COURSE ASSIGNMENT/PROJECT-------------------------------------------------**Ubong Joseph**

For the course: Developing Queries with Microsoft SQL Server

Business Requirements

-- -- --Question 1

Retrieve information about the products with colour values except null, red, silver/black, white and list price between

£75 and £750. Rename the column StandardCost to Price. Also, sort the results in descending order by list price.

select \* from [Production].[Product];

SOLUTION

SELECT ProductID, name, ProductNUmber, Color, ListPrice, StandardCost AS Price

FROM [Production].[Product]

where color NOT IN ('red','silver','black','white')

AND ListPrice between 75 and 750

ORDER By ListPrice desc;

Question 2

Find all the male employees born between 1962 to 1970 and with hire date greater than 2001 and female employees born between 1972 and 1975 and hire date between 2001 and 2002.

--SOLUTION

select BusinessEntityID, NationalIDNumber, JobTitle, BirthDate,

MaritalStatus, Gender, HireDate from [HumanResources].[Employee]

where Gender = 'M' and YEAR(BirthDate) between 1962 and 1970

and YEAR(HireDate) > 2001

union

select BusinessEntityID, NationalIDNumber, JobTitle, BirthDate,

MaritalStatus, Gender, HireDate from [HumanResources].[Employee]

where Gender = 'F' and YEAR(BirthDate) between 1972 and 1975

and YEAR(HireDate) between 2001 and 2002

order by BirthDate desc;

Question 3

Create a list of 10 most expensive products that have a product number beginning with ‘BK’. Include only the product ID, Name and colour.

--SOLUTION( look at the product table)

SELECT top 10 ProductNumber, ProductID, Name, Color,

ListPrice FROM [Production].[Product]

where ProductNumber like 'BK%'

order by ListPrice desc;

Question 4

Create a list of all contact persons, where the first 4 characters of the last name are the same as the first four characters of the email address. Also, for all contacts whose first name and the last name begin with the same characters, create a new column called full name combining first name and the last name only. Also provide the length of the new column full name.

--SOLUTION

--A

select \* from [Person].[Person];

select Person.BusinessEntityID, FirstName, LastName, EmailAddress from Person.Person

left join Person.EmailAddress

on Person.BusinessEntityID = EmailAddress.BusinessEntityID

where SUBSTRING(LastName,1,4) = SUBSTRING(EmailAddress,1,4)

--SOLUTION

--B

select FirstName, LastName,

case

when SUBSTRING(LastName,1,1) = SUBSTRING(FirstName,1,1)

then CONCAT(Firstname,' ',LastName)

else ''

end as Fullname,

LEN(case

when SUBSTRING(LastName,1,1) = SUBSTRING(FirstName,1,1)

then CONCAT(Firstname,' ',LastName)

else ''

end) as lengthoffullname

from Person.Person

where (case

when SUBSTRING(LastName,1,1) = SUBSTRING(FirstName,1,1)

then CONCAT(Firstname,' ',LastName)

else ''

end) <> ''

Question 5

Return all product subcategories that take an average of 3 days or longer to manufacture.

--SOLUTION

select distinct ProductSubcategory.ProductSubcategoryID, ProductSubcategory.Name as ProductSubcategoryName,

DaysToManufacture from [Production].[ProductSubcategory]

left join [Production].[Product]

on ProductSubcategory.ProductSubcategoryID = Product.ProductSubcategoryID

where DaysToManufacture >= 3;

Question 6

Create a list of product segmentation by defining criteria that places each item in a predefined segment as follows. If price gets less than £200 then low value. If price is between £201 and £750 then mid value. If between £750 and £1250 then mid to high value else higher value. Filter the results only for black, silver and red color products.

--SOLUTION

select ProductID, Name, Color, ListPrice,

case

when ListPrice < 201

then 'low value'

when ListPrice between 200 and 751

then 'mid value'

when ListPrice between 750 and 1251

then 'mid to high value'

else 'higher value'

end as productsegmentation

from [Production].[Product]

where color in ('black', 'silver', 'red')

order by ProductID asc;

Question 7

How many Distinct Job title is present in the Employee table?

