

```
1 USE PRACTICE;
2
3 SELECT * FROM product_spend;
4
5
6 --BUSINESS QUESTION
7 /** Question 1 ***/
8 --Is Revenue(Spend) increasing or decreasing over time?(per Category per month)
9 --1. Monthly Revenue Trend(FOUNDATION)
10
11
12 --MONTH OVER MONTH GROWTH
13 /**Month Over Month Growth**/
14 SELECT
15     DATEFROMPARTS(YEAR(transaction_date), MONTH(transaction_date), 1) AS date, -- full date for ordering
16     FORMAT(transaction_date, 'MMM') AS month, -- short month name (Jan, Feb...)
17     category,
18     SUM(spend) AS monthly_revenue
19 FROM product_spend
20 GROUP BY
21     DATEFROMPARTS(YEAR(transaction_date), MONTH(transaction_date), 1),
22     FORMAT(transaction_date, 'MMM'),
23     category
24 ORDER BY date;
25
26 /**Month Over Month Trends Per Category **/
27 WITH monthly_revenue AS (
28     SELECT
29         FORMAT(transaction_date, 'MMMM') AS month, YEAR(transaction_date) AS year, category, SUM(spend) AS revenue
30     FROM product_spend
31     GROUP BY YEAR(transaction_date), category, FORMAT(transaction_date, 'MMMM')
32 )
33 SELECT category, year, month, revenue, COALESCE(revenue - LAG(revenue) OVER (PARTITION BY category ORDER BY year), 0) AS M_O_M_Growth
34 FROM monthly_revenue;
35
36
37
38 ---YEAR OVER YEAR GROWTH (YoY)
39 --Qurestion 2: Is Revenue(Spend) increasing or decreasing over time?(per Category per month)
40
41 /** Year Over Year Growth **/
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42 ---Yearly Revenue Trend(FOUNDATION)
43 SELECT YEAR(transaction_date) AS year,
44 category,
45 SUM(spend) AS revenue, COALESCE(LAG(spend) OVER (PARTITION BY category
        ORDER BY YEAR(transaction_date)), 0) AS Previous_revenue
46 FROM product_spend
47 GROUP BY YEAR(transaction_date), category, spend
48 ;
49
50 --Y_O_Y_Growth(Per Category)
51 WITH yearly_revenue AS(
52     SELECT
53         YEAR(transaction_date) AS year,
54         category,
55         SUM(spend) AS revenue
56     FROM product_spend
57     GROUP BY YEAR(transaction_date), category
58 )
59 --SELECT * from yearly_revenue;
60     SELECT category , year, revenue, COALESCE (revenue - LAG(revenue) OVER
        (PARTITION BY category ORDER BY year), 0) AS Y_O_Y_Growth
61     FROM yearly_revenue
62 ;
63
64 --Y_O_Y_Growth(Per Product)
65 WITH yearly_revenue AS(
66     SELECT
67         YEAR(transaction_date) AS year,
68         product,
69         SUM(spend) AS revenue
70     FROM product_spend
71     GROUP BY YEAR(transaction_date), product
72 )
73 --SELECT * from yearly_revenue;
74     SELECT product , year, revenue, COALESCE (revenue - LAG(revenue) OVER
        (PARTITION BY product ORDER BY year), 0) AS Y_O_Y_Growth
75     FROM yearly_revenue
76 ;
77
78
79 --QUESTION 3: (Slow Moving Products)
80 --Identify Slow moving products
81 SELECT
82     product,
83     COUNT(*) AS total_sales,
84     SUM(spend) AS total_revenue
85 FROM product_spend
86 GROUP BY product
87 ORDER BY total_revenue ASC, total_sales ASC;
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88
89
90    --QUESTION 5(Cummulative Revenue)
91    --Generate the Cummulative revenue per Product
92
93    SELECT
94        transaction_date,
95        product,
96        spend,
97        SUM(spend) OVER (
98            PARTITION BY product
99            ORDER BY transaction_date
100        ) AS cummulative_revenue
101    FROM product_spend
102 ;
103
104
105 --Genreate the Cummulative Revenue per Category
106 SELECT
107        transaction_date,
108        category,
109        spend,
110        SUM(spend) OVER (
111            PARTITION BY category
112            ORDER BY transaction_date
113        ) AS cummulative_revenue
114 FROM product_spend;
```