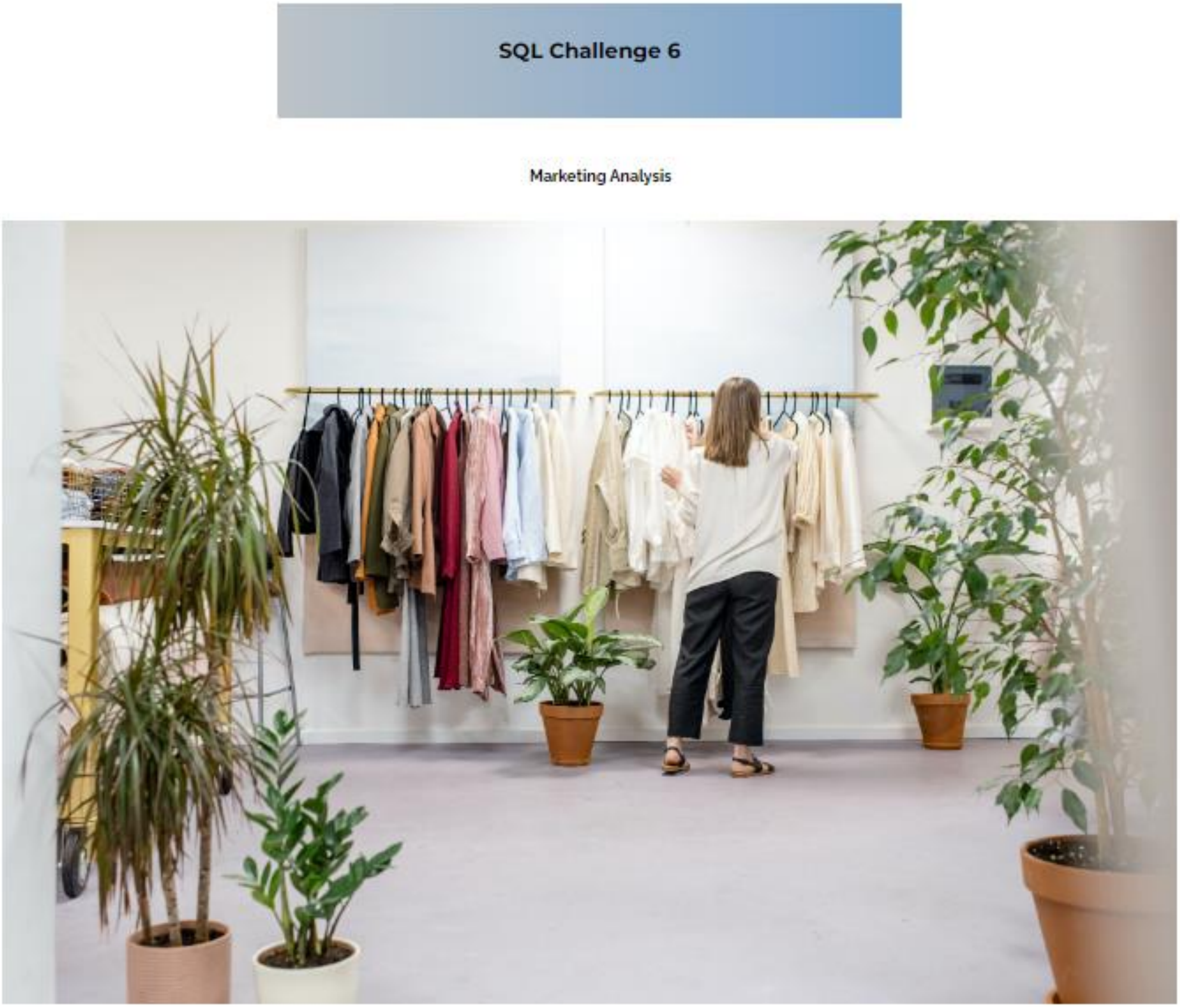


SQL Challenge 6

Marketing Analysis

https://steeldata.org.uk/sql6.html

Introduction

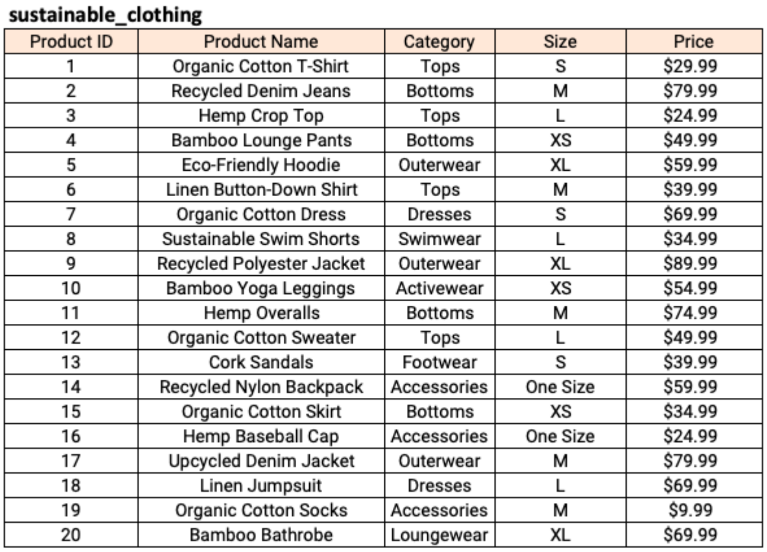
You are a Marketing Analyst
The 'Sustainable Clothing Co.' have been running several marketing campaigns and have asked you to provide your insight into whether they have been successful or not. Analyse the following data and answer the questions to form your answer.

