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SQL Project BY Saleh Sandhu
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--1.1 Write a query that lists all Customers in either Paris or London. Include Customer ID, Company Name and all address fields.

```
SELECT c.CustomerID, c.CompanyName, c.Address, c.City --Selecting columns
FROM Customers c --From table customer
WHERE c.City IN ('London', 'Paris') --Choosing specific cities
```

--1.2 List all products stored in bottles.

```
SELECT * --Selecting all products
FROM Products p --from table products
WHERE CHARINDEX('bottles', p.QuantityPerUnit) >0 --Where there is a bottle string
```

--1.3 Repeat question above, but add in the Supplier Name and Country.

```
SELECT p.*, s.Country, s.CompanyName -- Selecting values
FROM Products p INNER JOIN Suppliers s --From various tables
ON p.SupplierID=s.SupplierID --Connecting foreign keys
WHERE CHARINDEX('bottles', p.QuantityPerUnit) >0 --Where there is a bottle string
```

--1.4 Write an SQL Statement that shows how many products there are in each category. Include Category Name in result set and list the highest number first.

```
SELECT c.CategoryName, COUNT(p.CategoryID) AS "Total" --Select values
FROM Categories c LEFT JOIN Products p --From tables
ON c.CategoryID=p.CategoryID --Connecting foreign key
GROUP BY c.CategoryName, c.CategoryID --Grouping values
ORDER BY "Total" DESC --Ordering
```

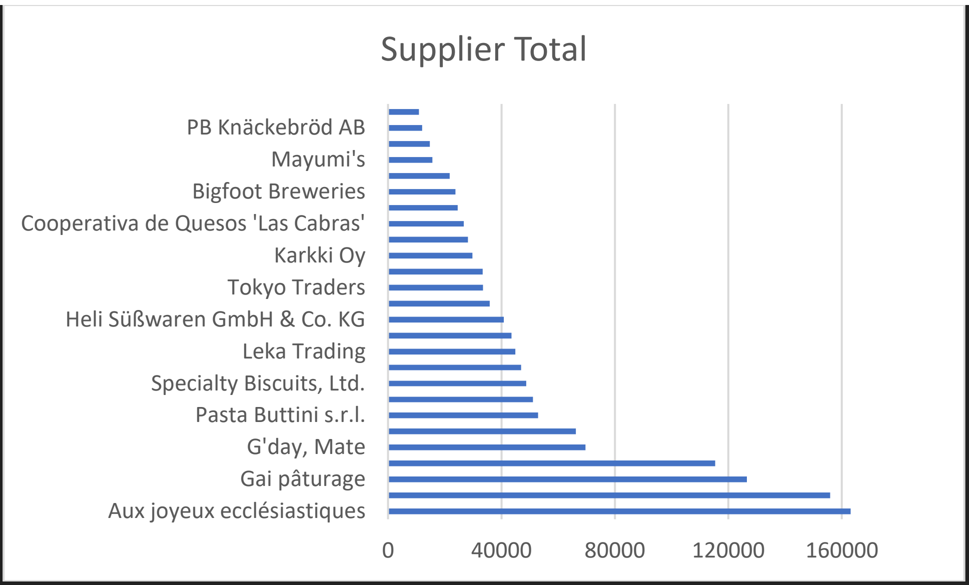
--1.5 List all UK employees using concatenation to join their title of courtesy, first name and last name together. Also include their city of residence.

```
SELECT CONCAT(e.TitleOfCourtesy, ' ', e.FirstName, ' ', e.LastName) AS "Name", e.City --
Selecting values
FROM Employees e --From table
WHERE e.Country = 'UK'--Where they are from UK
```

