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"RFM Analysis"

Q1) Which country has the most transaction? [Excluding the canceled orders]

```
SELECT Distinct
Country, Count(invoiceno) Over (Partition by country rows between unbounded
preceding and unbounded following) AS Number_of_transactions
FROM online_retail
WHERE invoiceno NOT LIKE 'C%'
ORDER BY Number_of_transactions Desc
```

United Kingdom is the **most** country where the transactions happened, and **Saudi-Arabia** is **least** country

Q2) Which country has contributed more in the revenue? [Excluding the canceled orders]

```
SELECT Distinct
Country, Round (SUM(Quantity*unitprice) Over (Partition by country
rows between unbounded preceding and unbounded following)) AS
Profits
FROM online_retail
WHERE quantity > 0
ORDER BY Profits Desc
```

United Kingdom is the **most** country which contributed in the revenue, and **Saudi-Arabia** is **least** country

Q3) Who is the top 10 customers who made the most transactions?

```
SELECT * FROM
    (
        SELECT *, DENSE_RANK() OVER (ORDER BY Count_Transactions DESC) AS
        Rank_Of_Customers
        FROM
        (
            SELECT DISTINCT customerid, country, Count(invoiceno)
            Over ( Partition by customerid rows between unbounded preceding
            and unbounded following) AS Count_Transactions

            FROM online_retail

            WHERE invoiceno NOT LIKE 'C%'
        ) AS X
        WHERE customerid NOT LIKE ''
    ) AS Y
    WHERE Rank_Of_Customers <= 10
    ORDER BY Rank_Of_Customers
```

We can see that the **most** customer who made transactions whose have the customer id = "**17841**" from **United kingdom** and 8 out of the top 10 customers are from **United kingdom**

Q4) Who is the top 10 customers who has contributed more in the revenue?

```
SELECT * FROM
    (
        SELECT *, DENSE_RANK() OVER (ORDER BY Profits DESC) AS
Rank_Of_Customers FROM
        (
            SELECT Distinct customerid, country,
Round(SUM(Quantity*unitprice) Over (Partition by customerid
rows
between unbounded preceding and unbounded following)) AS Profits
            FROM online_retail
            WHERE invoiceno NOT LIKE 'C%'
        ) AS X
        WHERE customerid NOT LIKE "
    ) AS Y
WHERE Rank_Of_Customers <= 10
ORDER BY Rank_Of_Customers
```

We can see that the customer who has contributed the most in the revenue whose customer id = "**17841**" from "**Netherlands**" and 6 out of the top 10 customers are from **United kingdom**

Q5) What are the most sold products?

```
SELECT * FROM
(
    SELECT *, DENSE_RANK() OVER (ORDER BY Count_Sold_Products DESC) AS
Rank_Of_Products FROM
    (
        SELECT Distinct stockcode, Description AS Product_name,
COUNT(stockcode) OVER (
PARTITION BY Description
rows between unbounded
preceding and unbounded following) AS Count_Sold_Products
FROM online_retail
WHERE invoiceno NOT LIKE 'C%' AND stockcode NOT LIKE '' AND
Description NOT LIKE ''
AND (Description not like 'faulty' AND Description
not like 'damages')
) AS X
) AS Y
ORDER BY Rank_Of_Products
```

The most sold product is **"WHITE HANGING HEART T-LIGHT HOLDER"**

Q6) What are the highest 5 sold products for each country?

```
SELECT * FROM
(
    SELECT *, DENSE_RANK() OVER (Partition by country ORDER BY
Count_Sold_Products DESC) AS Rank_Of_Countries FROM
(
    SELECT Distinct country, stockcode, Description,
COUNT(stockcode) OVER ( PARTITION BY Stockcode
                                rows between unbounded
preceding and unbounded following) AS Count_Sold_Products
FROM online_retail
WHERE invoiceno NOT LIKE 'C%'
) AS X
) AS Y
WHERE Rank_Of_Countries <= 5
ORDER BY country DESC, Rank_Of_Countries
```

In United Kingdom: The Most sold product is "CREAM HANGING HEART T-LIGHT HOLDER"

Q7) Which product is considered more as the number one product through the countries?

```
SELECT *, count (description) over (Partition by description) Number_of_countries FROM
(
    SELECT *, DENSE_RANK() OVER (Partition by country ORDER BY
Count_Sold_Products DESC) AS Rank_Of_Product FROM
(
    SELECT Distinct country, stockcode, Description,
COUNT(stockcode) OVER ( PARTITION BY Stockcode
                                rows between unbounded preceding and
unbounded following) AS Count_Sold_Products
    FROM online_retail
    WHERE invoiceno NOT LIKE 'C%'
) AS X
) AS Y
WHERE Rank_Of_Product = 1
ORDER BY country , Rank_Of_Product
```

CREAM HANGING HEART T-LIGHT HOLDER is the most product to be called a number one sold product through countries specifically in 16 countries.