Problem Statement

Key datasets for this case study:

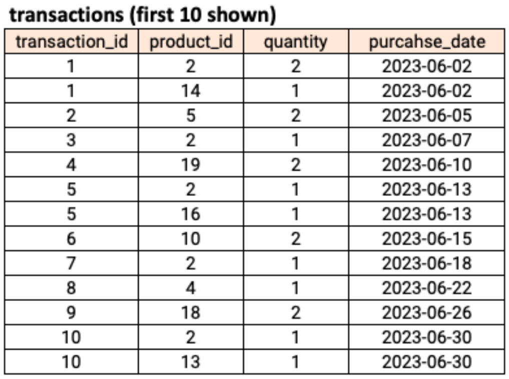
- Sustainable_clothing
- Transactions
- Marketing_campaigns

Tables Used



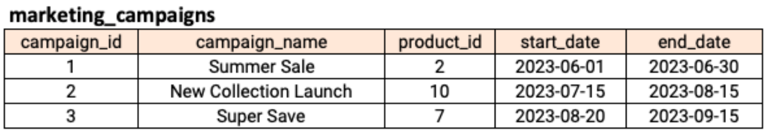
sustainable_clothing

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	purcahse_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

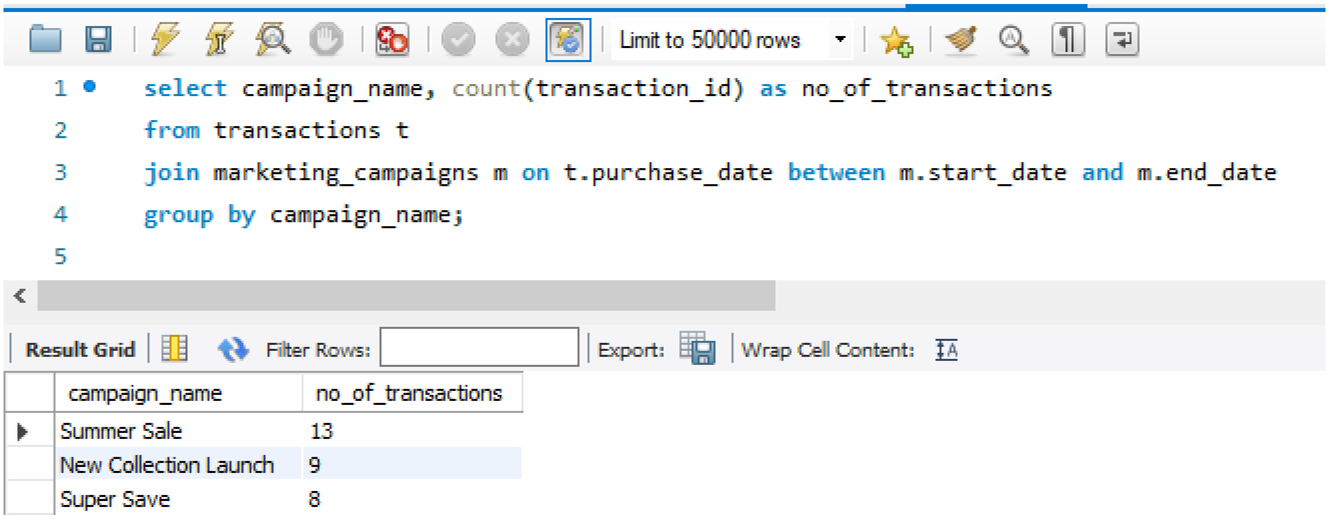


marketing_campaigns

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

Case Study Questions

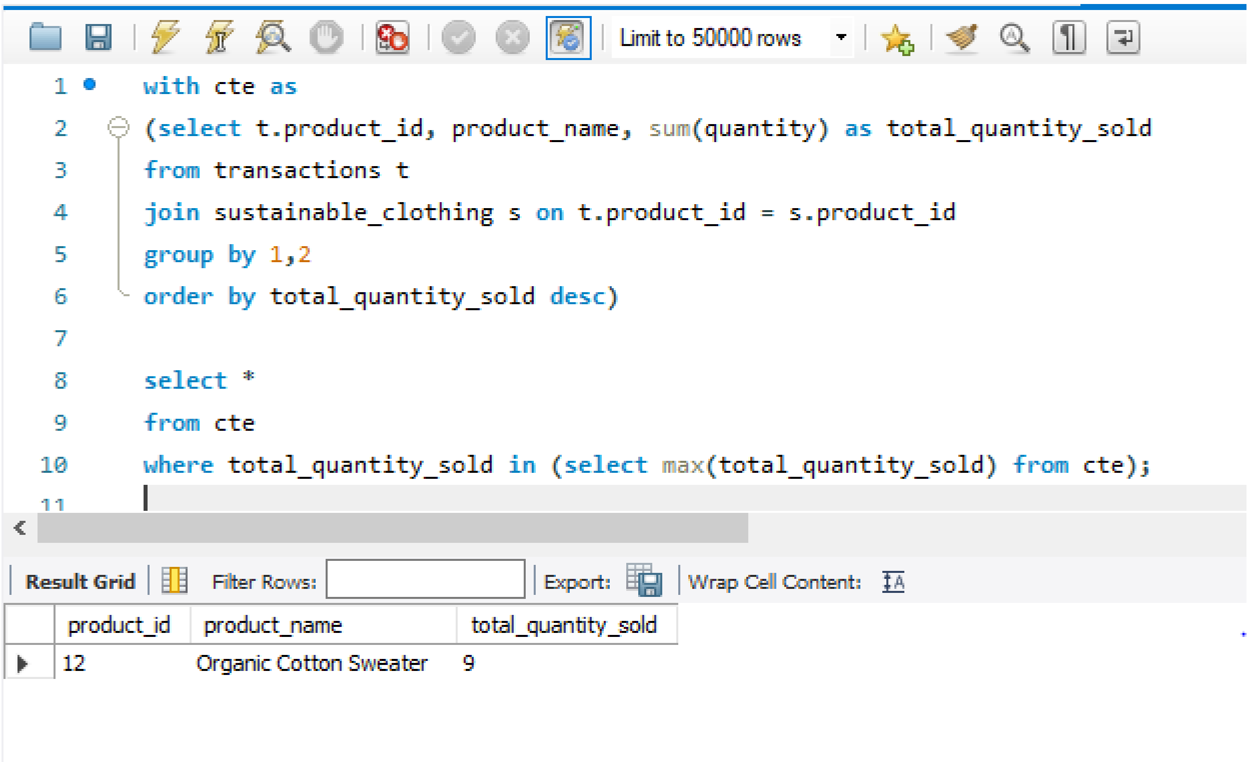
1. How many transactions were completed during each marketing campaign?



```sql
select campaign_name, count(transaction_id) as no_of_transactions
from transactions t
join marketing_campaigns m on t.purchase_date between m.start_date and m.end_date
group by campaign_name;
```

