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# MySQL Northwind Queries - Part 2

This is part 2 of the tutorial series - converting the popular Microsoft Access Northwind database queries to MySQL queries. These queries are originated from Access Northwind Traders application. Some of them are relatively complex aggregated queries with sub-queries.

### 6. Order Details Extended

This query calculates sales price for each order after discount is applied.

```
select distinct y.OrderID,
    y.ProductID,
    x.ProductName,
    y.UnitPrice,
    y.Quantity,
    y.Discount,
    round(y.UnitPrice * y.Quantity * (1 - y.Discount), 2) as ExtendedPrice
from Products x
inner join Order_Details y on x.ProductID = y.ProductID
order by y.OrderID;
```

Here is the query result. 2,155 records returned.

| OrderID | ProductID | ProductName | UnitPrice | Quantity | Discount | ExtendedPrice |
|---|---|---|---|---|---|---|
| 10248 | 42 | Singaporean Hokkien Fried Mee | 9.8 | 10 | 0 | 98.00 |
| 10248 | 72 | Mozzarella di Giovanni | 34.8 | 5 | 0 | 174.00 |
| 10248 | 11 | Queso Cabrales | 14 | 12 | 0 | 168.00 |
| 10249 | 14 | Tofu | 18.6 | 9 | 0 | 167.40 |
| 10249 | 51 | Manjimup Dried Apples | 42.4 | 40 | 0 | 1696.00 |
| 10250 | 51 | Manjimup Dried Apples | 42.4 | 35 | 0.15 | 1261.40 |
| 10250 | 65 | Louisiana Fiery Hot Pepper Sauce | 16.8 | 15 | 0.15 | 214.20 |
| 10250 | 41 | Jack's New England Clam Chowder | 7.7 | 10 | 0 | 77.00 |

### 7. Sales by Category

For each category, we get the list of products sold and the total sales amount. Note that, the inner query for table c is to get sales for each product on each order. It then joins with outer query on Product_ID. In the outer query, products are grouped for each category.

```
select distinct a.CategoryID,
    a.CategoryName,
    b.ProductName,
    sum(c.ExtendedPrice) as ProductSales
from Categories a
inner join Products b on a.CategoryID = b.CategoryID
inner join
(
    select distinct y.OrderID,
        y.ProductID,
        x.ProductName,
        y.UnitPrice,
        y.Quantity,
        y.Discount,
        round(y.UnitPrice * y.Quantity * (1 - y.Discount), 2) as ExtendedPrice
    from Products x
    inner join Order_Details y on x.ProductID = y.ProductID
    order by y.OrderID
) c on c.ProductID = b.ProductID
inner join Orders d on d.OrderID = c.OrderID
where d.OrderDate between date('1997/1/1') and date('1997/12/31')
group by a.CategoryID, a.CategoryName, b.ProductName
order by a.CategoryName, b.ProductName, ProductSales;
```

Here is the query result. 77 records returned.

| CategoryID | CategoryName | ProductName | ProductSales |
|---|---|---|---|
| 1 | Beverages | Chai | 4887.00 |
| 1 | Beverages | Chang | 7038.55 |
| 1 | Beverages | Chartreuse verte | 4192.20 |
| 1 | Beverages | Côte de Blaye | 49198.08 |
| 1 | Beverages | Guaraná Fantástica | 1630.12 |
| 1 | Beverages | Ipoh Coffee | 11069.90 |
| 1 | Beverages | Lakkalikööri | 7379.10 |
| 1 | Beverages | Laughing Lumberjack Lager | 910.00 |
| 1 | Beverages | Outback Lager | 5468.40 |
| 1 | Beverages | Rhönbräu Klosterbier | 4485.54 |

**8. Ten Most Expensive Products**

The two queries below return the same result. It demonstrates how MySQL limits the number of records returned.

The first query uses correlated sub-query to get the top 10 most expensive products.

The second query retrieves data from an ordered sub-query table and then the keyword LIMIT is used outside the sub-query to restrict the number of rows returned.

```
-- Query 1
select distinct ProductName as Ten_Most_Expensive_Products,
         UnitPrice
from Products as a
where 10 >= (select count(distinct UnitPrice)
                    from Products as b
                    where b.UnitPrice >= a.UnitPrice)
order by UnitPrice desc;

-- Query 2
select * from
(
    select distinct ProductName as Ten_Most_Expensive_Products,
           UnitPrice
    from Products
    order by UnitPrice desc
) as a
limit 10;
```

Here is the query result. 10 records returned.

| Ten_Most_Expensive_Products | UnitPrice |
|---|---|
| Côte de Blaye | 263.5 |
| Thüringer Rostbratwurst | 123.79 |
| Mishi Kobe Niku | 97 |
| Sir Rodney's Marmalade | 81 |
| Carnarvon Tigers | 62.5 |
| Raclette Courdavault | 55 |
| Manjimup Dried Apples | 53 |
| Tarte au sucre | 49.3 |
| Ipoh Coffee | 46 |
| Rössle Sauerkraut | 45.6 |

**9. Products by Category**

This is a simple query just because it's in Access Northwind so we converted it here in MySQL.

```
select distinct a.CategoryName,
    b.ProductName,
    b.QuantityPerUnit,
    b.UnitsInStock,
    b.Discontinued
from Categories a
inner join Products b on a.CategoryID = b.CategoryID
where b.Discontinued = 'N'
order by a.CategoryName, b.ProductName;
```

Here is the query result. 69 records returned.

| CategoryName | ProductName | QuantityPerUnit | UnitsInStock | Discontinued |
|---|---|---|---|---|
| Beverages | Chai | 10 boxes x 20 bags | 39 | n |
| Beverages | Chang | 24 - 12 oz bottles | 17 | n |
| Beverages | Chartreuse verte | 750 cc per bottle | 69 | n |
| Beverages | Côte de Blaye | 12 - 75 cl bottles | 17 | n |
| Beverages | Ipoh Coffee | 16 - 500 g tins | 17 | n |
| Beverages | Lakkalikööri | 500 ml | 57 | n |
| Beverages | Laughing Lumberjack Lager | 24 - 12 oz bottles | 52 | n |
| Beverages | Outback Lager | 24 - 355 ml bottles | 15 | n |

**10. Customers and Suppliers by City**

This query shows how to use UNION to merge Customers and Suppliers into one result set by identifying them as having different relationships to Northwind Traders - Customers and Suppliers.

```
select City, CompanyName, ContactName, 'Customers' as Relationship
from Customers
union
select City, CompanyName, ContactName, 'Suppliers'
from Suppliers
order by City, CompanyName;
```

Here is the query result. 120 records returned.

| City | CompanyName | ContactName | Relationship |
|---|---|---|---|
| Aachen | Drachenblut Delikatessen | Sven Ottlieb | Customers |
| Albuquerque | Rattlesnake Canyon Grocery | Paula Wilson | Customers |
| Anchorage | Old World Delicatessen | Rene Phillips | Customers |
| Ann Arbor | Grandma Kelly's Homestead | Regina Murphy | Suppliers |
| Annecy | Gai pâturage | Eliane Noz | Suppliers |
| Århus | Vaffeljernet | Palle Ibsen | Customers |
| Barcelona | Galería del gastrónomo | Eduardo Saavedra | Customers |
| Barquisimeto | LILA-Supermercado | Carlos González | Customers |
| Bend | Bigfoot Breweries | Cheryl Saylor | Suppliers |

**Other tutorials in this category**

1. MySQL Northwind Queries - Part 1
2. MySQL Northwind Queries - Part 3
3. How to work with two unrelated values in MySQL

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