemo.FirstName,
       vdemo.LastName;
```

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

```
SELECT  vdemo.Occupation,
                SUM(sod.OrderQty*sod.UnitPrice) Sales,
                SUM(p.StandardCost) ProductCosts,
```

```
                (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost))  AS 'Profit',
                COUNT(sod.SalesOrderID) AS 'Number of Orders',
                SUM(sod.OrderQty) AS 'Quantity ordered'
from Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader soh ON soh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON pp.ProductID = sp.ProductID
INNER JOIN Production.Product p ON p.ProductID = sod.ProductID
INNER JOIN Sales.Customer c ON c.CustomerId=soh.CustomerId
INNER JOIN Sales.SalesPerson s ON s.TerritoryID=soh.TerritoryID
INNER JOIN Person.Person per ON per.BusinessEntityID=c.PersonID
INNER JOIN Sales.vPersonDemographics vdemo ON vdemo.BusinessEntityID=per.BusinessEntityID
WHERE vdemo.Occupation IS NOT NULL
GROUP BY vdemo.Occupation;
```

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

```
SELECT vdemo.FirstName AS FirstName,
     vdemo.LastName AS LastName,
     sum(sp.SalesYTD) AS TotalSales,
     ROW_NUMBER() OVER (ORDER BY sum(sp.SalesYTD) DESC) AS Rank_by_Sales
FROM Sales.SalesPerson sp
INNER JOIN sales.vSalesPerson vdemo ON vdemo.BusinessEntityID=sp.BusinessEntityID
GROUP BY vdemo.FirstName,
      vdemo.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  prodcat.ProductCategoryID as Category,
                prodcat.Name as ProductCategoryName,
                sum(sod.OrderQty*sod.UnitPrice)as Sales,
                (sum(sod.OrderQty*sod.UnitPrice)-SUM(prod.StandardCost)) as Profit,
                sum(specialop.DiscountPct*100) as DiscountAmount,
                sum(specialop.DiscountPct%((sod.OrderQty*sod.UnitPrice))) as
promotionPercentSales,
                ROW_NUMBER() OVER(ORDER BY (sum(sod.OrderQty*sod.UnitPrice)) DESC) as
RankBySales
FROM Sales.SalesOrderDetail sod
INNER JOIN Sales.SalesOrderHeader soh ON sod.SalesOrderID=soh.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sop ON sop.ProductID=sod.ProductID AND
sop.ProductID=sod.ProductID
```

```
INNER JOIN Sales.SpecialOffer specialop ON specialop.SpecialOfferID=sop.SpecialOfferID
INNER JOIN Production.ProductProductPhoto as ppp ON ppp.ProductID=sop.ProductID
INNER JOIN Production.Product as prod ON prod.ProductID = sop.ProductID
INNER JOIN Production.ProductSubcategory AS prodsub ON
prodsub.ProductSubcategoryID=prod.ProductSubcategoryID
INNER JOIN Production.ProductCategory as prodcat ON
prodcat.ProductCategoryID=prodsub.ProductCategoryID
WHERE soh.OnlineOrderFlag='0'
GROUP BY prodcat.Name,prodcat.ProductCategoryID;
```

-- 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  t.[Group],cr.Name, cr.CountryRegionCode,
                    SUM(sod.OrderQty*sod.UnitPrice) Sales,
                    SUM(p.StandardCost) ProductCosts,
                    (SUM(sod.OrderQty*sod.UnitPrice)-SUM(p.StandardCost))  AS 'Profit',
                    COUNT(sh.SalesOrderID) AS 'Number of Orders',
                    COUNT(sod.OrderQty) AS 'Quantity ordered'
from Sales.SalesOrderDetail sod
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON PP.ProductID = sod.ProductID
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
INNER JOIN Production.WorkOrder wo ON wo.ProductID = p.ProductID
INNER JOIN Sales.SalesOrderHeader sh ON sh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SalesTerritory t ON t.TerritoryID=sh.TerritoryID
INNER JOIN Person.CountryRegion cr ON t.CountryRegionCode=cr.CountryRegionCode
WHERE sh.OnlineOrderFlag IN (0,1)
GROUP BY t.[Group],cr.Name, cr.CountryRegionCode;
```

