RFM Customer Segmentation Dashboard

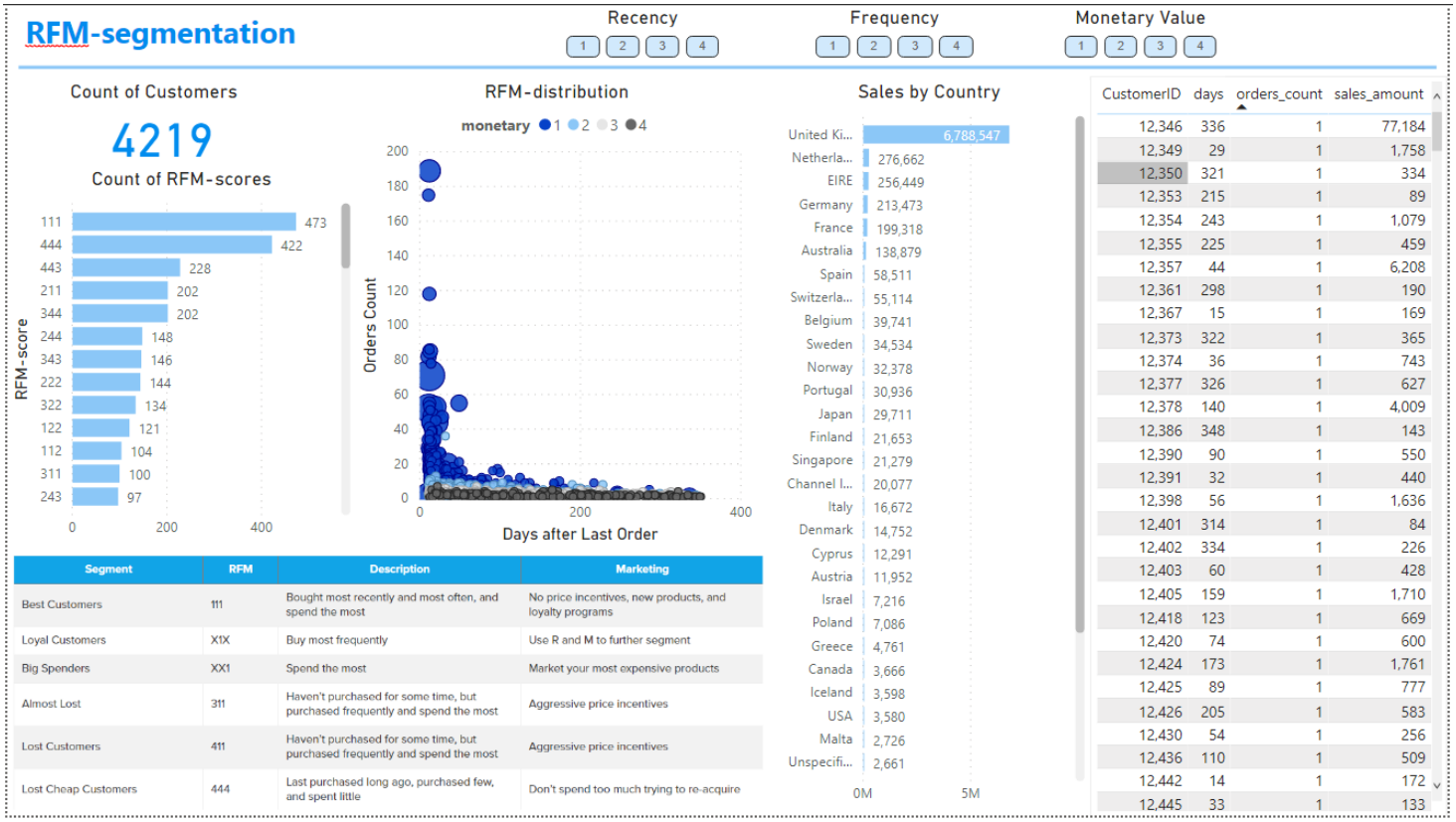
This is a Power BI dashboard that retrieves SQL Server tables. It segments customers based on Recency (time since last purchase), Frequency (total number of purchases), and Monetary value (total monetary value).

To perform RFM analysis, we divide customers into four equal groups according to the distribution of values for recency, frequency, and monetary value.

Four equal groups across three variables create 64 (4x4x4) different customer segments.

To learn how RFM analysis boosts sales please follow the link → https://www.blastanalytics.com/blog/rfm-analysis-boosts-sales

Below is the Power BI dashboard itself:



You can connect to the SQL server using the following script as a source.

```
--Let's count how many days have pASt from the lASt order, number of orders and sales amount
with counted AS(
     SELECT
        CustomerID, Year,
     DATEDIFF(day, MAX(CAST(InvoiceDate AS date)), CAST('2011-12-20' AS date)) AS days,
        COUNT(distinct InvoiceDate) AS orders_count,
        SUM(Quantity*UnitPrice) AS sales_amount
        FROM dbo.data
        GROUP BY CustomerID, Year),

--Let's find the quartile values for RFM
```

```
percentiles AS (
SELECT
--Recency
PERCENTILE_DISC (0.25) WITHIN GROUP ( ORDER BY days )
    OVER (PARTITION BY Year) AS recency_25,
PERCENTILE_DISC (0.50) WITHIN GROUP ( ORDER BY days )
    OVER (PARTITION BY Year) AS recency_50,
PERCENTILE_DISC (0.75) WITHIN GROUP ( ORDER BY days )
    OVER (PARTITION BY Year) AS recency_75,
--Frequency
PERCENTILE_DISC (0.25) WITHIN GROUP ( ORDER BY orders_count )
    OVER (PARTITION BY Year) AS frequency_25,
PERCENTILE_DISC (0.50) WITHIN GROUP ( ORDER BY orders_count )
    OVER (PARTITION BY Year) AS frequency_50,
PERCENTILE_DISC (0.75) WITHIN GROUP ( ORDER BY orders_count )
    OVER (PARTITION BY Year) AS frequency_75,
--Monetary Value
PERCENTILE_DISC (0.25) WITHIN GROUP ( ORDER BY sales_amount )
    OVER (PARTITION BY Year) AS monetary_25,
PERCENTILE_DISC (0.50) WITHIN GROUP ( ORDER BY sales_amount )
    OVER (PARTITION BY Year) AS monetary_50,
PERCENTILE_DISC (0.75) WITHIN GROUP ( ORDER BY sales_amount )
    OVER (PARTITION BY Year) AS monetary_75

FROM counted),

--Since all the rows have the same values, let's leave just one row
limited AS (
SELECT TOP(1) *
FROM percentiles),

--Let's cross join RFM quartile values with the customer information
crossjoined AS (
SELECT *
FROM counted
CROSS JOIN limited)

--Let's ASsign 1 to the most recent orders, the highest orders' count and the biggest sales amounts
SELECT CustomerID,
       CASE WHEN days <= recency_25 THEN 1
       WHEN days <= recency_50 THEN 2
       WHEN days <= recency_75 THEN 3
       ELSE 4 END AS recency,

       CASE WHEN orders_count <= frequency_25 THEN 4
       WHEN orders_count <= frequency_50 THEN 3
       WHEN orders_count <= frequency_75 THEN 2
       ELSE 1 END AS frequency,

       CASE WHEN sales_amount <= monetary_25 THEN 4
       WHEN sales_amount <= monetary_50 THEN 3
       WHEN sales_amount <= monetary_75 THEN 2
       ELSE 1 END AS monetary_value

FROM crossjoined
```