INFO 7290 DW & BI

Workshop – SQL Queries

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Queries:

Requirement: All monetary numbers need to be in USD $.

Each of the following will have two SQL queries:

A. AdventureWorks2014

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 distinct pc.Name ,sum((sc.OrderQty)*((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount))) as 'Sales' ,
pd.ListPrice,sum(sc.OrderQty)
as 'OrderedQuantity' ,count(sc.OrderQty) as 'NoOFOrders'
,sum((((sc.UnitPrice)-(sc.unitprice*sc.UnitPriceDiscount))-
(pd.ListPrice))*(sc.OrderQty)) as 'Profit'
from sales.SalesOrderDetail sc
join Production.Product pd
on sc.ProductID=pd.ProductID
join Production.ProductSubcategory ps
on pd.ProductSubcategoryID=ps.ProductSubcategoryID
join Production.ProductCategory pc
on ps.ProductCategoryID=pc.ProductCategoryID
join Sales.SalesOrderHeader sh
on sc.SalesOrderID=sh.SalesOrderID
where sh.SalesPersonID is null
group by pc.Name,pd.ListPrice,sc.UnitPrice
order by sales desc;
```

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 distinct pc.Name ,sum((sc.OrderQty)*((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount))) as 'Sales' ,
pd.ListPrice,sum(sc.OrderQty)
as 'OrderedQuantity' ,count(sc.OrderQty) as 'NoOFOrders'
,sum((((sc.UnitPrice)-(sc.unitprice*sc.UnitPriceDiscount))-
(pd.ListPrice))*(sc.OrderQty)) as 'Profit'
from sales.SalesOrderDetail sc
join Production.Product pd
on sc.ProductID=pd.ProductID
join Production.ProductSubcategory ps
on pd.ProductSubcategoryID=ps.ProductSubcategoryID
```

```
join Production.ProductCategory pc
on ps.ProductCategoryID=pc.ProductCategoryID
join Sales.SalesOrderHeader sh
on sc.SalesOrderID=sh.SalesOrderID
where sh.SalesPersonID is Not null
group by pc.Name,pd.ListPrice,sc.UnitPrice
order by sales desc;
```

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 distinct pc.Name ,sum((sc.OrderQty)*((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount))) as 'Sales' ,
pd.ListPrice,sum(sc.OrderQty)
as 'OrderedQuantity' ,count(sc.OrderQty) as 'NoOFOrders'
,sum((((sc.UnitPrice)-(sc.unitprice*sc.UnitPriceDiscount))-
(pd.ListPrice))*(sc.OrderQty)) as 'Profit'
from sales.SalesOrderDetail sc
join Production.Product pd
on sc.ProductID=pd.ProductID
join Production.ProductSubcategory ps
on pd.ProductSubcategoryID=ps.ProductSubcategoryID
join Production.ProductCategory pc
on ps.ProductCategoryID=pc.ProductCategoryID
join Sales.SalesOrderHeader sh
on sc.SalesOrderID=sh.SalesOrderID
group by pc.Name,pd.ListPrice,sc.UnitPrice
order by sales desc;
```

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 distinct pc.Name
,ps.Name,pm.Name,pd.Name,sum((sc.OrderQty)*((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount))) as 'Sales' ,
pd.ListPrice,sum(sc.OrderQty)
as 'OrderedQuantity' ,count(sc.OrderQty) as 'NoOFOrders'
,sum((((sc.UnitPrice)-(sc.unitprice*sc.UnitPriceDiscount))-
(pd.ListPrice))*(sc.OrderQty)) as 'Profit'
from sales.SalesOrderDetail sc
join Production.Product pd
on sc.ProductID=pd.ProductID
join Production.ProductSubcategory ps
on pd.ProductSubcategoryID=ps.ProductSubcategoryID
join Production.ProductCategory pc
on ps.ProductCategoryID=pc.ProductCategoryID
join Sales.SalesOrderHeader sh
```

```
on sc.SalesOrderID=sh.SalesOrderID
join PRODUCTION.ProductModel pm
on pd.ProductModelID=pm.ProductModelID
group by pc.Name,pd.ListPrice,sc.UnitPrice,ps.name,pm.name,pd.name
order by sales desc;
```