campaign_name	no_of_transactions
Summer Sale	13
New Collection Launch	9
Super Save	8

2. Which product had the highest sales quantity?

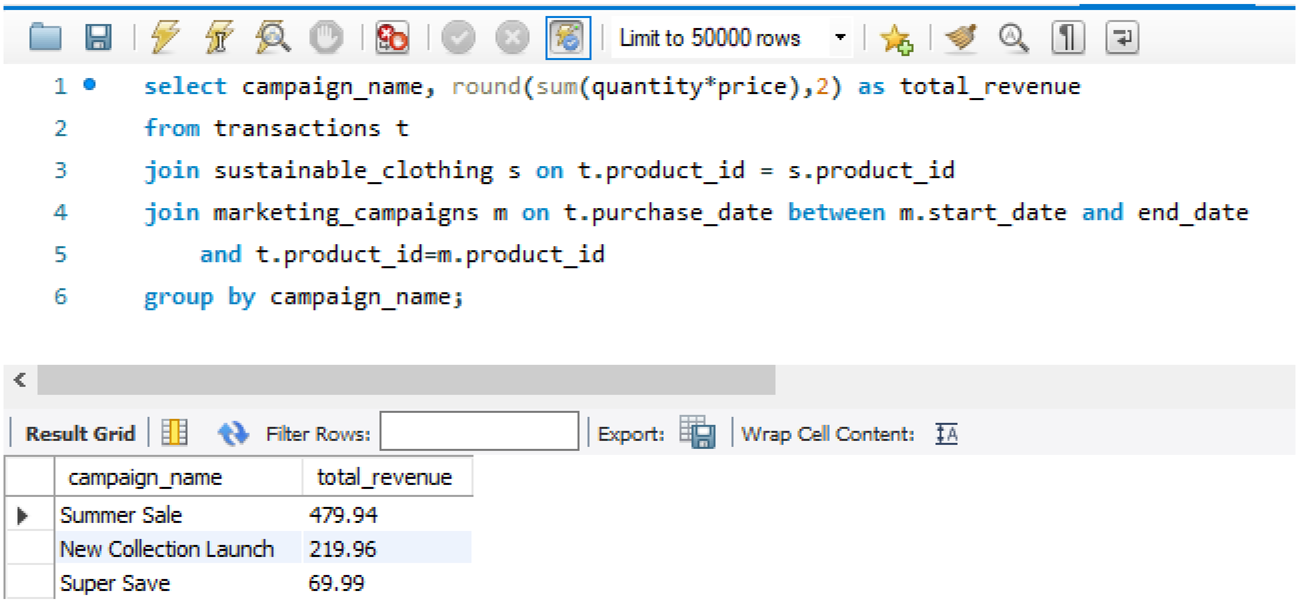


```sql
with cte as
(select t.product_id, product_name, sum(quantity) as total_quantity_sold
from transactions t
join sustainable_clothing s on t.product_id = s.product_id
group by 1,2
order by total_quantity_sold desc)

select *
from cte
where total_quantity_sold in (select max(total_quantity_sold) from cte);
```

