



REVOU FULL-STACK DATA ANALYTICS COURSE

ADVANCED ASSIGNMENT  
**THE LOOK  
E COMMERCE**

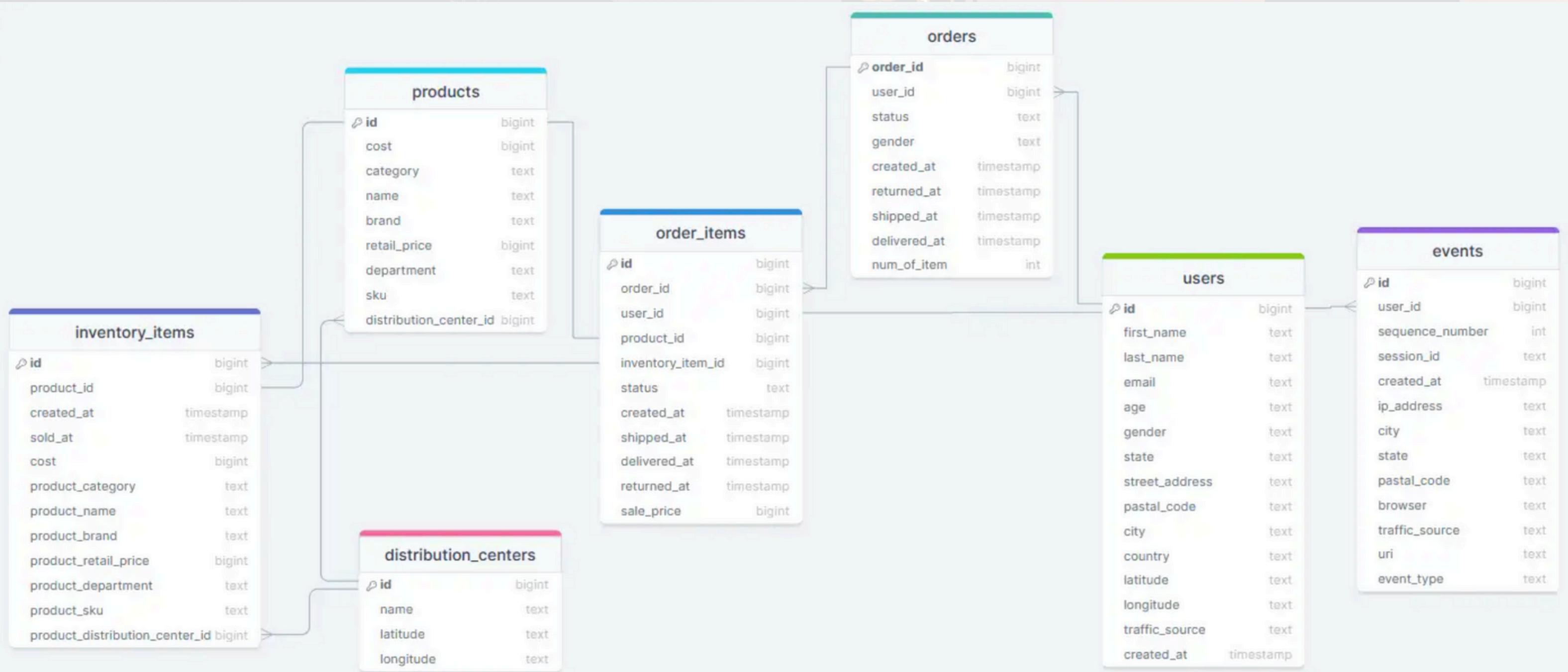
USING SQL (STRUCTURED QUERY LANGUAGE)

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# BUSINESS BACKGROUND



# ENTITY RELATIONSHIP DIAGRAM



# OBJECTIVES

- 01 To provide insights based on data how the condition of the company is to face potential crisis in 2023
  