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

```
SELECT SUM(sod.OrderQty*sod.UnitPrice) Sales,
    YEAR(soh.OrderDate) AS 'Year',
    CASE
       WHEN soh.OnlineOrderFlag=0 THEN 'Reseller Sales'
       ELSE 'Internet Sales'
    END AS 'Channel'
FROM sales.SalesOrderHeader soh
INNER JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID=sod.SalesOrderID
INNER JOIN Sales.SpecialOfferProduct sp ON sp.SpecialOfferID = sod.SpecialOfferID AND
sp.ProductID=sod.ProductID
INNER JOIN Production.ProductProductPhoto pp ON PP.ProductID = sod.ProductID
INNER JOIN Production.Product p ON p.ProductID = pp.ProductID
INNER JOIN Production.ProductSubcategory ps ON
p.ProductSubcategoryID=ps.ProductSubcategoryID
```

```
INNER JOIN Production.ProductCategory pc ON pc.ProductCategoryID=ps.ProductCategoryID
GROUP BY YEAR(soh.OrderDate), soh.OnlineOrderFlag
ORDER BY YEAR(soh.OrderDate), soh.OnlineOrderFlag;
```

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

```
SELECT DATENAME(MONTH, sh.OrderDate) AS SalesMonth,
    YEAR(sh.OrderDate) AS SalesYear,
    sum(so.OrderQty*so.UnitPrice) AS TotalSales
FROM Sales.SalesOrderDetail so
INNER JOIN Sales.SalesOrderHeader sh ON so.SalesOrderID = sh.SalesOrderID
where sh.OnlineOrderFlag IN (0,1)
GROUP BY YEAR(sh.OrderDate), DATENAME(MONTH, sh.OrderDate)
order by YEAR(sh.OrderDate) desc;
```

Database: AdventureWorksDW2017

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

```
SELECT  prodcat.EnglishProductCategoryName,
                SUM(fis.UnitPrice*fis.OrderQuantity) Sales,
                SUM(fis.ProductStandardCost) ProductCosts,
                (SUM(fis.UnitPrice*fis.OrderQuantity)-SUM(fis.ProductStandardCost))  AS 'Profit',
                COUNT(fis.SalesOrderNumber) AS 'Number of Orders',
                SUM(fis.OrderQuantity) AS 'Quantity ordered',
                RANK() OVER(ORDER BY SUM(fis.UnitPrice*fis.OrderQuantity) DESC) AS 'Rank'
from FactInternetSales fis
INNER JOIN DimProduct dp ON dp.ProductKey=fis.ProductKey
INNER JOIN DimProductSubcategory subcat ON subcat.ProductSubcategoryKey =
dp.ProductSubcategoryKey
INNER JOIN DimProductCategory prodcat ON prodcat.ProductCategoryKey =
subcat.ProductCategoryKey
GROUP BY prodcat.EnglishProductCategoryName;
```

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

```
SELECT  prodcat.EnglishProductCategoryName,
                SUM(fis.UnitPrice*fis.OrderQuantity) Sales,
                SUM(fis.ProductStandardCost) ProductCosts,
                (SUM(fis.UnitPrice*fis.OrderQuantity)-SUM(fis.ProductStandardCost))  AS 'Profit',
                COUNT(fis.SalesOrderNumber) AS 'Number of Orders',
                SUM(fis.OrderQuantity) AS 'Quantity ordered',
                RANK() OVER(ORDER BY SUM(fis.UnitPrice*fis.OrderQuantity) DESC) AS 'Rank'
from FactResellerSales fis
INNER JOIN DimProduct dp ON dp.ProductKey=fis.ProductKey
INNER JOIN DimProductSubcategory subcat ON subcat.ProductSubcategoryKey =
dp.ProductSubcategoryKey
INNER JOIN DimProductCategory prodcat ON prodcat.ProductCategoryKey =
subcat.ProductCategoryKey
GROUP BY prodcat.EnglishProductCategoryName;
```