product_id	product_name	total_quantity_sold
12	Organic Cotton Sweater	9

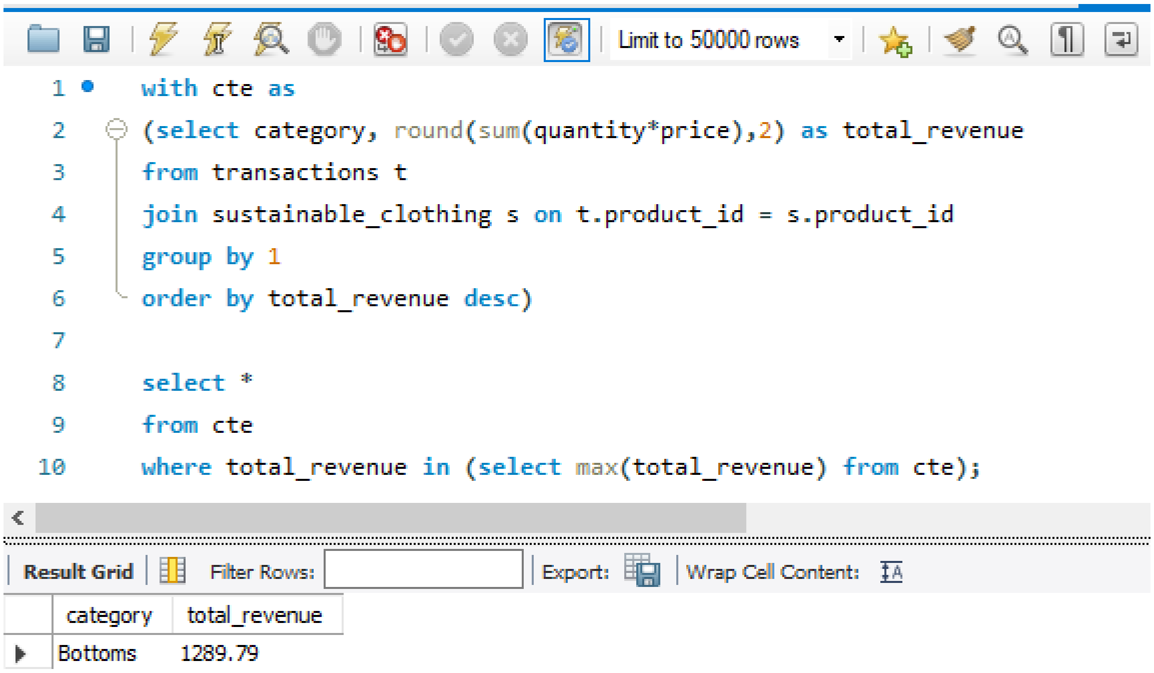
3. What is the total revenue generated from each marketing campaign?



```sql
select campaign_name, round(sum(quantity*price),2) as total_revenue
from transactions t
join sustainable_clothing s on t.product_id = s.product_id
join marketing_campaigns m on t.purchase_date between m.start_date and end_date
    and t.product_id=m.product_id
group by campaign_name;
```

campaign_name	total_revenue
Summer Sale	479.94
New Collection Launch	219.96
Super Save	69.99

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

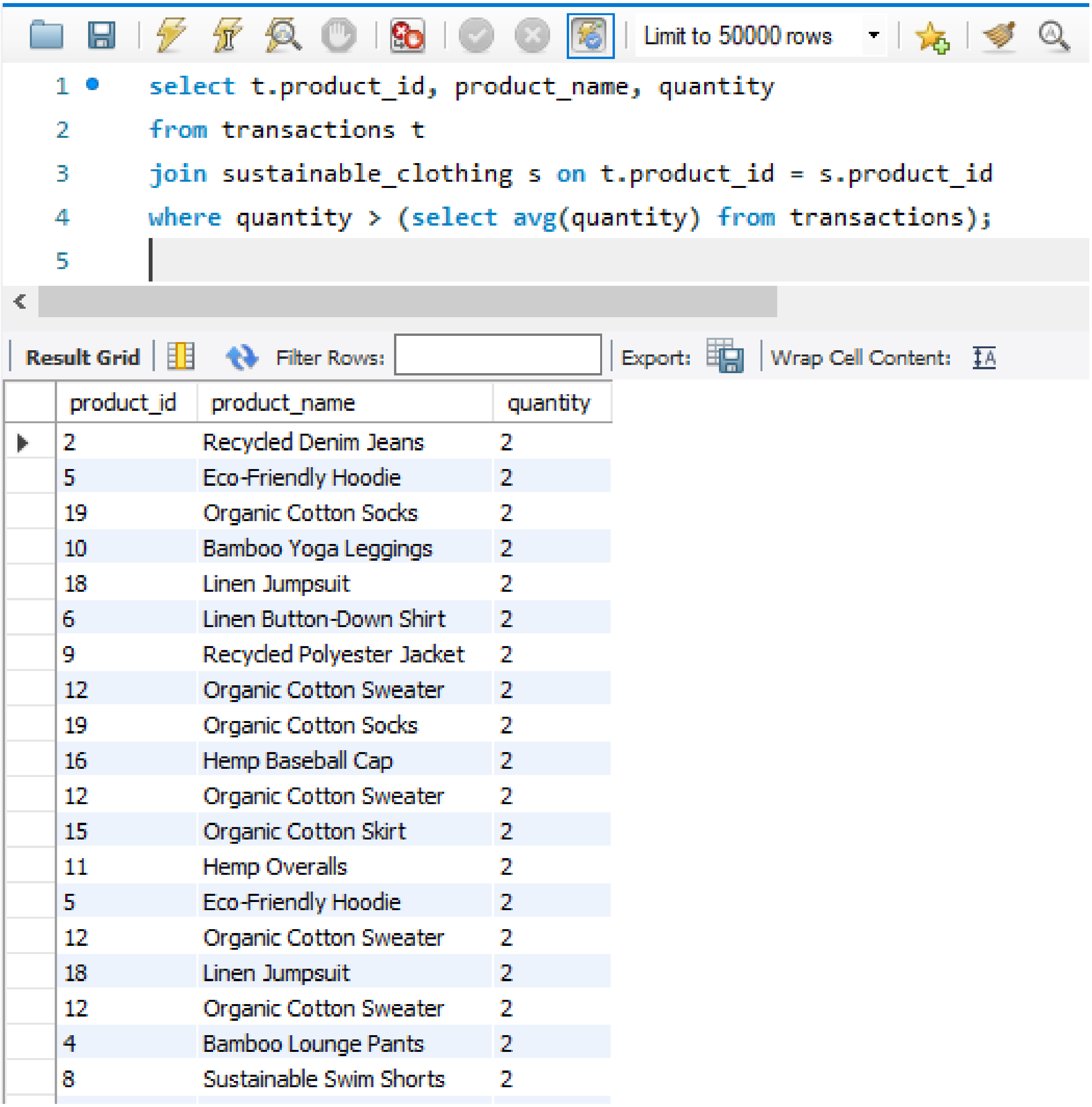


```sql
with cte as
(select category, round(sum(quantity*price),2) as total_revenue
from transactions t
join sustainable_clothing s on t.product_id = s.product_id
group by 1
order by total_revenue desc)

select *
from cte
where total_revenue in (select max(total_revenue) from cte);
```