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 sr.CountryRegionCode,sum((sc.OrderQty)*((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount))) as 'Sales' ,sum(sc.OrderQty)
as 'OrderedQuantity' ,count(sc.OrderQty) as 'NoOFOrders'
,sum((((sc.UnitPrice)-(sc.unitprice*sc.UnitPriceDiscount))-
(pd.ListPrice))*(sc.OrderQty)) as 'Profit'
from sales.SalesOrderDetail sc
join Production.Product pd
on sc.ProductID=pd.ProductID
join Production.ProductSubcategory ps
on pd.ProductSubcategoryID=ps.ProductSubcategoryID
join Production.ProductCategory pc
on ps.ProductCategoryID=pc.ProductCategoryID
join Sales.SalesOrderHeader sh
on sc.SalesOrderID=sh.SalesOrderID
join Sales.SalesTerritory st
on sh.TerritoryID=st.TerritoryID
join Sales.SalesTerritory sr
on st.CountryRegionCode=sr.CountryRegionCode
group by sr.CountryRegionCode
order by sales desc;
```

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 aa.City,sum((sc.OrderQty)*((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount))) as 'Sales',
sum(pd.StandardCost) as 'Product Cost'
,sum(((pd.ListPrice)-((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount)))*(sc.OrderQty)) as 'Profit'
,sum(sc.OrderQty) as 'Ordered Quantity',count(sc.OrderQty) as 'NoOfOrders'
from sales.SalesOrderDetail sc
join Production.Product pd
on sc.ProductID=pd.ProductID
join Production.ProductSubcategory ps
on pd.ProductSubcategoryID=ps.ProductSubcategoryID
join Production.ProductCategory pc
on ps.ProductCategoryID=pc.ProductCategoryID
join Sales.SalesOrderHeader sh
on sc.SalesOrderID=sh.SalesOrderID
join Sales.SalesTerritory st
```

```
on sh.TerritoryID=st.TerritoryID
join Sales.SalesTerritory sr
on st.CountryRegionCode=sr.CountryRegionCode
join Person.StateProvince sp
on sp.CountryRegionCode=sr.CountryRegionCode
join Person.Address aa
on aa.StateProvinceID=sp.StateProvinceID
where sr.Name='France'
group by aa.City
order by sales desc;
```

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

Query:

```
select top 10 s.name ,sum((sc.OrderQty)*((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount))) as 'Sales',
sum(pd.StandardCost) as 'Product Cost'
,sum(((pd.ListPrice)-((sc.UnitPrice)-
(sc.unitprice*sc.UnitPriceDiscount)))*(sc.OrderQty)) as 'Profit'
,sum(sc.OrderQty) as 'Ordered Quantity',count(sc.OrderQty) as 'NoOfOrders'
from Sales.Store s
join Sales.SalesOrderHeader sh
on s.SalesPersonID=sh.SalesPersonID
join Sales.SalesOrderDetail sc
on sh.SalesOrderID=sc.SalesOrderID
join Production.Product pd
on sc.ProductID=pd.ProductID
group by s.Name
order by 'Sales';
```

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

Query:

```
select top 10 concat(be.FirstName,'',be.MiddleName,'',be.LastName) as
'CustomerName',
sum((sc.OrderQty)*((sc.UnitPrice)-(sc.unitprice*sc.UnitPriceDiscount))) as
'Sales'
from Sales.SalesOrderHeader sh
join Sales.SalesOrderDetail sc
on sh.SalesOrderID=sc.SalesOrderID
join Sales.CreditCard cc
on sh.CreditCardID=cc.CreditCardID
join Sales.PersonCreditCard bc
on cc.CreditCardID=bc.CreditCardID
join Person.Person be
on be.BusinessEntityID=bc.BusinessEntityID
where sh.OnlineOrderFlag=1
group by be.FirstName,be.MiddleName,be.LastName
order by 'Sales' desc;
```