-- 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?

```
with cte as (
	select ProductKey,UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
DiscountAmount from FactInternetSales
	union
	select ProductKey, UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
DiscountAmount from FactResellerSales
	)

SELECT  prodcat.EnglishProductCategoryName,
		SUM(cte.UnitPrice*cte.OrderQuantity) Sales,
		SUM(cte.ProductStandardCost) ProductCosts,
		(SUM(cte.UnitPrice*cte.OrderQuantity)-SUM(cte.ProductStandardCost))  AS 'Profit',
		COUNT(cte.SalesOrderNumber) AS 'Number of Orders',
		SUM(cte.OrderQuantity) AS 'Quantity ordered',
		RANK() OVER(ORDER BY SUM(cte.UnitPrice*cte.OrderQuantity) DESC) AS 'Rank'
from cte
INNER JOIN DimProduct dp ON dp.ProductKey=cte.ProductKey
INNER JOIN DimProductSubcategory subcat ON subcat.ProductSubcategoryKey =
dp.ProductSubcategoryKey
INNER JOIN DimProductCategory prodcat ON prodcat.ProductCategoryKey =
subcat.ProductCategoryKey
GROUP BY prodcat.EnglishProductCategoryName;
```

-- 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?

```
with cte as (
	select ProductKey,UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
DiscountAmount from FactInternetSales
	union
	select ProductKey, UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
DiscountAmount from FactResellerSales
)

SELECT  prodcat.EnglishProductCategoryName, subcat.EnglishProductSubcategoryName,
dp.ModelName,dp.EnglishProductName,
		SUM(cte.UnitPrice*cte.OrderQuantity) Sales,
		SUM(cte.ProductStandardCost) ProductCosts,
		(SUM(cte.UnitPrice*cte.OrderQuantity)-SUM(cte.ProductStandardCost))  AS 'Profit',
		COUNT(cte.SalesOrderNumber) AS 'Number of Orders',
		SUM(cte.OrderQuantity) AS 'Quantity ordered',
		RANK() OVER(ORDER BY SUM(cte.UnitPrice*cte.OrderQuantity) DESC) AS 'Rank'
```

```
from cte
INNER JOIN DimProduct dp ON dp.ProductKey=cte.ProductKey
INNER JOIN DimProductSubcategory subcat ON subcat.ProductSubcategoryKey =
dp.ProductSubcategoryKey
INNER JOIN DimProductCategory prodcat ON prodcat.ProductCategoryKey =
subcat.ProductCategoryKey
WHERE prodcat.EnglishProductCategoryName='Accessories'
GROUP BY prodcat.EnglishProductCategoryName, subcat.EnglishProductSubcategoryName,
dp.ModelName,dp.EnglishProductName;
```

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

```
with cte as (
        select ProductKey,UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
SalesTerritoryKey from FactInternetSales
        union
        select ProductKey, UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
SalesTerritoryKey from FactResellerSales
        )

SELECT  st.SalesTerritoryCountry,
                SUM(cte.UnitPrice*cte.OrderQuantity) Sales,
                SUM(cte.ProductStandardCost) ProductCosts,
                (SUM(cte.UnitPrice*cte.OrderQuantity)-SUM(cte.ProductStandardCost))  AS 'Profit',
                COUNT(cte.SalesOrderNumber) AS 'Number of Orders',
                SUM(cte.OrderQuantity) AS 'Quantity ordered',
                RANK() OVER(ORDER BY SUM(cte.UnitPrice*cte.OrderQuantity) DESC) AS 'Rank'
from cte
INNER JOIN DimProduct dp ON dp.ProductKey=cte.ProductKey
INNER JOIN DimSalesTerritory st ON st.SalesTerritoryKey=cte.SalesTerritoryKey
GROUP BY st.SalesTerritoryCountry;
```