category	total_revenue
Bottoms	1289.79

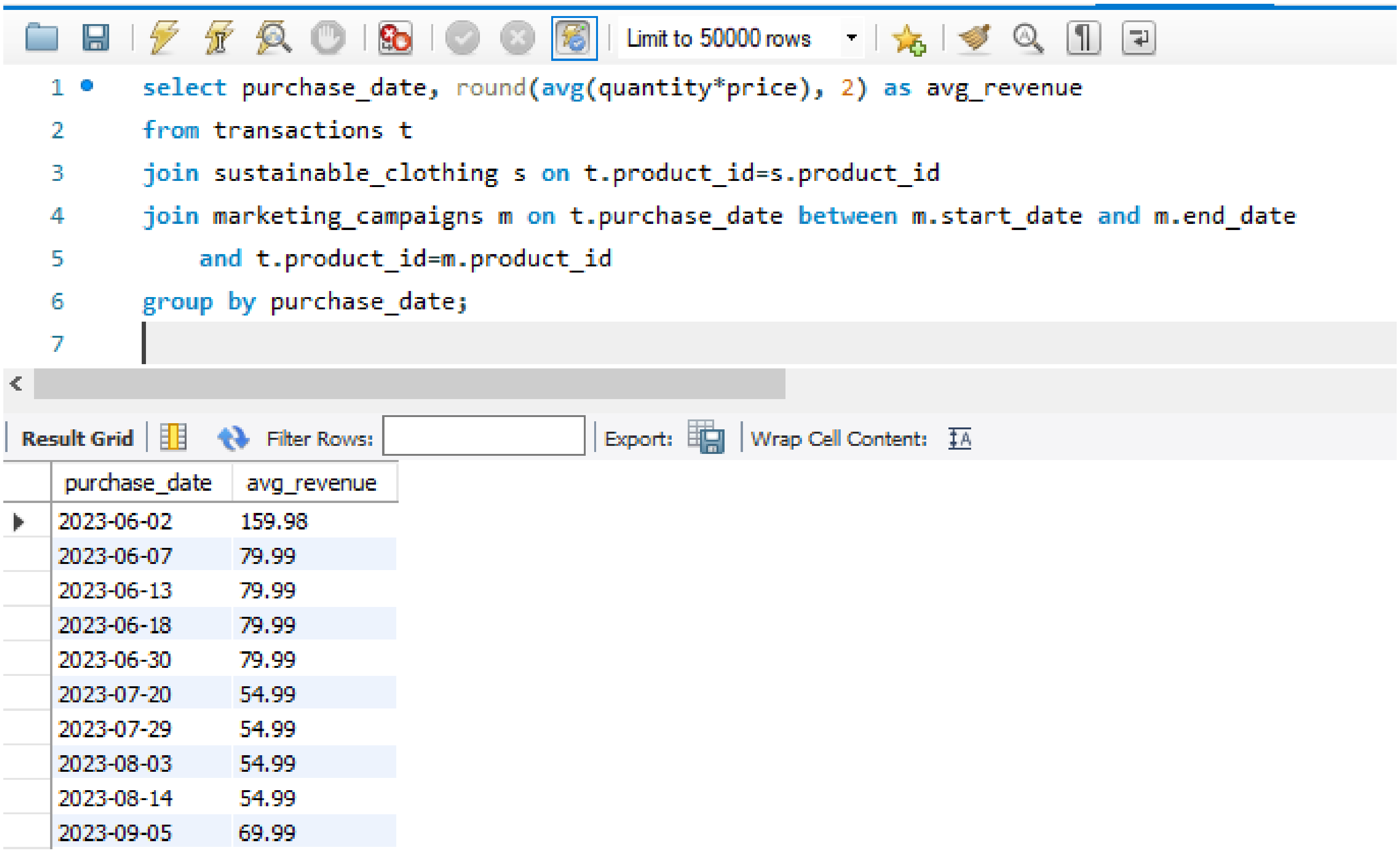
5. Which products had a higher quantity sold compared to the average quantity sold?



```sql
select t.product_id, product_name, quantity
from transactions t
join sustainable_clothing s on t.product_id = s.product_id
where quantity > (select avg(quantity) from transactions);
```

product_id	product_name	quantity
2	Recycled Denim Jeans	2
5	Eco-Friendly Hoodie	2
19	Organic Cotton Socks	2
10	Bamboo Yoga Leggings	2
18	Linen Jumpsuit	2
6	Linen Button-Down Shirt	2
9	Recycled Polyester Jacket	2
12	Organic Cotton Sweater	2
19	Organic Cotton Socks	2
16	Hemp Baseball Cap	2
12	Organic Cotton Sweater	2
15	Organic Cotton Skirt	2
11	Hemp Overalls	2
5	Eco-Friendly Hoodie	2
12	Organic Cotton Sweater	2
18	Linen Jumpsuit	2
12	Organic Cotton Sweater	2
4	Bamboo Lounge Pants	2
8	Sustainable Swim Shorts	2