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

Query:

```
select vg.Occupation,sum((so.OrderQty)*((so.UnitPrice)-
(so.unitprice*so.UnitPriceDiscount))) as 'Sales',
 sum(pp.StandardCost) as 'Product Cost'
,sum(((pp.ListPrice)-((so.UnitPrice)-
(so.unitprice*so.UnitPriceDiscount)))*(so.OrderQty)) as 'Profit'
,sum(so.OrderQty) as 'Ordered Quantity',count(so.OrderQty) as 'NoOfOrders'
from Sales.vPersonDemographics vg
join Person.Person be
on be.BusinessEntityID=vg.BusinessEntityID
join Sales.PersonCreditCard bc
on bc.BusinessEntityID=vg.BusinessEntityID
join Sales.CreditCard cc
on cc.CreditCardID=bc.CreditCardID
join sales.SalesOrderHeader sh
on sh.CreditCardID=cc.CreditCardID
join sales.SalesOrderDetail so
on so.SalesOrderID=sh.SalesOrderID
join Production.Product pp
on so.ProductID=pp.ProductID
where Occupation is not null
group by vg.Occupation
order by Sales desc;
```

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

Query:

```
select concat(p.firstname,' ',p.lastname) as "Employee Name",
sum(soh.totaldue) as "Sales"
from Sales.SalesOrderHeader as soh inner join Person.person as p
on soh.SalesPersonID=p.BusinessEntityID
group by concat(p.firstname,' ',p.lastname)
order by'sales' desc;
```

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.?

Query:

```
select
spo.Category,spo.type,spo.description,sum((so.UnitPrice*spo.DiscountPct)*(s
o.OrderQty)) as 'discountedamount'
,sum((so.OrderQty)*((so.UnitPrice)-(so.unitprice*so.UnitPriceDiscount))) as
'Sales',
sum(((pp.ListPrice)-((so.UnitPrice)-
(so.unitprice*so.UnitPriceDiscount)))*(so.OrderQty)) as 'Profit',
100*sum((so.UnitPrice*spo.DiscountPct)*(so.OrderQty))/sum((so.OrderQty)*((s
o.UnitPrice)-(so.unitprice*so.UnitPriceDiscount)))
```

```
as '%ofSales'
 from Sales.SalesOrderDetail so
join sales.SpecialOfferProduct sp
on so.SpecialOfferID=sp.SpecialOfferID
join sales.SalesOrderHeader sh
on so.SalesOrderID=sh.SalesOrderID
join Sales.SpecialOffer spo
on spo.SpecialOfferID=sp.SpecialOfferID
join Production.Product pp
on pp.ProductID=sp.ProductID
where sh.OnlineOrderFlag=0
group by spo.Category,spo.type,spo.description
order by sales 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?

Query:

```
select st.CountryRegionCode,st.Name,st.[Group] as
'Group',sum((so.OrderQty)*((so.UnitPrice)-
(so.unitprice*so.UnitPriceDiscount))) 'Sales' ,
pp.StandardCost as 'Product Cost',sum(so.OrderQty)
as 'OrderedQuantity' ,count(so.OrderQty) as 'NoOFOrders'
,sum(((pp.ListPrice)-((so.UnitPrice)-
(so.unitprice*so.UnitPriceDiscount)))*(so.OrderQty)) as 'Profit'
 from Sales.SalesOrderDetail so
join sales.SalesOrderHeader sh
on so.SalesOrderID=sh.SalesOrderID
join Sales.SalesTerritory st
on st.TerritoryID=sh.TerritoryID
join Production.Product pp
on pp.ProductID=so.ProductID
group by st.CountryRegionCode,st.Name,pp.StandardCost,st.[Group]
order by sales desc;
```

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

Query:

```
select sum(TotalDue) as Total_Sales, year(Orderdate) as Years,
OnlineOrderFlag as Sales_Channel
from Sales.SalesOrderHeader
group by year(Orderdate),OnlineOrderFlag
order by years;
```

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

Query:

```
select sum(TotalDue) as Total_Sales,month(Orderdate) as Months,
year(Orderdate) as Years
from Sales.SalesOrderHeader
group by month(Orderdate),year(Orderdate)
order by years,months;
```

B. AdventureWorksDW2014

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 dc.EnglishProductCategoryName
,fi.OrderQuantity,fi.UnitPrice,Sum(fi.OrderQuantity) as 'NoOfOrders',
sum(fi.OrderQuantity*fi.SalesAmount) as 'Sales',
(fi.SalesAmount-fi.TotalProductCost)*sum(fi.OrderQuantity) as 'Profit'
from dbo.dimproduct dp
join dbo.dimproductsubcategory ds
on dp.ProductSubcategoryKey=ds.ProductSubcategoryKey
join dbo.DimProductCategory dc
on ds.ProductCategoryKey=dc.ProductCategoryKey
join dbo.FactInternetSales fi
on dp.ProductKey=fi.ProductKey
group by dc.EnglishProductCategoryName
,fi.OrderQuantity,fi.UnitPrice,fi.SalesAmount,fi.TotalProductCost
order by Sales desc;
```

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 dc.EnglishProductCategoryName
,fi.OrderQuantity,fi.UnitPrice,Sum(fi.OrderQuantity) as 'NoOfOrders',
sum(fi.OrderQuantity*fi.SalesAmount) as 'Sales',
(fi.SalesAmount-fi.TotalProductCost)*(fi.OrderQuantity) as 'Profit'
from dbo.dimproduct dp
join dbo.dimproductsubcategory ds
on dp.ProductSubcategoryKey=ds.ProductSubcategoryKey
join dbo.DimProductCategory dc
on ds.ProductCategoryKey=dc.ProductCategoryKey
join dbo.FactResellerSales fi
on dp.ProductKey=fi.ProductKey
group by dc.EnglishProductCategoryName
,fi.OrderQuantity,fi.UnitPrice,fi.SalesAmount,fi.TotalProductCost
order by Sales desc;
```

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 dc.EnglishProductCategoryName ,fi.OrderQuantity,fi.UnitPrice as
'Internet',fs.UnitPrice as 'Reseller',
Sum(fi.OrderQuantity+fs.OrderQuantity) as 'NoOfOrders',
sum(fi.OrderQuantity*fi.SalesAmount) + sum(fs.OrderQuantity*fs.SalesAmount)
as 'Sales',
sum((fi.SalesAmount-fi.TotalProductCost)*(fi.OrderQuantity) +
(fs.SalesAmount-fs.TotalProductCost)*(fs.OrderQuantity))
as 'Profit'
```

```
from dbo.dimproduct dp
join dbo.dimproductsubcategory ds
on dp.ProductSubcategoryKey=ds.ProductSubcategoryKey
join dbo.DimProductCategory dc
on ds.ProductCategoryKey=dc.ProductCategoryKey
join dbo.FactResellerSales fi
on dp.ProductKey=fi.ProductKey
join dbo.FactInternetSales fs
on dp.ProductKey=fs.ProductKey
group by dc.EnglishProductCategoryName
,fi.OrderQuantity,fi.UnitPrice,fi.SalesAmount,fi.TotalProductCost,
fs.OrderQuantity,fs.SalesAmount,fs.TotalProductCost,fs.UnitPrice
order by Sales desc;
```