-- 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?

```
with cte as (
        select ProductKey,UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
SalesTerritoryKey from FactInternetSales
        union
        select ProductKey, UnitPrice, ProductStandardCost, SalesOrderNumber, OrderQuantity,
SalesTerritoryKey from FactResellerSales
        )
```

```
SELECT  dg.City,
                    SUM(cte.UnitPrice*cte.OrderQuantity) Sales,
                    SUM(cte.ProductStandardCost) ProductCosts,
                    (SUM(cte.UnitPrice*cte.OrderQuantity)-SUM(cte.ProductStandardCost))  AS 'Profit',
                    COUNT(cte.SalesOrderNumber) AS 'Number of Orders',
                    SUM(cte.OrderQuantity) AS 'Quantity ordered',
                    RANK() OVER(ORDER BY SUM(cte.UnitPrice*cte.OrderQuantity) DESC) AS 'Rank'
from cte
INNER JOIN DimProduct dp ON dp.ProductKey=cte.ProductKey
INNER JOIN DimSalesTerritory st ON st.SalesTerritoryKey=cte.SalesTerritoryKey
INNER JOIN DimGeography dg ON dg.SalesTerritoryKey=st.SalesTerritoryKey
WHERE st.SalesTerritoryCountry='France'
GROUP BY dg.City;
```

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

```
SELECT top 10 dimre.BusinessType,
       dimre.ResellerName,
       SUM(fis.UnitPrice*fis.OrderQuantity) Sales,
       RANK() OVER(ORDER BY SUM(fis.UnitPrice*fis.OrderQuantity) DESC) AS 'Rank'
FROM FactResellerSales fis
INNER JOIN DimReseller dimre ON dimre.ResellerKey=fis.ResellerKey
GROUP BY dimre.BusinessType,
      dimre.ResellerName;
```

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

```
SELECT TOP 10 c.LastName,
       c.FirstName,
       SUM(fis.UnitPrice*fis.OrderQuantity) Sales,
       RANK() OVER(ORDER BY SUM(fis.UnitPrice*fis.OrderQuantity) DESC) AS 'Rank'
FROM FactInternetSales fis
INNER JOIN DimCustomer c ON c.CustomerKey=fis.CustomerKey
GROUP BY c.LastName,
      c.FirstName;
```

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

```
SELECT  c.EnglishOccupation,
                    SUM(fis.UnitPrice*fis.OrderQuantity) Sales,
                    SUM(fis.ProductStandardCost) ProductCosts,
                    (SUM(fis.UnitPrice*fis.OrderQuantity)-SUM(fis.ProductStandardCost))  AS 'Profit',
                    COUNT(fis.SalesOrderNumber) AS 'Number of Orders',
                    SUM(fis.OrderQuantity) AS 'Quantity ordered',
                    RANK() OVER(ORDER BY SUM(fis.UnitPrice*fis.OrderQuantity) DESC) AS 'Rank'
from FactInternetSales fis
INNER JOIN DimProduct dp ON dp.ProductKey=fis.ProductKey
INNER JOIN DimCustomer c ON c.CustomerKey=fis.CustomerKey
GROUP BY c.EnglishOccupation;
```

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

```
SELECT fis.EmployeeKey,
     e.LastName,
     e.FirstName,
     SUM(fis.UnitPrice*fis.OrderQuantity) Sales,
     RANK() OVER(ORDER BY SUM(fis.UnitPrice*fis.OrderQuantity) DESC) AS 'Rank'
FROM FactResellerSales fis
INNER JOIN DimEmployee e ON e.EmployeeKey=fis.EmployeeKey
GROUP BY e.LastName,
      e.FirstName,
      fis.EmployeeKey;
```

-- 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  dimprom.EnglishPromotionCategory, dimprom.EnglishPromotionType,
dimprom.EnglishPromotionName,
                    SUM(fis.UnitPrice*fis.OrderQuantity) Sales,
                    SUM(DiscountPct * fis.UnitPrice*fis.OrderQuantity) AS Discount,
                    (SUM(fis.UnitPrice*fis.OrderQuantity)-SUM(fis.ProductStandardCost))  AS 'Profit',
                    SUM((fis.UnitPrice*fis.OrderQuantity)/100) AS 'Promotion %',
                    RANK() OVER(ORDER BY SUM(fis.UnitPrice*fis.OrderQuantity) DESC) AS 'Rank'
from FactResellerSales fis
INNER JOIN DimProduct dp ON dp.ProductKey=fis.ProductKey
INNER JOIN DimPromotion dimprom ON dimprom.PromotionKey = fis.PromotionKey
GROUP BY dimprom.EnglishPromotionCategory, dimprom.EnglishPromotionType,
dimprom.EnglishPromotionName;
```

-- 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?