--SOLUTION

select distinct JobTitle, count(JobTitle) as NumberofJobtitle

from [HumanResources].[Employee]

group by JobTitle;

--for just number

select count(distinct JobTitle) as NumberofJobtitle from [HumanResources].[Employee];

Question 8

Use employee table and calculate the ages of each employee at the time of hiring.

--SOLUTION

select BusinessEntityID, Gender,

Year(HireDate) - Year(BirthDate) AS AgeatHire

from [HumanResources].[Employee];

Question 9

How many employees will be due a long service award in the next 5 years, if long service is 20 years?

--SOLUTION

select BusinessEntityID, JobTitle, Gender,

Year(GETDATE()) - Year(HireDate) AS Serviceyears,

case

when (Year(GETDATE()) - Year(HireDate)) > 14

then 'Award due in 5years'

else 'No Award'

end as Recognition

from [HumanResources].[Employee]

where Year(GETDATE()) - Year(HireDate) >= 15;

--for just number

select count(Jobtitle) from [HumanResources].[Employee]

where (Year(GETDATE()) - Year(HireDate)) > 14;

Question 10

How many more years does each employee have to work before reaching sentiment, if sentiment age is 65?

--SOLUTION

select BusinessEntityID, JobTitle, Gender, Year(GETDATE()) - Year(BirthDate) AS Age,

65 - (Year(GETDATE()) - Year(BirthDate)) AS Workingyearsleft

from [HumanResources].[Employee]

order by Age desc;

Question 11

Implement new price policy on the product table base on the colour of the item

If white increase price by 8%, If yellow reduce price by 7.5%, If black increase price by 17.2%. If multi, silver, silver/black or blue take the square root of the price and double the value. Column should be called Newprice. For each item, also calculate commission as 37.5% of newly computed list price.

--SOLUTION

select ProductID, Name, isnull(Color,'No color') as Color, ListPrice as OldPrice,

case

when Color = 'white' then ListPrice \* 1.08

when Color = 'yellow' then ListPrice \* 1.075

when Color = 'black' then ListPrice \* 1.172

when Color in ('multi', 'silver', 'silver/black', 'blue') then sqrt(ListPrice) \* 2

else ListPrice

end as NewPrice,

(case

when Color = 'white' then ListPrice \* 1.08

when Color = 'yellow' then ListPrice \* 1.075

when Color = 'black' then ListPrice \* 1.172

when Color in ('multi', 'silver', 'silver/black', 'blue')

then sqrt(ListPrice) \* 2

else ListPrice

end) \* 0.375 as Commission

from [Production].[Product];

Question 12

Print the information about all the Sales.Person and their sales quota. For every Sales person you should provide their FirstName, LastName, HireDate, SickLeaveHours and Region where they work.

--SOLUTION

select SalesPerson.BusinessEntityID, FirstName, LastName, SalesQuota, HireDate, SickLeaveHours, SalesTerritory.Name as Region

from [Sales].[SalesPerson] left join [HumanResources].[Employee]

on SalesPerson.BusinessEntityID = Employee.BusinessEntityID

left join [Person].[Person]

on SalesPerson.BusinessEntityID = Person.BusinessEntityID

left join [Sales].[SalesTerritory]

on SalesPerson.TerritoryID = SalesTerritory.TerritoryID;

Question 13

Using adventure works, write a query to extract the following information.