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 dc.EnglishProductCategoryName
,ds.EnglishProductSubcategoryName,dp.EnglishProductName,dp.ModelName
,fi.OrderQuantity,fi.UnitPrice as 'Internet',fs.UnitPrice as 'Reseller',
Sum(fi.OrderQuantity+fs.OrderQuantity) as 'NoOfOrders',
sum(fi.OrderQuantity*fi.SalesAmount) + sum(fs.OrderQuantity*fs.SalesAmount)
as 'Sales',
sum((fi.SalesAmount-fi.TotalProductCost)*(fi.OrderQuantity) +
(fs.SalesAmount-fs.TotalProductCost)*(fs.OrderQuantity))
as 'Profit'
from dbo.dimproduct dp
join dbo.dimproductsubcategory ds
on dp.ProductSubcategoryKey=ds.ProductSubcategoryKey
join dbo.DimProductCategory dc
on ds.ProductCategoryKey=dc.ProductCategoryKey
join dbo.FactResellerSales fi
on dp.ProductKey=fi.ProductKey
join dbo.FactInternetSales fs
on dp.ProductKey=fs.ProductKey
where dc.EnglishProductCategoryName='Accessories'
group by dc.EnglishProductCategoryName
,fi.OrderQuantity,fi.UnitPrice,fi.SalesAmount,fi.TotalProductCost,
fs.OrderQuantity,fs.SalesAmount,fs.TotalProductCost,fs.UnitPrice,ds.English
ProductSubcategoryName,dp.EnglishProductName,dp.ModelName
order by Sales desc;
```

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 distinct dg.EnglishCountryRegionName
,sum(fi.OrderQuantity) as 'Reseller No of Quantity',sum(fs.OrderQuantity)
as 'Internet No of quantity',
```

```
count(fi.OrderQuantity) as 'NoOf Orders For
Reseller',count(fs.OrderQuantity) as 'No Of Orders For Internet',
sum(fi.OrderQuantity*fi.SalesAmount) as 'Resellersales',
sum(fs.OrderQuantity*fs.SalesAmount) as ' InternetSales',
sum((fi.SalesAmount-fi.TotalProductCost)*(fi.OrderQuantity)) as 'Reseller
Profit',
 sum((fs.SalesAmount-fs.TotalProductCost)*(fs.OrderQuantity)) as 'Internet
Profit'
from dbo.dimproduct dp
join dbo.dimproductsubcategory ds
on dp.ProductSubcategoryKey=ds.ProductSubcategoryKey
join dbo.DimProductCategory dc
on ds.ProductCategoryKey=dc.ProductCategoryKey
join dbo.FactResellerSales fi
on dp.ProductKey=fi.ProductKey
join dbo.FactInternetSales fs
on dp.ProductKey=fs.ProductKey
join dbo.DimCustomer dcs
on fs.CustomerKey=dcs.CustomerKey
join dbo.DimGeography dg
on dcs.GeographyKey=dg.GeographyKey
join dbo.DimReseller dr
on dg.GeographyKey=dr.GeographyKey
group by dg.EnglishCountryRegionName
order by [ InternetSales] desc ,Resellersales desc;
```

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 distinct dg.EnglishCountryRegionName,dg.City
,sum(fi.OrderQuantity) as 'Reseller No of Quantity',sum(fs.OrderQuantity)
as 'Internet No of quantity',
count(fi.OrderQuantity) as 'NoOf Orders For
Reseller',count(fs.OrderQuantity) as 'No Of Orders For Internet',
sum(fi.OrderQuantity*fi.SalesAmount) as 'Resellersales',
sum(fs.OrderQuantity*fs.SalesAmount) as ' InternetSales',
sum((fi.SalesAmount-fi.TotalProductCost)*(fi.OrderQuantity)) as 'Reseller
Profit',
 sum((fs.SalesAmount-fs.TotalProductCost)*(fs.OrderQuantity)) as 'Internet
Profit'
from dbo.dimproduct dp
join dbo.dimproductsubcategory ds
on dp.ProductSubcategoryKey=ds.ProductSubcategoryKey
join dbo.DimProductCategory dc
on ds.ProductCategoryKey=dc.ProductCategoryKey
join dbo.FactResellerSales fi
on dp.ProductKey=fi.ProductKey
```