```
with cte as (
	select ProductKey, UnitPrice, TotalProductCost, SalesOrderNumber, OrderQuantity,
ProductStandardCost, SalesTerritoryKey from FactInternetSales
	union
	select ProductKey, UnitPrice, TotalProductCost, SalesOrderNumber, OrderQuantity,
ProductStandardCost, SalesTerritoryKey from FactResellerSales
	)
SELECT  st.SalesTerritoryGroup, st.SalesTerritoryCountry, st.SalesTerritoryRegion,
		SUM(cte.UnitPrice*cte.OrderQuantity) Sales,
		SUM(cte.ProductStandardCost) ProductCosts,
		(SUM(cte.UnitPrice*cte.OrderQuantity)-SUM(cte.ProductStandardCost))  AS 'Profit',
		COUNT(cte.SalesOrderNumber) AS 'Number of Orders',
		SUM(cte.OrderQuantity) AS 'Quantity ordered',
		RANK() OVER(ORDER BY SUM(cte.UnitPrice*cte.OrderQuantity) DESC) AS 'Rank'
from cte
INNER JOIN DimProduct dp ON dp.ProductKey=cte.ProductKey
INNER JOIN DimSalesTerritory st on cte.SalesTerritoryKey = st.SalesTerritoryKey
GROUP BY st.SalesTerritoryGroup, st.SalesTerritoryCountry, st.SalesTerritoryRegion;
```

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

```
SELECT YEAR(fis.OrderDate) AS Years,
    SUM(fis.UnitPrice*fis.OrderQuantity) AS SalesInternet,
    SUM(frs.UnitPrice*frs.OrderQuantity) AS SalesReseller,
    sum(fis.UnitPrice*fis.OrderQuantity+frs.UnitPrice*frs.OrderQuantity) AS Total
FROM dbo.FactInternetSales fis
INNER JOIN dbo.FactResellerSales frs ON frs.ProductKey=fis.ProductKey
INNER JOIN DimProduct dp ON dp.ProductKey=fis.ProductKey
WHERE YEAR(fis.OrderDate)=YEAR(frs.OrderDate)
GROUP BY YEAR(fis.OrderDate);
```

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

```
with cte as (
        select ProductKey, UnitPrice, OrderQuantity, OrderDate from FactInternetSales
        union
        select ProductKey, UnitPrice, OrderQuantity, OrderDate from FactResellerSales
        )
SELECT  DATENAME(MONTH, cte.OrderDate) AS 'Month',
                YEAR(cte.OrderDate) AS 'Year',
                SUM(cte.UnitPrice*cte.OrderQuantity) AS 'Sales'
FROM cte
GROUP BY YEAR(cte.OrderDate), DATENAME(MONTH, cte.OrderDate)
order by YEAR(cte.OrderDate) desc;
```

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

Referring the ER Diagram for AdventureWorksDW2017 & AdventureWorks2017 and extracting business rules from the same the following points of differentiation are listed:

- AdventureWorksDW database follows dimensional model methodology whereas AdventureWorks database consist of normalized records
- AdventureWorksDW has dimensions and fact tables where as AdventureWorks has entity tables like person, Sales etc
- AdventureWorksDW is easy to understand and facts and dimensions are separately stored which is not followed in AdventureWorks database
- AdventureWorksDW is used for BI reporting and analysis where as AdventureWorks is and operational model
- AdventureWorksDW SQL queries requires less number of join to extract result set whereas AdventureWorks comparatively needs joining of more tables