

# Steel Data Sql Challenge-6

## Marketing analysis

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Solutions are Coded in - Microsoft Sql Server



# Introduction

You are a Marketing Analyst  
working for a 'Sustainable Clothing Co.'

'Sustainable Clothing Co.' have been running several marketing campaigns and have asked you to provide your insight into whether they have been successful or not.

<https://www.steeldata.org.uk/sql6.html>

# Tables

sustainable\_clothing

Product ID	Product Name	Category	Size	Price
1	Organic Cotton T-Shirt	Tops	S	\$29.99
2	Recycled Denim Jeans	Bottoms	M	\$79.99
3	Hemp Crop Top	Tops	L	\$24.99
4	Bamboo Lounge Pants	Bottoms	XS	\$49.99
5	Eco-Friendly Hoodie	Outerwear	XL	\$59.99
6	Linen Button-Down Shirt	Tops	M	\$39.99
7	Organic Cotton Dress	Dresses	S	\$69.99
8	Sustainable Swim Shorts	Swimwear	L	\$34.99
9	Recycled Polyester Jacket	Outerwear	XL	\$89.99
10	Bamboo Yoga Leggings	Activewear	XS	\$54.99
11	Hemp Overalls	Bottoms	M	\$74.99
12	Organic Cotton Sweater	Tops	L	\$49.99
13	Cork Sandals	Footwear	S	\$39.99
14	Recycled Nylon Backpack	Accessories	One Size	\$59.99
15	Organic Cotton Skirt	Bottoms	XS	\$34.99
16	Hemp Baseball Cap	Accessories	One Size	\$24.99
17	Upcycled Denim Jacket	Outerwear	M	\$79.99
18	Linen Jumpsuit	Dresses	L	\$69.99
19	Organic Cotton Socks	Accessories	M	\$9.99
20	Bamboo Bathrobe	Loungewear	XL	\$69.99

transactions (first 10 shown)

transaction_id	product_id	quantity	purchaser_date
1	2	2	2023-06-02
1	14	1	2023-06-02
2	5	2	2023-06-05
3	2	1	2023-06-07
4	19	2	2023-06-10
5	2	1	2023-06-13
5	16	1	2023-06-13
6	10	2	2023-06-15
7	2	1	2023-06-18
8	4	1	2023-06-22
9	18	2	2023-06-26
10	2	1	2023-06-30
10	13	1	2023-06-30

marketing\_campaigns

campaign_id	campaign_name	product_id	start_date	end_date
1	Summer Sale	2	2023-06-01	2023-06-30
2	New Collection Launch	10	2023-07-15	2023-08-15
3	Super Save	7	2023-08-20	2023-09-15

# 1. How many transactions were completed during each marketing campaign?

```
SELECT      M.campaign_name,  
            COUNT(T.transaction_id) AS transaction_completed  
FROM        transactions AS T  
INNER JOIN  marketing_campaigns M  
ON          T.Product_id = M.Product_id  
AND         T.purchase_date BETWEEN M.start_date AND M.end_date  
GROUP BY    M.campaign_name;
```

Results Messages

campaign_name	transaction_completed
New Collection Launch	4
Summer Sale	5
Super Save	1

## 2. Which product had the highest sales quantity?

```
WITH cte_top AS (  
SELECT TOP 1  
        product_id,  
        SUM(quantity) AS total  
FROM    transactions  
GROUP BY product_id  
ORDER BY 2 DESC)  
SELECT b.product_id,  
       b.product_name,  
       a.total AS highest_sales_quantity  
FROM    cte_top a  
LEFT JOIN sustainable_clothing b  
ON      a.product_id = b.product_id;
```

Results Messages

product_id	product_name	highest_sales_quantity
12	Organic Cotton Sweater	9

### 3. What is the total revenue generated from each marketing campaign?

```
SELECT      A.campaign_name,  
            SUM(B.price * C.quantity) AS total_revenue_generated  
FROM        marketing_campaigns A  
INNER JOIN  sustainable_clothing B  
    ON        A.product_id = B.product_id  
INNER JOIN  transactions C  
    ON        C.product_id = B.product_id  
GROUP BY    A.campaign_name;
```

Results Messages

campaign_name	total_revenue_generated
New Collection Launch	439.92
Summer Sale	639.92
Super Save	209.97

### 4. What is the top-selling product category based on the total revenue generated?

```
SELECT      TOP 1 B.category AS Top_selling_Product_category,  
            SUM(B.price * C.quantity) AS total_revenue_generated  
FROM        sustainable_clothing B  
INNER JOIN  transactions C  
    ON        C.product_id = B.product_id  
GROUP BY    B.category  
ORDER BY    2 DESC;
```