- 02 Give actions recommendation to face potential crisis in 2023



# BUSINESS QUESTION 1

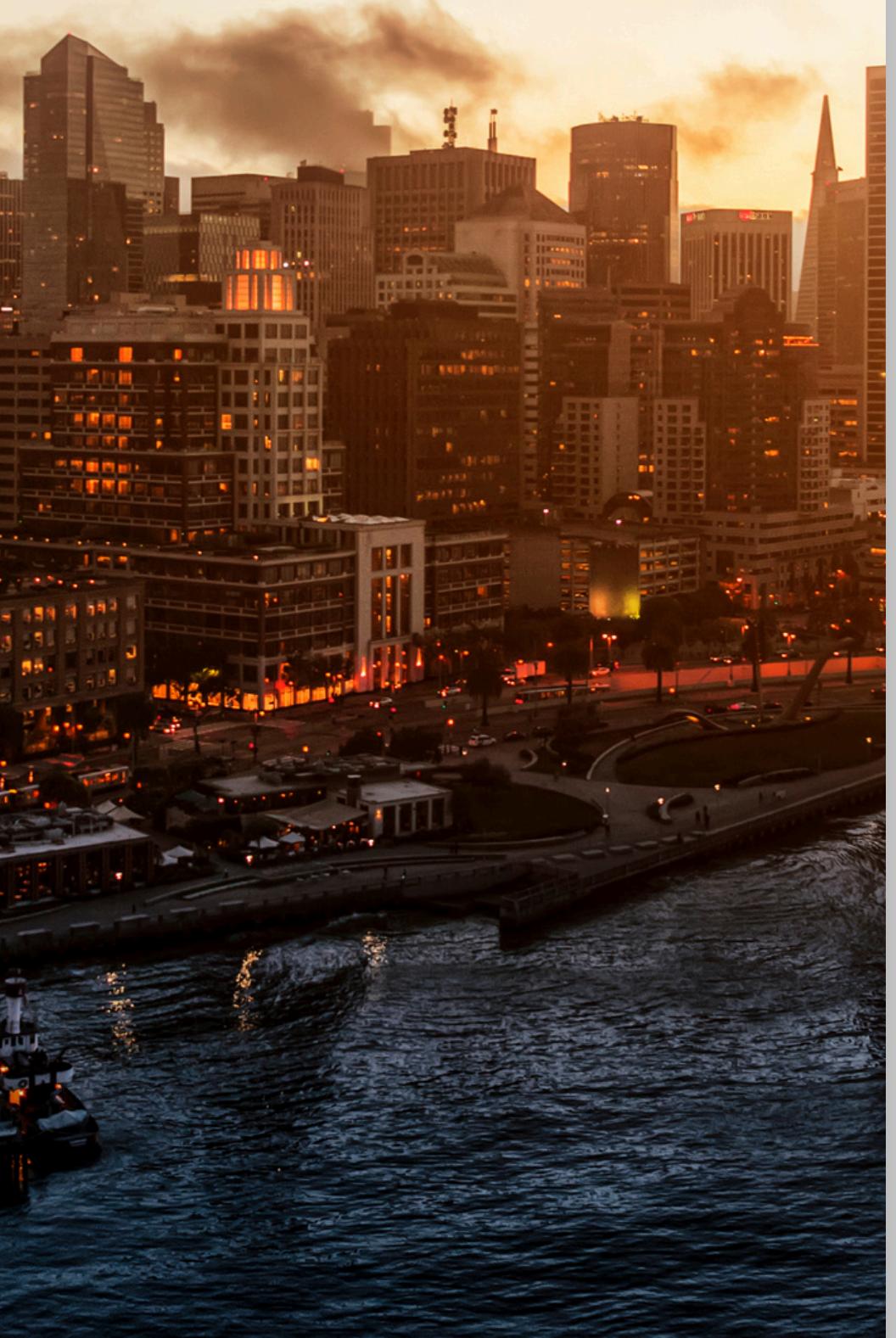
What is the most as the least profit margin category for the past year (Year to Date)?

```
SELECT products.category,
       SUM(order_items.sale_price) AS total_revenue,
       SUM(products.cost) AS total_cost,
       (SUM(order_items.sale_price) - SUM(products.cost))/SUM(order_items.sale_price) * 100 AS profit_margin
  FROM `fsda-sql-01.TheLook_Ecommerce.products` AS products
LEFT JOIN `fsda-sql-01.TheLook_Ecommerce.order_items` AS order_items
    ON products.id = order_items.product_id
 WHERE order_items.status = 'Complete'
   AND order_items.created_at BETWEEN '2022-04-01'
   AND '2023-04-21'
 GROUP BY 1
 ORDER BY 4 DESC
LIMIT 5
```

| Row | category ▾          | total_revenue ▾   | total_cost ▾      | profit_margin ▾   |
|-----|---------------------|-------------------|-------------------|-------------------|
| 1   | Blazers & Jackets   | 44602.84010696... | 17001.29023990... | 61.88294243340... |
| 2   | Skirts              | 17517.23001527... | 6980.874007522... | 60.14852804105... |
| 3   | Suits & Sport Coats | 104312.2598934... | 41838.64096363... | 59.89096487183... |
| 4   | Accessories         | 62387.95996332... | 25043.41350047... | 59.85857925920... |
| 5   | Socks & Hosiery     | 8897.199980735... | 3579.643430280... | 59.76662952354... |