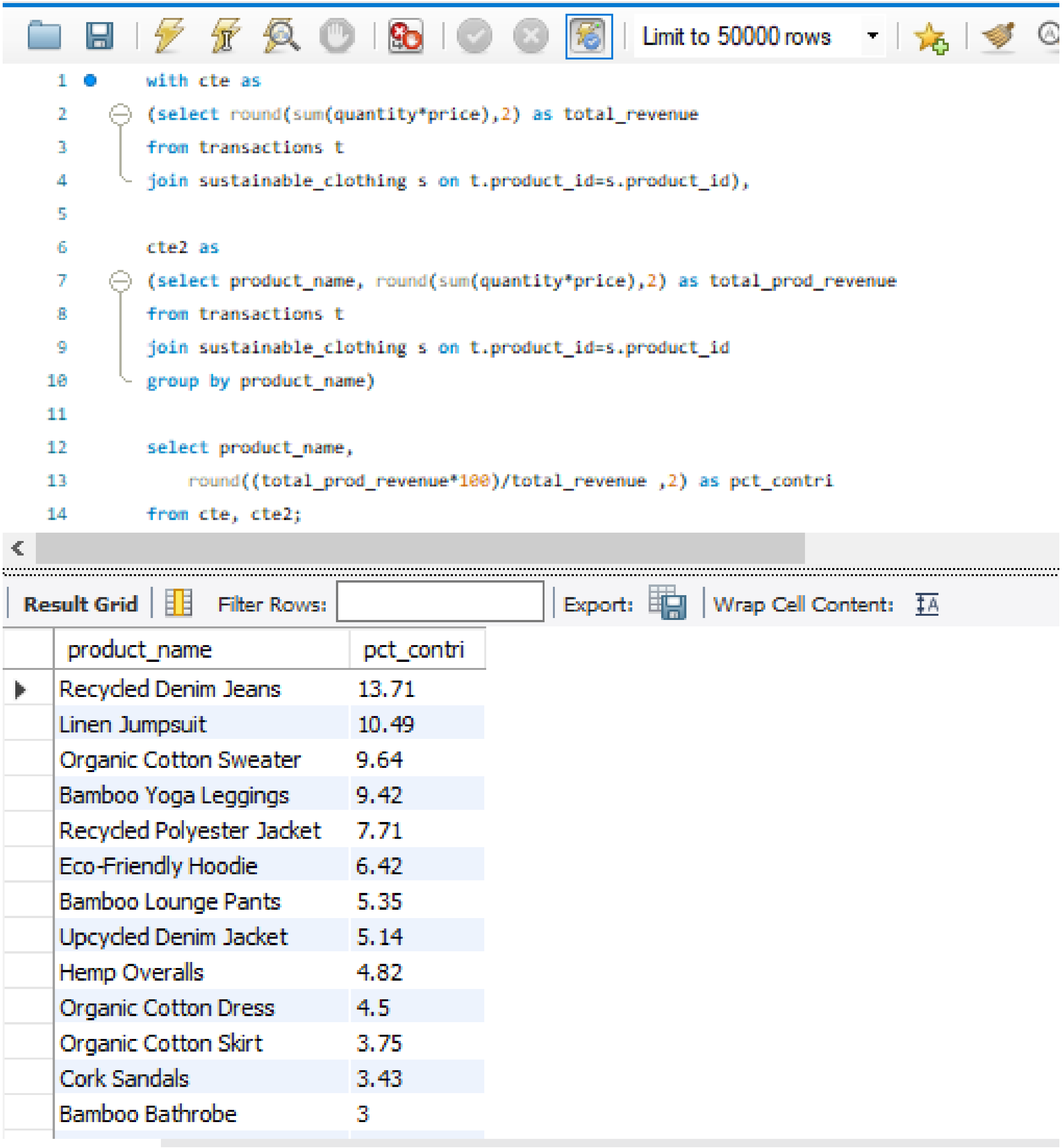
6. What is the average revenue generated per day during the marketing campaigns?



```sql
select purchase_date, round(avg(quantity*price), 2) as avg_revenue
from transactions t
join sustainable_clothing s on t.product_id=s.product_id
join marketing_campaigns m on t.purchase_date between m.start_date and m.end_date
    and t.product_id=m.product_id
group by purchase_date;
```

purchase_date	avg_revenue
2023-06-02	159.98
2023-06-07	79.99
2023-06-13	79.99
2023-06-18	79.99
2023-06-30	79.99
2023-07-20	54.99
2023-07-29	54.99
2023-08-03	54.99
2023-08-14	54.99
2023-09-05	69.99