Results Messages

Top_selling_Product_category	total_revenue_generated
Bottoms	1289.79

## 5. Which products had a higher quantity sold compared to the average quantity sold?

```
SELECT DISTINCT product_id,  
    quantity  
FROM transactions  
WHERE quantity > (SELECT AVG(quantity) FROM transactions);
```

	product_id	quantity
1	2	2
2	4	2
3	5	2
4	6	2
5	8	2
6	9	2
7	10	2
8	11	2
9	12	2
10	15	2
11	16	2
12	17	2
13	18	2
14	19	2

## 6. What is the average revenue generated per day during the marketing campaigns?

```
WITH cte_a AS (  
SELECT  
    T.Product_id,  
    M.campaign_name,  
    COUNT(T.transaction_id) AS frequency  
FROM transactions AS T  
INNER JOIN marketing_campaigns M  
ON T.Product_id = M.Product_id  
AND T.purchase_date BETWEEN M.start_date AND M.end_date  
GROUP BY T.Product_id,  
    M.campaign_name),  
cte_b AS (  
SELECT  
    C.product_id,  
    SUM(A.quantity * B.price) AS total_revenue_generated  
FROM transactions A  
INNER JOIN sustainable_clothing B  
ON A.product_id = B.product_id  
INNER JOIN marketing_campaigns C  
ON C.product_id = A.product_id  
AND A.purchase_date BETWEEN C.start_date AND C.end_date  
GROUP BY C.product_id)  
SELECT A.campaign_name,  
    (total_revenue_generated / frequency) AS Average_revenue_generated_per_campaign  
FROM cte_a A  
INNER JOIN cte_b B  
ON A.product_id = B.product_id;
```

	campaign_name	Average_revenue_generated_per_campaign
1	Summer Sale	95.988
2	Super Save	69.99
3	New Collection Launch	54.99

## 7. What is the percentage contribution of each product to the total revenue?

```
SELECT sc.product_id,
       sc.product_name,
       SUM(t.quantity * sc.price) AS revenue,
       (SUM(t.quantity * sc.price) / total_revenue.total) * 100 AS percentage_contribution
  FROM sustainable_clothing sc
  JOIN transactions t
    ON sc.product_id = t.product_id
CROSS JOIN (SELECT SUM(quantity * price) AS total
             FROM sustainable_clothing sc
             JOIN transactions t
               ON sc.product_id = t.product_id
            ) AS total_revenue
 GROUP BY sc.product_id,
          sc.product_name,
          total_revenue.total
 ORDER BY revenue DESC;
```

product_id	product_name	revenue	percentage_contribution
2	Recycled Denim Jeans	639.92	13.7053663217052
18	Linen Jumpsuit	489.93	10.4929836885752
12	Organic Cotton Sweater	449.91	9.63586286066755
10	Bamboo Yoga Leggings	439.92	9.42190391337127
9	Recycled Polyester Jacket	359.96	7.70937564251937
5	Eco-Friendly Hoodie	299.95	6.42412274689878
4	Bamboo Lounge Pants	249.95	5.3532571448153
17	Upcycled Denim Jacket	239.97	5.13951237063944
11	Hemp Overalls	224.97	4.8182526900144
7	Organic Cotton Dress	209.97	4.49699300938935
15	Organic Cotton Skirt	174.95	3.74695874169009
13	Cork Sandals	159.96	3.42591323418546
20	Bamboo Bathrobe	139.98	2.9979953395929
16	Hemp Baseball Cap	124.95	2.67609313960661
14	Recycled Nylon Backpack	119.98	2.56964909875951
6	Linen Button-Down Shirt	119.97	2.5694349256391
8	Sustainable Swim Shorts	69.98	1.49878349667604
19	Organic Cotton Socks	69.93	1.49771263107395
1	Organic Cotton T-Shirt	59.98	1.28461037625934
3	Hemp Crop Top	24.99	0.535218627921322

## 8. Compare the average quantity sold during marketing campaigns to outside the marketing campaigns

```
WITH campaign_sales AS (
    SELECT
        t.product_id,
        CASE
            WHEN t.product_id IN (SELECT product_id FROM marketing_campaigns) THEN 'During Campaigns'
            ELSE 'Outside Campaigns'
        END AS campaign,
        t.quantity
    FROM transactions t)
SELECT campaign,
    AVG(quantity) AS average_quantity_sold
FROM campaign_sales
GROUP BY campaign
ORDER BY campaign;
```