# BUSINESS QUESTION 1

What is the most as the least profit margin category for the past year (Year to Date)?



```
SELECT products.category,
       SUM(order_items.sale_price) AS total_revenue,
       SUM(products.cost) AS total_cost,
       (SUM(order_items.sale_price) - SUM(products.cost))/SUM(order_items.sale_price) * 100 AS profit_margin
  FROM `fsda-sql-01.TheLook_Ecommerce.products` AS products
LEFT JOIN `fsda-sql-01.TheLook_Ecommerce.order_items` AS order_items
    ON products.id = order_items.product_id
 WHERE order_items.status = 'Complete'
   AND order_items.created_at BETWEEN '2022-04-01'
   AND '2023-04-21'
 GROUP BY 1
 ORDER BY 4 ASC
 LIMIT 5
```

| Row | category ▾    | total_revenue ▾   | total_cost ▾      | profit_margin ▾   |
|-----|---------------|-------------------|-------------------|-------------------|
| 1   | Clothing Sets | 2322.060005187... | 1419.998936805... | 38.84744866055... |
| 2   | Socks         | 17989.87001585... | 10847.85716583... | 39.70019151735... |
| 3   | Suits         | 18106.96993827... | 10916.55825830... | 39.71073959076... |
| 4   | Leggings      | 12953.58000278... | 7791.961083362... | 39.84704551415... |
| 5   | Tops & Tees   | 76629.00023269... | 42943.35299644... | 43.95939805290... |

# BUSINESS QUESTION 2

What is the sales trend of the highest and the lowest profit margin category in the past year (Year To Date)?

```
SELECT
    products.category,
    DATE_TRUNC(created_at, MONTH) AS month,
    SUM(order_items.sale_price) AS total_revenue
FROM `fsda-sql-01.TheLook_Ecommerce.products` AS products
LEFT JOIN `fsda-sql-01.TheLook_Ecommerce.order_items` AS order_items
    ON order_items.product_id = products.id
WHERE order_items.status = 'Complete'
    AND order_items.created_at BETWEEN '2022-04-01'
        AND '2023-04-21'
    AND products.category IN ('Blazers & Jackets', 'Clothing Sets')
GROUP BY 1, 2
ORDER BY 1, 2
```

| Row | category ▾        | month ▾                 | total_revenue ▾   |
|-----|-------------------|-------------------------|-------------------|
| 1   | Blazers & Jackets | 2022-04-01 00:00:00 UTC | 3310.159998893... |
| 2   | Blazers & Jackets | 2022-05-01 00:00:00 UTC | 1257.980015754... |
| 3   | Blazers & Jackets | 2022-06-01 00:00:00 UTC | 2697.970029830... |
| 4   | Blazers & Jackets | 2022-07-01 00:00:00 UTC | 1506.669998168... |
| 5   | Blazers & Jackets | 2022-08-01 00:00:00 UTC | 2552.390000343... |
| 6   | Blazers & Jackets | 2022-09-01 00:00:00 UTC | 2072.940002441... |
| 7   | Blazers & Jackets | 2022-10-01 00:00:00 UTC | 2950.360009193... |
| 8   | Blazers & Jackets | 2022-11-01 00:00:00 UTC | 3013.359992980... |
| 9   | Blazers & Jackets | 2022-12-01 00:00:00 UTC | 4058.940021514... |
| 10  | Blazers & Jackets | 2023-01-01 00:00:00 UTC | 5418.4500207901   |
| 11  | Blazers & Jackets | 2023-02-01 00:00:00 UTC | 4475.440019607... |
| 12  | Blazers & Jackets | 2023-03-01 00:00:00 UTC | 6114.019996643... |
| 13  | Blazers & Jackets | 2023-04-01 00:00:00 UTC | 5174.160000801... |
| 14  | Clothing Sets     | 2022-04-01 00:00:00 UTC | 120.0             |
| 15  | Clothing Sets     | 2022-07-01 00:00:00 UTC | 332.9299964904... |
| 16  | Clothing Sets     | 2022-08-01 00:00:00 UTC | 222.9699974060... |
| 17  | Clothing Sets     | 2022-09-01 00:00:00 UTC | 147.1300048828... |
| 18  | Clothing Sets     | 2022-10-01 00:00:00 UTC | 59.0              |
| 19  | Clothing Sets     | 2022-11-01 00:00:00 UTC | 95.84999847412... |
| 20  | Clothing Sets     | 2022-12-01 00:00:00 UTC | 125.9800033569... |
| 21  | Clothing Sets     | 2023-01-01 00:00:00 UTC | 546.9300003051... |
| 22  | Clothing Sets     | 2023-02-01 00:00:00 UTC | 158.8400001525... |
| 23  | Clothing Sets     | 2023-03-01 00:00:00 UTC | 381.4400024414... |
| 24  | Clothing Sets     | 2023-04-01 00:00:00 UTC | 130.9900016784... |