--1.6 List Sales Totals for all Sales Regions (via the Territories table using 4 joins) with a Sales Total greater than 1,000,000. Use rounding or FORMAT to present the numbers.

```
SELECT r.RegionDescription, ROUND(SUM(od.Quantity * od.UnitPrice * 1-
od.Discount),2) AS "Total Sales" --Selecting variable
FROM  [Order Details] od --From table
INNER JOIN Orders o ON o.OrderID = od.OrderID --From various tables
INNER JOIN EmployeeTerritories et ON et.EmployeeID = o.EmployeeID
INNER JOIN Territories t ON t.TerritoryID = et.TerritoryID
INNER JOIN Region r ON r.RegionID = t.RegionID
```

```sql
GROUP BY r.RegionDescription --Group the data
HAVING ROUND(SUM(od.Quantity * od.UnitPrice * 1-od.Discount),2) >1000000 --
Having clause used because where cannot be used with aggregate functions


--1.7 Count how many Orders have a Freight amount greater than 100.00 and either USA or UK as
Ship Country.

SELECT COUNT(*) AS "Orders" --counting number of variables
FROM Orders o --From table
WHERE o.Freight > 100.00 AND o.ShipCountry IN ('UK', 'USA') --adding conditions


--1.8 Write an SQL Statement to identify the Order Number of the Order with the highest
amount(value) of discount applied to that order.MAX

SELECT TOP 1 od.OrderID, od.UnitPrice * od.Quantity * od.Discount /100 AS "Value" --
Selecting top variables
FROM [Order Details] od --From order details table
ORDER BY "Value" DESC --Order by descending


--2.1 Spartans Table – include details about all the Spartans on this course. Separate Title, First
Name and Last Name into separate columns, and include University attended, course taken and
mark achieved. Add any other columns you feel would be appropriate.

CREATE DATABASE saleh_db --Creating database

USE saleh_db --Using database
CREATE TABLE spartans --Creating table
(
    spartan_ID INT PRIMARY KEY IDENTITY,
    title VARCHAR(10), --Adding in rows
    first_name VARCHAR(20),
    last_name VARCHAR(20),
    university_attended VARCHAR(50),
    course_taken VARCHAR(50),
    mark_achieved VARCHAR(20),

)

-- 2.2 Write SQL statements to add the details of the Spartans in your course to the table you have
created.


INSERT INTO spartans VALUES --inserting values to table
(
    'Mr', 'Reece', 'Louch', 'University of Warwick', 'Computer Science', '2:2'
),
(
    'Mr', 'Saleh', 'Sandhu', 'University of Westminster', 'Computer Science', '2:1'
),
(
    'Mr', 'Svilen', 'Petrov', 'London Metropolitan University', 'BSc Computing', 'First'
),
(
    'Mr', 'Toyin', 'Ajani', 'University of Bath', 'Chemical Engineering', 'First'
),
(
    'Mr', 'Ben', 'Swift', 'Nottingham Trent University', 'Computer Science', '2:1'
),
(
    'Mr', 'Abdullah', 'Muhammad', 'University of Southampton', 'Physics', 'First'
),
(
    'Mr', 'Chris', 'Cunningham', 'Loughborough', 'Computer Science', '2:1'
),
(
    'Mr', 'Dami', 'Oshidele', 'Electronic Engineering with Management BEng', 'Kings College
 London','2:1'
),
(
    'Ms', 'Janja', 'Kovacevic', 'University of Massachusetts Amherst', 'Computer Sience and
 Computational Mathematics', '3.9'
),
(
    'Mr','Shahid','Enayat','Brunel University', 'Electronic and Electrical Engineering','2:
2'
),
(
    'Mr', 'Emmanuel', 'Buraimo', 'Kings College London', 'Computer Science Bsc', '2:1'
)

SELECT * FROM spartans --viewing table


--3.1 List all Employees from the Employees table and who they report to. No Excel required

SELECT CONCAT(e.FirstName, ' ', e.LastName) AS "Employee Name", CONCAT(em.FirstName, ' ', e
m.LastName) AS "Reporting to" --Seleting variables
FROM Employees e --From table employee
LEFT JOIN Employees em ON e.ReportsTo=em.EmployeeID --Connecting foreign keys


--3.2 List all Suppliers with total sales over $10,000 in the Order Details table. Include the Company
Name from the Suppliers Table and present as a bar chart as below: (5 Marks)

SELECT s.CompanyName, SUM(od.Quantity * od.UnitPrice * 1-od.Discount) AS "Total" --
selecting variables
FROM [Order Details] od --from table
INNER JOIN Products p ON od.ProductID=p.ProductID --connecting foreign keys
INNER JOIN Suppliers s ON p.SupplierID=s.SupplierID
GROUP BY s.CompanyName --grouping value
HAVING SUM(od.Quantity * od.UnitPrice * 1-od.Discount) > 10000 --
having use because where cannot be used with aggregate
ORDER BY "Total" DESC --order by descending
```