% ▾

Results Messages

campaign	average_quantity_sold
During Campaigns	1
Outside Campaigns	1

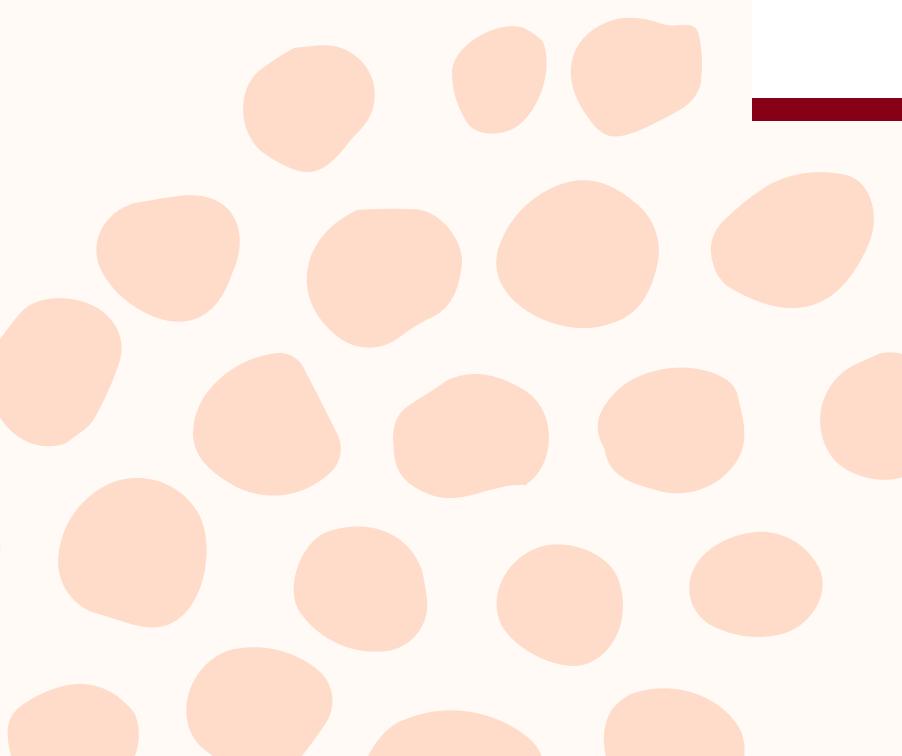
## 9. Compare the revenue generated by products inside the marketing campaigns to outside the campaigns

```
WITH campaign_revenue AS (
  SELECT
    t.product_id,
    CASE
      WHEN t.product_id IN (SELECT product_id FROM marketing_campaigns) THEN 'During Campaigns'
      ELSE 'Outside Campaigns'
    END AS campaign,
    t.quantity * sc.price AS revenue
  FROM transactions t
  JOIN sustainable_clothing sc
    ON t.product_id = sc.product_id)
  SELECT campaign,
    SUM(revenue) AS total_revenue
  FROM campaign_revenue
  GROUP BY campaign
  ORDER BY campaign;
```

campaign	total_revenue
During Campaigns	1289.81
Outside Campaigns	3379.31

## 10. Rank the products by their average daily quantity sold

```
WITH daily_quantity AS (
  SELECT
    product_id,
    SUM(quantity) AS total_quantity,
    COUNT(DISTINCT purchase_date) AS total_days,
    SUM(quantity) / COUNT(DISTINCT purchase_date) AS average_daily_quantity
  FROM transactions
  GROUP BY product_id)
SELECT
  product_id,
  average_daily_quantity,
  RANK() OVER (ORDER BY average_daily_quantity DESC) AS product_rank
FROM daily_quantity
ORDER BY product_rank;
```



## SOME VALUABLE INSIGHTS

- 1) "Organic Cotton Sweater" product had sold maximum times.
- 2) "Summer Sale" campaign was most sucessful among others which is amount of 639.92 dollars .This suggests that customers are responsive to seasonal discounts and promotions, indicating the potential for increased sales during specific periods. "Super save" campaign sales was only 209.97 dollars, Marketing team should be work on this campaign like giving more discount to who buy products in large quantity.
- 3) Top selling Product category in sustainable clothing is "Bottoms" which has highest revenue generated of 1289.79 dollars.
- 4) Recycled Polyester Jacket , Bamboo Yoga Leggings , Organic Cotton Sweater , Linen Jumpsuit , Recycled Denim Jeans these are the some top revenue sales generated products.
- 5) The Highest average revenue generated per day was "Summer Sale" campaign .
- 6) "Recycled Denim Jeans" product had highest percentage contribution of 13.70% to the total revenue & "Hemp Crop Top" product had lowest percentage contribution of 0.53% only.
- 7) As per database , More revenue generated on outside campaings as compared to during campaigns. the reason could be only 3 products ( Product\_id 2,7 & 10 ) was kept in that campaigns.



Thank  
you