```
join dbo.FactInternetSales fs
on dp.ProductKey=fs.ProductKey
join dbo.DimCustomer dcs
on fs.CustomerKey=dcs.CustomerKey
join dbo.DimGeography dg
on dcs.GeographyKey=dg.GeographyKey
join dbo.DimReseller dr
on dg.GeographyKey=dr.GeographyKey
where dg.EnglishCountryRegionName='France'
group by dg.EnglishCountryRegionName,dg.City
order by [ InternetSales] desc ,Resellersales desc;
```

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

Query:

```
select top 10
dr.resellername,dr.businesstype,sum(fs.OrderQuantity*fs.SalesAmount) as
'Sales'  from dbo.DimReseller dr
join dbo.FactResellerSales fs
on dr.ResellerKey=fs.ResellerKey
group by dr.ResellerName,dr.BusinessType
order by Sales desc
```

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

Query:

```
select concat(e.firstname,' ',e.middlename,' ',e.lastname) as 'Employee
Name',
sum(frs.salesamount*frs.OrderQuantity) as 'Sales Amount'
from FactResellerSales as frs inner join DimEmployee as e
on frs.EmployeeKey=e.EmployeeKey
group by e.FirstName,e.MiddleName,e.LastName
order by 'Sales Amount' desc;
```

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

Query:

```
select dc.englishoccupation ,count(fi.OrderQuantity) as 'Number of
orders',sum(fi.OrderQuantity) as 'Quantity Ordered'
,sum(fi.OrderQuantity*fi.SalesAmount) as 'Sales'
,sum((fi.SalesAmount-fi.TotalProductCost)*(fi.OrderQuantity)) as 'profit'
from dbo.DimCustomer dc
join dbo.FactInternetSales fi
on dc.CustomerKey=fi.CustomerKey
group by dc.EnglishOccupation
order by Sales;
```

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

Query:

```
select concat(e.firstname,' ',e.middlename,' ',e.lastname) as 'Employee
Name',
sum(frs.salesamount*frs.OrderQuantity) as 'Sales Amount'
from FactResellerSales as frs inner join DimEmployee as e
on frs.EmployeeKey=e.EmployeeKey
group by e.FirstName,e.MiddleName,e.LastName
order by 'Sales Amount' desc;
```

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.?

Query:

```
select
dp.EnglishPromotionCategory,dp.EnglishPromotionType,dp.EnglishPromotionName
,
sum((dp.DiscountPct*rs.SalesAmount)) as 'Discount Amounts',
rs.discountamount,sum(rs.OrderQuantity*((rs.SalesAmount)-
(dp.DiscountPct*rs.SalesAmount))) as 'Sales',
sum((((rs.SalesAmount)-(dp.DiscountPct*rs.SalesAmount))-
rs.TotalProductCost)*(rs.OrderQuantity)) as 'Profit',
100*(sum((dp.DiscountPct*rs.SalesAmount)))/sum(rs.OrderQuantity*((rs.SalesA
mount)-(dp.DiscountPct*rs.SalesAmount)))
as '%of Promotion Sale'
 from dbo.DimPromotion dp
join dbo.FactResellerSales rs
on dp.PromotionKey=rs.PromotionKey
group by
dp.EnglishPromotionCategory,dp.EnglishPromotionType,dp.EnglishPromotionName
,dp.DiscountPct,rs.DiscountAmount
order by Sales 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?