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



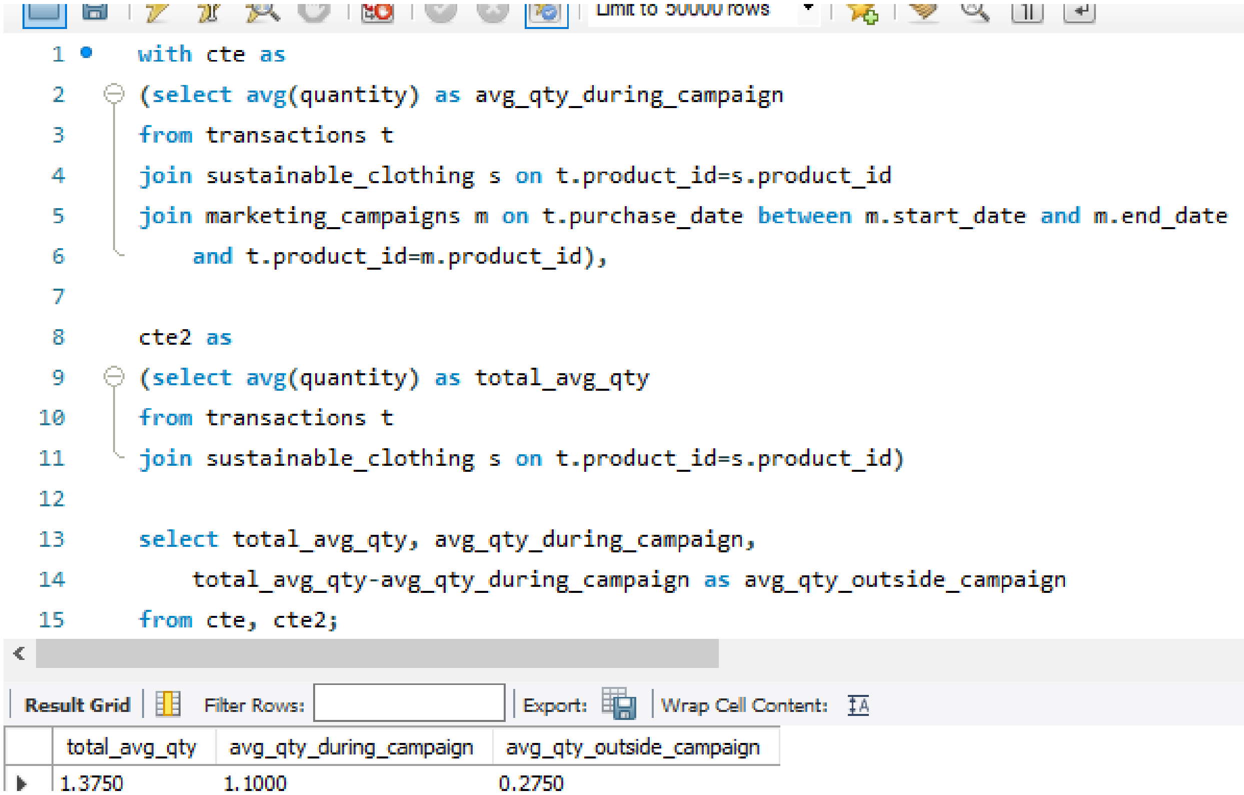
```
with cte as
(select round(sum(quantity*price),2) as total_revenue
from transactions t
join sustainable_clothing s on t.product_id=s.product_id),

cte2 as
(select product_name, round(sum(quantity*price),2) as total_prod_revenue
from transactions t
join sustainable_clothing s on t.product_id=s.product_id
group by product_name)

select product_name,
    round((total_prod_revenue*100)/total_revenue ,2) as pct_contri
from cte, cte2;
```

product_name	pct_contri
Recycled Denim Jeans	13.71
Linen Jumpsuit	10.49
Organic Cotton Sweater	9.64
Bamboo Yoga Leggings	9.42
Recycled Polyester Jacket	7.71
Eco-Friendly Hoodie	6.42
Bamboo Lounge Pants	5.35
Upcycled Denim Jacket	5.14
Hemp Overalls	4.82
Organic Cotton Dress	4.5
Organic Cotton Skirt	3.75
Cork Sandals	3.43
Bamboo Bathrobe	3

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



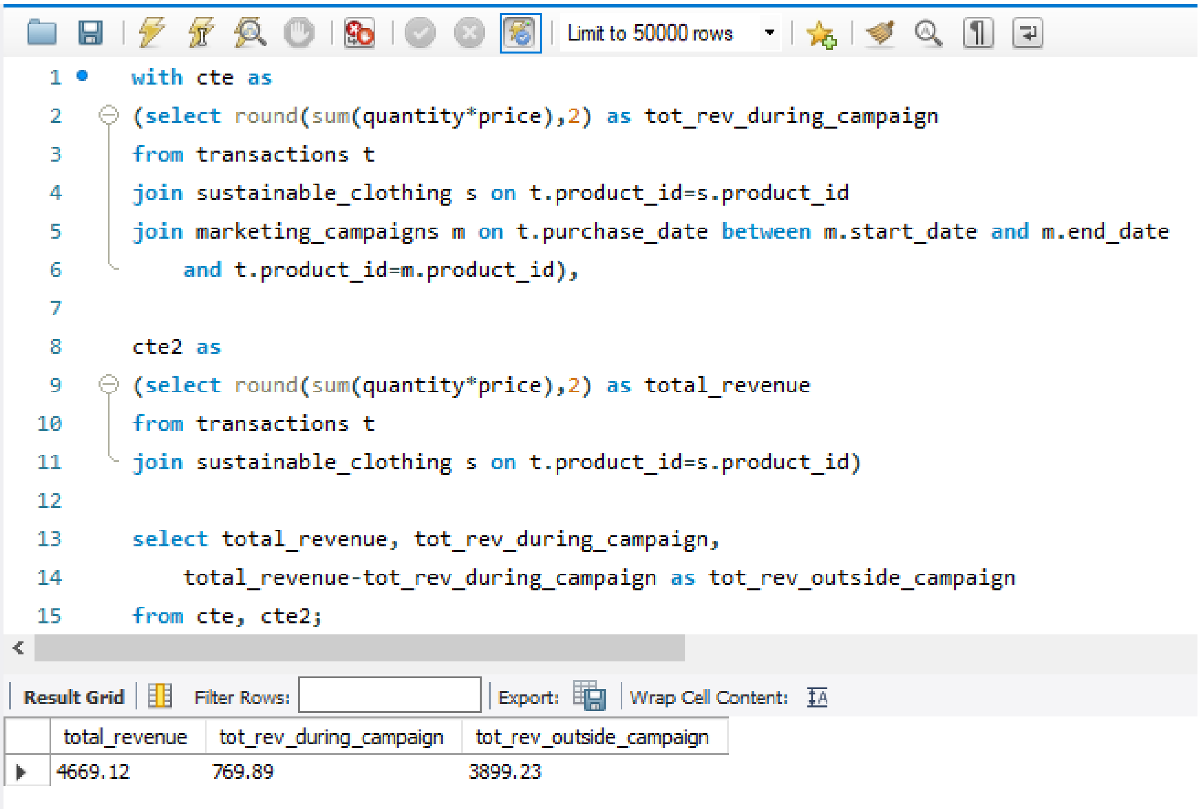
```sql
with cte as
(select avg(quantity) as avg_qty_during_campaign
from transactions t
join sustainable_clothing s on t.product_id=s.product_id
join marketing_campaigns m on t.purchase_date between m.start_date and m.end_date
    and t.product_id=m.product_id),

cte2 as
(select avg(quantity) as total_avg_qty
from transactions t
join sustainable_clothing s on t.product_id=s.product_id)

select total_avg_qty, avg_qty_during_campaign,
    total_avg_qty-avg_qty_during_campaign as avg_qty_outside_campaign
from cte, cte2;
```