# BUSINESS QUESTION 3

What is the top 3 categories that have the highest and the lowest inventory turnover for the past year?

```
SELECT inventory_items.product_category,
       SUM(order_items.sale_price)/SUM(inventory_items.cost) AS inventory_turnover_rate
  FROM `fsda-sql-01.TheLook_Ecommerce.order_items` AS order_items
LEFT JOIN `fsda-sql-01.TheLook_Ecommerce.inventory_items` AS inventory_items
    ON inventory_items.id = order_items.inventory_item_id
   WHERE order_items.status = 'Shipped'
         AND order_items.created_at BETWEEN '2022-04-01'
                                         AND '2023-04-21'
  GROUP BY 1
 ORDER BY 2 DESC
  LIMIT 3
```

| Row | product_category  | inventory_turnover_rate |
|-----|-------------------|-------------------------|
| 1   | Blazers & Jackets | 2.624687426776...       |
| 2   | Skirts            | 2.515343610869...       |
| 3   | Accessories       | 2.494737440165...       |

| Row | product_category | inventory_turnover_rate |
|-----|------------------|-------------------------|
| 1   | Clothing Sets    | 1.625052381696...       |
| 2   | Socks            | 1.651041962888...       |
| 3   | Suits            | 1.651875877641...       |

# BUSINESS QUESTION 4

What is the highest returned rate category in the past year?

```
WITH
total_orders AS (
  SELECT products.category,
  COUNT(DISTINCT order_items.id) AS total_order
  FROM `fsda-sql-01.TheLook_Ecommerce.order_items` AS order_items
  JOIN `fsda-sql-01.TheLook_Ecommerce.products` AS products ON
  products.id = order_items.product_id
  WHERE order_items.created_at BETWEEN '2022-04-01'
  AND '2023-04-21'
  GROUP BY 1
),
returned_orders AS(
  SELECT inventory_items.product_category AS category,
  COUNT(order_items.id) AS returned_order
  FROM `fsda-sql-01.TheLook_Ecommerce.order_items` AS order_items
  JOIN `fsda-sql-01.TheLook_Ecommerce.inventory_items` AS inventory_items
  ON inventory_items.id = order_items.inventory_item_id
  WHERE order_items.created_at BETWEEN '2022-04-01'
  AND '2023-04-21'
  AND order_items.status = 'Returned'
  GROUP BY 1
)
SELECT total_orders.category,
total_orders.total_order,
returned_orders.returned_order,
(returned_orders.returned_order/total_orders.total_order)*100 AS returned_rate
FROM total_orders
JOIN returned_orders ON total_orders.category = returned_orders.category
ORDER BY 4 DESC
LIMIT 5
```

| Row | category            | total_order | returned_order | returned_rate     |
|-----|---------------------|-------------|----------------|-------------------|
| 1   | Accessories         | 5903        | 621            | 10.52007453837... |
| 2   | Socks & Hosiery     | 2194        | 229            | 10.43755697356... |
| 3   | Suits & Sport Coats | 3077        | 321            | 10.43223919402... |
| 4   | Jumpsuits & Rompers | 537         | 56             | 10.42830540037... |
| 5   | Tops & Tees         | 7090        | 734            | 10.35260930888... |

# BUSINESS QUESTION 5

```
SELECT users.traffic_source,
       SUM(COUNT(DISTINCT users.id)) OVER() AS total_users,
       COUNT(DISTINCT orders.user_id) AS converted_users,
       (COUNT(DISTINCT orders.user_id)/SUM(COUNT(DISTINCT users.id)) OVER())*100 AS conversion_rate
  FROM `fsda-sql-01.TheLook_Ecommerce.users` AS users
 INNER JOIN `fsda-sql-01.TheLook_Ecommerce.orders` AS orders
    ON orders.user_id = users.id
 WHERE orders.created_at BETWEEN '2022-04-01'
   AND '2023-04-21'
 GROUP BY 1
 ORDER BY 4 DESC
```

| Row | traffic_source | total_users | converted_users | conversion_rate   |
|-----|----------------|-------------|-----------------|-------------------|
| 1   | Search         | 53583       | 37303           | 69.61722934512... |
| 2   | Organic        | 53583       | 8178            | 15.26230334247... |
| 3   | Facebook       | 53583       | 3267            | 6.097083030065... |
| 4   | Email          | 53583       | 2628            | 4.904540619226... |
| 5   | Display        | 53583       | 2207            | 4.118843663102... |



# CONCLUSIONS