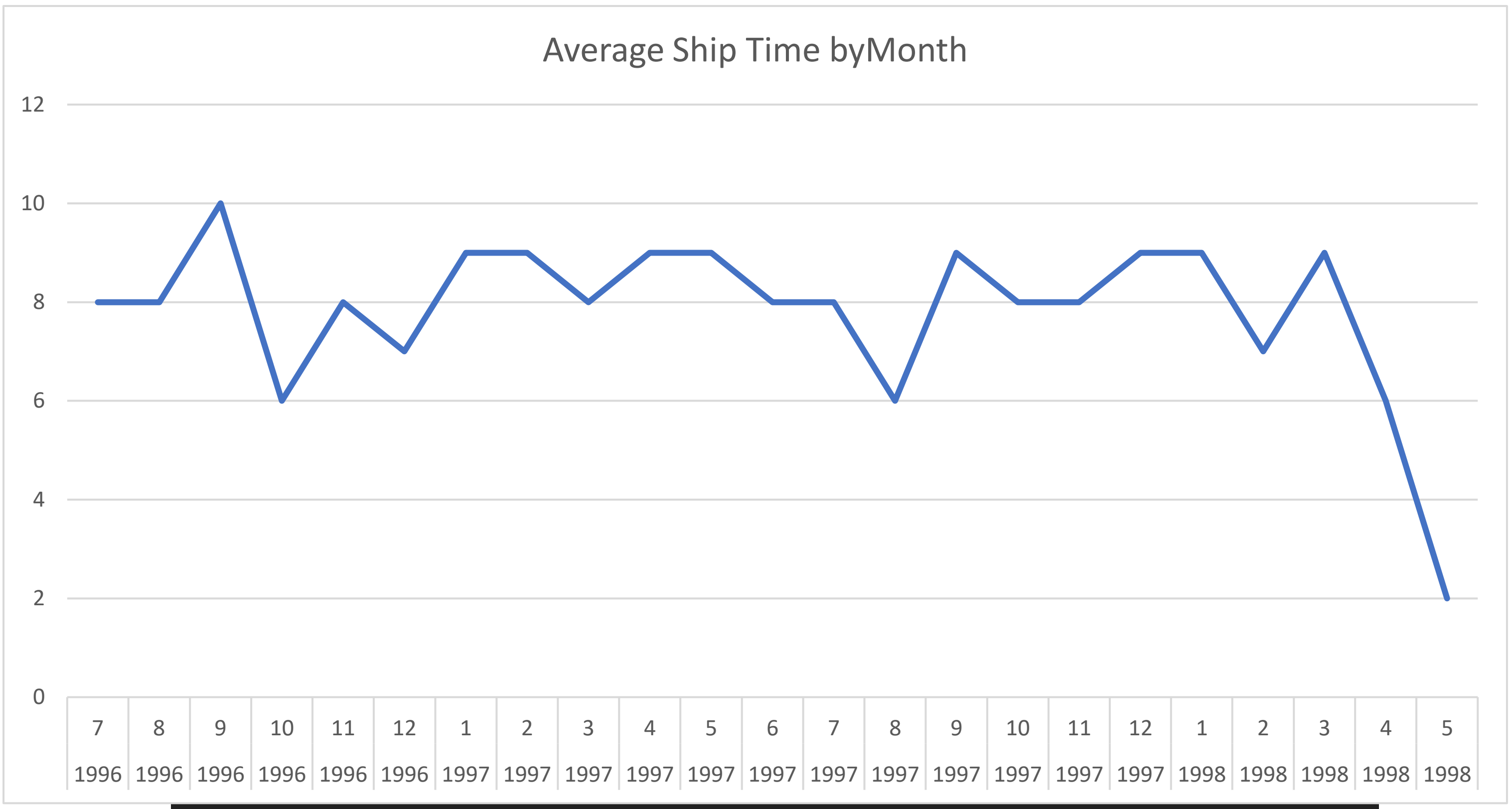


--3.3 List the Top 10 Customers YTD for the latest year in the Orders file. Based on total value of orders shipped. No Excel required.

```
SELECT TOP 10 c.CompanyName, SUM(od.UnitPrice * od.Quantity * 1-od.Discount) AS "Value" --
selecing top 10 values
FROM [Order Details] od INNER JOIN Orders o ON od.OrderID=o.OrderID --from table
INNER JOIN Customers c ON o.CustomerID=c.CustomerID --connecting foreign key
GROUP BY c.CompanyName --grouping values
HAVING YEAR(MAX(o.ShippedDate)) = '1998' --
having function used because where cannot be used with aggregate keywords
ORDER By "Value" DESC --order by descending
```

--3.4 Plot the Average Ship Time by month for all data in the Orders Table using a line chart as below

```
SELECT YEAR(o.OrderDate) AS "Year", MONTH(o.OrderDate) AS "Month", AVG(DATEDIFF(d, o.OrderD
ate, o.ShippedDate)) AS "Days to Ship" --electing varaibles
FROM Orders o --from table
GROUP BY MONTH(o.OrderDate), YEAR(o.OrderDate) --grouping values
ORDER BY "Year" ASC, "Month" ASC --order by descending
```


Average Ship Time byMonth
12
10
8
6
4
2
0
7 1996
8 1996
9 1996
10 1996
11 1996
12 1996
1 1997
2 1997
3 1997
4 1997
5 1997
6 1997
7 1997
8 1997
9 1997
10 1997
11 1997
12 1997
1 1998
2 1998
3 1998
4 1998
5 1998

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