Q8) What are the top 10 products which has contributed more to the revenue?

```
SELECT * FROM
(
    SELECT *, DENSE_RANK() OVER (ORDER BY Profits_Sold_Products DESC) AS
Rank_Of_Products FROM
(
    SELECT Distinct stockcode, Description AS Product_name,
    Round(SUM(Quantity*unitprice) OVER ( PARTITION BY Description
rows between unbounded
preceding and unbounded following)) AS Profits_Sold_Products
FROM online_retail
WHERE invoiceno NOT LIKE 'C%' AND stockcode NOT IN
(',', 'm', 'M') AND Description NOT LIKE "
AND (Description not like 'faulty' AND Description
not like 'damages')
) AS X
) AS Y
WHERE Rank_Of_Products <= 10
ORDER BY Rank_Of_Products
```

"DOTCOM POSTAGE" is the most contributing product in the revenue and **CREAM HANGING HEART T-LIGHT HOLDER** in the rank 4. (Which was the most sold product).

Q9) Which Quarter has the most transactions and the most increase in the revenue in 2011?

```
SELECT Distinct
    Years, Quarters, Round(SUM(Quantity*unitprice)) AS Profits
    , Count(invoiceno) AS Total_Transactions
FROM
    (
        SELECT
            *, to_char(to_date(invoicedate,'mm/dd/yyyy'),'Q"Q') AS Quarters ,
            to_char(to_date(invoicedate,'mm/dd/yyyy'),'YYYY') AS Years
        FROM online_retail
    ) AS X
WHERE Years LIKE '2011' AND invoiceno NOT LIKE 'C%'
    AND Description not like 'faulty' AND Description not like 'damages'
Group by Quarters, Years
Order by Profits DESC
```

The answer is **Quarter 4**

Conclusion of the story:

United Kingdom:

- Has the most **transactions**.
- Contributed the most in the **revenue**.
- The customer who made the most **transactions** was from United Kingdom.
- 8 out of top 10 customers who made the most **transactions** were from United Kingdom.
- 6 out of Top 10 customers who contributed most to the **revenue** were from United Kingdom.
- The most sold product in United Kingdom is **"CREAM HANGING HEART T-LIGHT HOLDER"**

Products:

- The most sold product is **"WHITE HANGING HEART T-LIGHT HOLDER"**
- **"CREAM HANGING HEART T-LIGHT HOLDER"** is the most product to be called a **number one sold** product through countries **specifically in 16 countries**.
- **"DOTCOM POSTAGE"** is the most contributing product in the revenue and **"CREAM HANGING HEART T-LIGHT HOLDER"** in the rank 4. (Which was the most sold product).

Quarters in 2011

- **"Quarter 4 of 2011"** is the quarter where there are the most transactions and most increase in the revenue.

Points in details from the previous queries:

- **“United Kingdom”** is the **most** country where the transactions happened, and **“Saudi-Arabia”** is **least** country
- **“United Kingdom”** is the **most** country which contributed to the revenue, and **Saudi-Arabia** is **least** country
- The **most** customer who made transactions whose have the customer id = **"17841"** from **“United Kingdom”** and **8** out of the top 10 customers are from **“United Kingdom”**
- The customer who has contributed the most to the revenue whose customer id = **"17841"** from **"Netherlands"** and 6 out of the top 10 customers are from **“United Kingdom”**
- The most sold product is **"WHITE HANGING HEART T-LIGHT HOLDER"**
- In **“United Kingdom”**: The Most sold product is **"CREAM HANGING HEART T-LIGHT HOLDER"**
- **“CREAM HANGING HEART T-LIGHT HOLDER”** is the most product to be called a number one sold product through countries specifically in 16 countries.
- **"DOTCOM POSTAGE"** is the most contributing product in the revenue and **“CREAM HANGING HEART T-LIGHT HOLDER”** in the rank 4. (Which was the most sold product).
- **“Quarter 4 of 2011”** is the quarter where there are the most transactions and most increase in the revenue.