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Pharma Data Analysis

1. Retrieve all columns for all records in the dataset.

Ans: `SELECT * FROM pharma;`

2. How many unique countries are represented in the dataset?

Ans: `SELECT COUNT(DISTINCT Country) AS UniqueCountriesCount FROM pharma;`

3. Select the names of all the customers on the 'Retail' channel.

Ans:

`SELECT Customer_Name`

`FROM pharma`

`WHERE Channel = 'Retail';`

4. Find the total quantity sold for the 'Electronics' product class.

Ans:

`SELECT SUM(Quantity) AS TotalQuantitySold`

`FROM pharma`

`WHERE Product_Class = 'Electronics';`

5. List all the distinct months present in the dataset.

Ans: `SELECT DISTINCT Month`

`FROM pharma;`

6. Calculate the total sales for each year.

Ans:

`SELECT Year, SUM(Sales) AS TotalSales`

`FROM pharma`

`GROUP BY Year;`

7. Find the customer with the highest sales value.

Ans:

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```
SELECT Customer_Name, MAX(Sales) AS HighestSales  
FROM pharma  
GROUP BY Customer_Name  
ORDER BY HighestSales DESC  
LIMIT 1;
```

8. Get the names of all employees who are Sales Reps and are managed by 'John Smith'.

Ans:

```
SELECT DISTINCT srep.Name_of_Sales_Rep  
FROM pharma AS srep  
JOIN pharma AS manager ON srep.Manager = manager.Name_of_Sales_Rep  
WHERE manager.Manager = 'John Smith'  
AND srep.Sales_Team = 'Sales Rep';
```

9. Retrieve the top 5 cities with the highest sales.

Ans:

```
SELECT City, SUM(Sales) AS TotalSales  
FROM pharma  
GROUP BY City  
ORDER BY TotalSales DESC  
LIMIT 5;
```

10. Calculate the average price of products in each sub-channel.

Ans:

```
SELECT Sub_channel, AVG(Price) AS AveragePrice  
FROM pharma  
GROUP BY Sub_channel;
```

11. Join the 'Employees' table with the 'Sales' table to get the name of the Sales Rep and the corresponding sales records.

Ans:

```
SELECT e.Employee_Name, p.*
```

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FROM Employees AS e

JOIN pharma AS p ON e.Name_of_Sales_Rep = p.Name_of_Sales_Rep;

12. Retrieve all sales made by employees from 'New York' in the year 2022.

Ans:

SELECT *

FROM pharma

WHERE City = 'New York' AND Year = 2022;

13. Calculate the total sales for each product class, for each month, and order the results by year, month, and product class.

Ans:

SELECT Year, Month, Product_Class, SUM(Sales) AS TotalSales

FROM pharma

GROUP BY Year, Month, Product_Class

ORDER BY Year, Month, Product_Class;

14. Find the top 3 sales reps with the highest sales in 2023.

Ans:

SELECT Name_of_Sales_Rep, SUM(Sales) AS TotalSales

FROM pharma

WHERE Year = 2023

GROUP BY Name_of_Sales_Rep

ORDER BY TotalSales DESC

LIMIT 3;

15. Calculate the monthly total sales for each sub-channel, and then calculate the average monthly sales for each sub-channel over the years.

Ans:

SELECT Sub_channel, Month, SUM(Sales) AS MonthlyTotalSales

FROM pharma

GROUP BY Sub_channel, Month

ORDER BY Sub_channel, Month;

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```
WITH MonthlyAvgSales AS (  
    SELECT Sub_channel, Month, AVG(Sales) AS AvgMonthlySales  
    FROM pharma  
    GROUP BY Sub_channel, Month  
)  
SELECT Sub_channel, AVG(AvgMonthlySales) AS OverallAvgMonthlySales  
FROM MonthlyAvgSales  
GROUP BY Sub_channel  
ORDER BY Sub_channel;
```

16. Create a summary report that includes the total sales, average price, and total quantity sold for each product class.

Ans:

```
SELECT  
    Product_Class,  
    SUM(Sales) AS TotalSales,  
    AVG(Price) AS AveragePrice,  
    SUM(Quantity) AS TotalQuantitySold  
FROM  
    pharma  
GROUP BY  
    Product_Class  
ORDER BY  
    Product_Class;
```

17. Find the top 5 customers with the highest sales for each year.

Ans:

```
SELECT  
    Year,
```

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```
Customer_Name,  
SUM(Sales) AS TotalSales  
FROM  
    pharma AS p1  
WHERE  
    (  
        SELECT COUNT(DISTINCT Customer_Name)  
        FROM pharma AS p2  
        WHERE p1.Year = p2.Year AND p1.Sales <= p2.Sales  
    ) <= 5  
GROUP BY  
    Year, Customer_Name  
ORDER BY  
    Year, TotalSales DESC;
```

18. Calculate the year-over-year growth in sales for each country. 2 of 2

Ans:

```
SELECT  
    Country,  
    Year,  
    AVG(Sales) AS AverageSales,  
    LAG(AVG(Sales)) OVER (PARTITION BY Country ORDER BY Year) AS PreviousYearAverageSales,  
    ((AVG(Sales) - LAG(AVG(Sales)) OVER (PARTITION BY Country ORDER BY Year)) / LAG(AVG(Sales)) OVER  
    (PARTITION BY Country ORDER BY Year)) * 100 AS YoYGrowth  
FROM  
    pharma  
GROUP BY  
    Country, Year  
ORDER BY
```

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Country, Year;

19. List the months with the lowest sales for each year

Ans:

SELECT

Year,

Month,

MIN(TotalSales) AS LowestSales

FROM (

SELECT

Year,

Month,

SUM(Sales) AS TotalSales

FROM

pharma

GROUP BY

Year, Month

) AS MonthlySales

GROUP BY

Year

ORDER BY

Year, LowestSales;

20. Calculate the total sales for each sub-channel in each country, and then find the country with the highest total sales for each sub-channel.

Ans:

SELECT

t1.Country,

t1.Sub_channel,

t1.TotalSales

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```
FROM (
    SELECT
        Country,
        Sub_channel,
        SUM(Sales) AS TotalSales
    FROM
        pharma
    GROUP BY
        Country, Sub_channel
) AS t1
JOIN (
    SELECT
        Sub_channel,
        MAX(TotalSales) AS MaxSales
    FROM (
        SELECT
            Country,
            Sub_channel,
            SUM(Sales) AS TotalSales
        FROM
            pharma
        GROUP BY
            Country, Sub_channel
    ) AS t2
    GROUP BY
        Sub_channel
) AS t3
ON t1.Sub_channel = t3.Sub_channel AND t1.TotalSales = t3.MaxSales;
```