 Product name

 Product category name

 Product subcategory name

 Sales person

 Revenue

 Month of transaction

 Quarter of transaction

--SOLUTION

select Product.Name as Productname, ProductCategory.Name as Productcategoryname,

ProductSubcategory.Name as Productsubcategoryname,

LineTotal as Revenue, Datename(Month, OrderDate) as Monthoftransaction ,

Datepart(quarter,OrderDate) as Quarteroftransaction,

CONCAT(Person.FirstName,' ',Person.LastName) as Salesperson,

SalesTerritory.Name as Region

from [Sales].[SalesOrderDetail]

left join [Production].[Product]

on SalesOrderDetail.ProductID = Product.ProductID

left join [Production].ProductSubcategory

on Product.ProductSubcategoryID = ProductSubcategory.ProductSubcategoryID

left join [Production].[ProductCategory]

on ProductCategory.ProductCategoryID = ProductSubcategory.ProductCategoryID

left join [Sales].[SalesOrderHeader]

on SalesOrderHeader.SalesOrderID = SalesOrderDetail.SalesOrderID

left join [Sales].[SalesTerritory]

on SalesOrderHeader.TerritoryID = SalesTerritory.TerritoryID

left join [Person].[Person]

on Person.BusinessEntityID = SalesOrderHeader.SalesPersonID

order by Productname asc;

Question 14

Display the information about the details of an order i.e. order number, order date, amount of order, which customer gives the order and which salesman works for that customer and how much commission he gets for an order.

--SOLUTION

SELECT SalesOrderDetailID,OrderDate,OrderQty,CustomerID,SalesPersonID,CommissionPct

FROM

sales.SalesOrderDetail INNER JOIN Sales.SalesOrderHeader

ON SalesOrderDetail.SalesOrderID=SalesOrderHeader.SalesOrderID

INNER JOIN Sales.SalesPerson

ON SalesPerson.BusinessEntityID=SalesOrderHeader.SalesPersonID

select SalesOrderDetail.SalesOrderID as ordernumber, convert(date,SalesOrderHeader.OrderDate) as orderdate,

LineTotal as amountoforder, CustomerID, CONCAT(Person.FirstName,' ',Person.LastName) as Customer, SalesPersonID,

CONCAT(Person.FirstName,' ',Person.LastName) as SalesPerson, cast(CommissionPct \* LineTotal as float) as Commission

from [Sales].[SalesOrderDetail]

left join

[Sales].[SalesOrderHeader] on SalesOrderDetail.SalesOrderID = SalesOrderHeader.SalesOrderID

left join

[Person].[Person] on Person.BusinessEntityID = SalesOrderHeader.CustomerID

left join

[Sales].[SalesPerson] on SalesOrderHeader.SalesPersonID = SalesPerson.BusinessEntityID;

Question 15

For all the products calculate

- Commission as 14.790% of standard cost,

- Margin, if standard cost is increased or decreased as follows:

Black: +22%,

Red: -12%

Silver: +15%

Multi: +5%

White: Two times original cost divided by the square root of cost For other colours, standard cost remains the same

--SOLUTION

select ProductID, Name, isnull(Color,'No color') as Color, StandardCost as OldCost,

case

when Color = 'white' then ((2 \* StandardCost)/SQRT(StandardCost))

when Color = 'Red' then StandardCost \* 0.88

when Color = 'black' then StandardCost \* 1.22

when Color = 'Silver' then StandardCost \* 1.15

when Color = 'Multi' then StandardCost \* 1.05

else StandardCost

end as NewCost,

(case

when Color = 'white' then ((2 \* StandardCost)/SQRT(StandardCost))

when Color = 'Red' then StandardCost \* 0.88

when Color = 'black' then StandardCost \* 1.22

when Color = 'Silver' then StandardCost \* 1.15

when Color = 'Multi' then StandardCost \* 1.05

else StandardCost

end) \* 0.1479 as Commission

from [Production].[Product];

Question 16

Create a view to find out the top 5 most expensive products for each colour.

--SOLUTION

with crow as(

select

ProductId,

Color,

ListPrice,

ROW\_NUMBER() over(partition by Color

order by ListPrice desc) as RowNo

from [Production].[Product]

)

select \* from crow where RowNo <= 5