1. **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,

CONCAT('$',SUM(fis.UnitPrice\*fis.OrderQuantity)) Sales,

CONCAT('$',SUM(fis.ProductStandardCost)) ProductCosts,

CONCAT('$',(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 by sales'

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;

1. **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,

CONCAT('$',SUM(fis.UnitPrice\*fis.OrderQuantity)) Sales,

CONCAT('$',SUM(fis.ProductStandardCost)) ProductCosts,

CONCAT('$',(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;

1. **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.EnglishProductCategoryName as Product\_Category,

count(fis.SalesOrderNumber)+count(frs.SalesOrderNumber),

concat('$',sum(fis.SalesAmount)+sum(frs.SalesAmount)) as Sales,

concat('$', sum(fis.ProductStandardCost)+sum(frs.ProductStandardCost)) as ProductStandardCost,

concat('$', sum((fis.SalesAmount) - (fis.ProductStandardCost))+ sum((frs.SalesAmount) - (frs.ProductStandardCost))) as Profit,

sum(fis.OrderQuantity)+ sum(frs.OrderQuantity) as OrderQuantity

from [dbo].[DimProduct] as p

left join [dbo].[FactInternetSales] fis on p.ProductKey = fis.ProductKey

left join [dbo].[FactResellerSales] frs on p.ProductKey = frs.ProductKey

join [dbo].[DimProductSubcategory] ps on ps.ProductSubcategoryKey = p.ProductSubcategoryKey

join [dbo].[DimProductCategory] pc on pc.ProductCategoryKey = ps.ProductCategoryKey

group by pc.EnglishProductCategoryName

order by sum(fis.SalesAmount) + sum(frs.SalesAmount) desc;

1. **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 st.SalesTerritoryCountry as Sales\_territory\_country,

count(fis.SalesOrderNumber)+count(frs.SalesOrderNumber),

concat('$',sum(fis.SalesAmount)+sum(frs.SalesAmount)) as Sales,

concat('$', sum(fis.ProductStandardCost)+sum(frs.ProductStandardCost)) as ProductStandardCost,

concat('$', sum(((fis.SalesAmount) - (fis.ProductStandardCost)))+ sum((frs.SalesAmount) - (frs.ProductStandardCost))) as Profit,

sum(fis.OrderQuantity)+ sum(frs.OrderQuantity) as OrderQuantity

from [dbo].[DimSalesTerritory] as st

join [dbo].[FactInternetSales] fis on st.SalesTerritoryKey = fis.SalesTerritoryKey

join [dbo].[FactResellerSales] frs on st.SalesTerritoryKey = frs.SalesTerritoryKey

group by st.SalesTerritoryCountry

order by sum(fis.SalesAmount)+sum(frs.SalesAmount);

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

select st.SalesTerritoryCountry as Sales\_territory\_country,

count(fis.SalesOrderNumber)+count(frs.SalesOrderNumber),

concat('$',sum(fis.SalesAmount)+sum(frs.SalesAmount)) as Sales,

concat('$', sum(fis.ProductStandardCost)+sum(frs.ProductStandardCost)) as ProductStandardCost,

concat('$', sum(((fis.SalesAmount) - (fis.ProductStandardCost)))+ sum((frs.SalesAmount) - (frs.ProductStandardCost))) as Profit,

sum(fis.OrderQuantity)+ sum(frs.OrderQuantity) as OrderQuantity

from [dbo].[DimSalesTerritory] as st

join [dbo].[FactInternetSales] fis on st.SalesTerritoryKey = fis.SalesTerritoryKey

join [dbo].[FactResellerSales] frs on st.SalesTerritoryKey = frs.SalesTerritoryKey

group by st.SalesTerritoryCountry

order by sum(fis.SalesAmount)+sum(frs.SalesAmount);

1. **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 st.SalesTerritoryCountry as Sales\_territory\_country,

concat('$',sum(fis.SalesAmount)+sum(frs.SalesAmount)) as Sales,

concat('$', sum(fis.ProductStandardCost)+sum(frs.ProductStandardCost)) as ProductStandardCost,

concat('$', sum((fis.SalesAmount) - (fis.ProductStandardCost))+ sum(frs.SalesAmount) - sum(frs.ProductStandardCost)) as Profit,

sum(fis.OrderQuantity)+ sum(frs.OrderQuantity) as OrderQuantity

from [dbo].[DimSalesTerritory] as st

join [dbo].[FactInternetSales] fis on st.SalesTerritoryKey = fis.SalesTerritoryKey

join [dbo].[FactResellerSales] frs on st.SalesTerritoryKey = frs.SalesTerritoryKey

where st.SalesTerritoryCountry = 'France'

group by st.SalesTerritoryCountry

order by sum(fis.SalesAmount)+sum(frs.SalesAmount);

1. **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;

1. **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 |

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

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;

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

Select concat(E.firstname,' ',E.lastname) as Name,

sum(frs.salesamount) as Total\_Sales ,

DENSE\_RANK() over( order by sum(salesamount) desc) as rn

from FactResellerSales as frs

inner join DimEmployee as E on frs.EmployeeKey=E.EmployeeKey

group by E.FirstName, E.LastName

order by Total\_Sales desc;

1. **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 concat('$',sum(frs.SalesAmount)) as Total\_Sales, concat('$',sum(frs.DiscountAmount)) as Total\_discount,

concat('$', sum((frs.SalesAmount) - (frs.ProductStandardCost))) as Profit,

sum(p.DiscountPct) as Discount\_percentage, p.EnglishPromotionName as Promotion\_name,

p.EnglishPromotionType as Promotion\_type, p.EnglishPromotionCategory as Promotion\_category

from [dbo].[FactResellerSales] as frs

join [dbo].[DimPromotion] p on p.PromotionKey = frs.PromotionKey

group by p.EnglishPromotionName, p.EnglishPromotionType, p.EnglishPromotionCategory

order by sum(frs.SalesAmount) desc;

1. **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,

CONCAT('$',SUM(cte.UnitPrice\*cte.OrderQuantity)) Sales,

CONCAT('$',SUM(cte.ProductStandardCost)) ProductCosts,

CONCAT('$',(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 BY SALES'

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;

1. **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);

1. **What are 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',

CONCAT('$',SUM(cte.UnitPrice\*cte.OrderQuantity)) AS 'Sales'

FROM cte

GROUP BY YEAR(cte.OrderDate), DATENAME(MONTH, cte.OrderDate)

order by YEAR(cte.OrderDate) desc;

1. **Please explain (briefly) the differences between SQL queries used to answer the same questions between AdventureWorksDW2017 & AdventureWorks2017**
2. AdventureWorks database consist of normalized records whereas AdventureWorksDW database follows dimensional model methodology
3. AdventureWorks2017 has a process- specific and application-specific design where as AdventureWorksDW2017 has a data-driven and subject area–driven design.
4. AdventureWorksDW is easy to understand and facts and dimensions are separately stored which is not followed in AdventureWorks database
5. AdventureWorksDW SQL queries requires less number of join to extract result set whereas AdventureWorks comparatively needs joining of more tables
6. AdventureWorks2017 has more entity and relationships than that of AdventureWorksDW2017
7. AdventureWorksDW is used for BI reporting and analysis where as AdventureWorks is and operational model