Query:

```
select
dt.SalesTerritoryGroup,dt.SalesTerritoryCountry,dt.SalesTerritoryRegion,
sum(fs.OrderQuantity) as 'Reseller No of Quantity',sum(fct.OrderQuantity)
as 'Internet No of quantity',
count(fs.OrderQuantity) as 'NoOf Orders For
Reseller',count(fct.OrderQuantity) as 'No Of Orders For Internet',
sum(fs.OrderQuantity*fs.SalesAmount) as 'Resellersales',
sum(fct.OrderQuantity*fct.SalesAmount) as ' InternetSales',
sum((fs.SalesAmount-fs.TotalProductCost)*(fs.OrderQuantity)) as 'Reseller
Profit',
 sum((fct.SalesAmount-fct.TotalProductCost)*(fct.OrderQuantity)) as
'Internet Profit'
from dbo.DimSalesTerritory dt
join dbo.FactInternetSales fs
```

```
on dt.SalesTerritoryKey=fs.SalesTerritoryKey
join dbo.FactResellerSales fct
on fct.SalesTerritoryKey=dt.SalesTerritoryKey
group by
dt.SalesTerritoryGroup,dt.SalesTerritoryCountry,dt.SalesTerritoryRegion;
```

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

Query:

```
select fsq.calendaryear as 'Year', sum(fis.orderquantity*fis.salesamount)
as 'Internet Sales'
,sum(frs.orderquantity*frs.salesamount) as 'Reseller Sales'
,sum(fis.orderquantity*fis.salesamount)+sum(frs.orderquantity*frs.salesamou
nt) as 'Total Sales'
from FactSalesQuota as fsq join DimEmployee as e
on fsq.EmployeeKey=e.EmployeeKey  join FactResellerSales as frs
on e.EmployeeKey=frs.EmployeeKey  join DimProduct as p
on frs.ProductKey=p.ProductKey  join FactInternetSales as fis
on fis.ProductKey=p.ProductKey
group by fsq.CalendarYear
order by 'Internet Sales' desc, 'Reseller Sales' desc,'Total Sales' desc;
```

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

Query:

```
select month(fsq.Date) as 'Month', year(fsq.Date) as
'Year',sum(fis.orderquantity*fis.salesamount)+sum(frs.orderquantity*frs.sal
esamount) 'Total Sales'
from FactSalesQuota as fsq  join DimEmployee as e
on fsq.EmployeeKey=e.EmployeeKey  join FactResellerSales as frs
on e.EmployeeKey=frs.EmployeeKey  join DimProduct as p
on frs.ProductKey=p.ProductKey join FactInternetSales as fis
on fis.ProductKey=p.ProductKey
group by month(fsq.Date), year(fsq.Date)
order by 'Total Sales' desc;
```

15. Please explain (briefly) the differences between SQL queries used to answer the same questions between AdventureWorksDW2014 & AdventureWorks2014

It is because of the differences between architecture of OLTP and OLAP.

AdventureWorksDW provides a very good practical sample of OLAP.

AdventureWorksDW is datawarehouse DB that shows how a datawarehouse db designed based on the source db AdventureWorks

AdventureWorksDW is generated based on AdventureWorks DB just for OLAP purposes.

OLAP systems generally have very better performance for Analysis and Reporting tasks.

OLAP (On-line Analytical Processing) is characterized by relatively low volume of transactions. Queries are often very complex and involve aggregations. For OLAP systems a response time is an effectiveness measure. OLAP applications are widely used by Data Mining techniques. In OLAP database there is aggregated, historical data, stored in multi-dimensional schemas (usually star schema).

OLTP systems have good performance for storing data. AdventureWorks is sample db for OLTP i,e how the ERP system stores the company business data.

OLTP (On-line Transaction Processing) is characterized by a large number of short on-line transactions (INSERT, UPDATE, DELETE). The main emphasis for OLTP systems is put on very fast query processing, maintaining data integrity in multi-access environments and an effectiveness measured by number of transactions per second. In OLTP database there is detailed and current data, and schema used to store transactional databases is the entity model (usually 3NF).