total_avg_qty	avg_qty_during_campaign	avg_qty_outside_campaign
1.3750	1.1000	0.2750

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



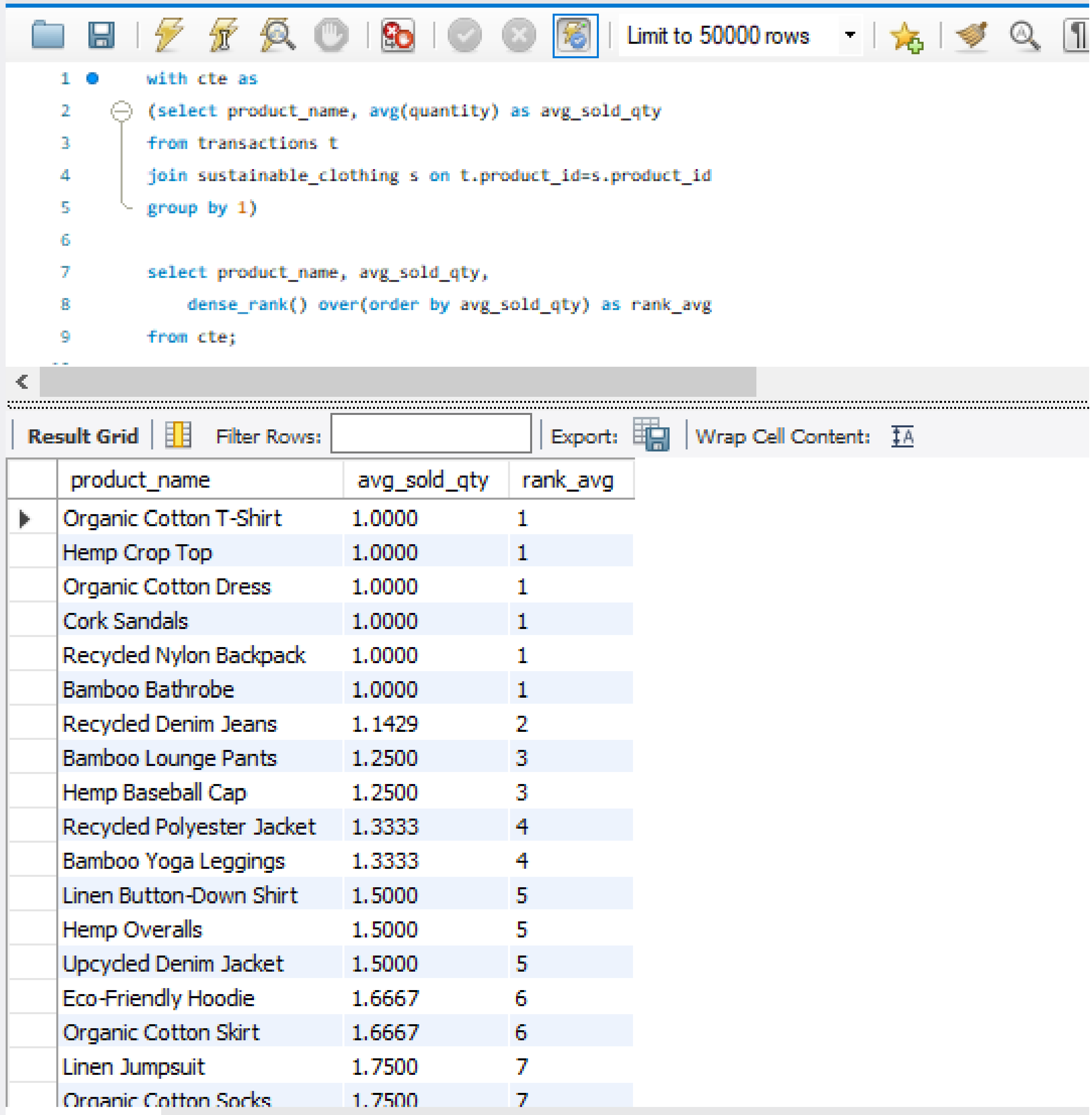
```sql
with cte as
(select round(sum(quantity*price),2) as tot_rev_during_campaign
from transactions t
join sustainable_clothing s on t.product_id=s.product_id
join marketing_campaigns m on t.purchase_date between m.start_date and m.end_date
    and t.product_id=m.product_id),

cte2 as
(select round(sum(quantity*price),2) as total_revenue
from transactions t
join sustainable_clothing s on t.product_id=s.product_id)

select total_revenue, tot_rev_during_campaign,
    total_revenue-tot_rev_during_campaign as tot_rev_outside_campaign
from cte, cte2;
```

total_revenue	tot_rev_during_campaign	tot_rev_outside_campaign
4669.12	769.89	3899.23

10. Rank the products by their average daily quantity sold



```
with cte as
(select product_name, avg(quantity) as avg_sold_qty
from transactions t
join sustainable_clothing s on t.product_id=s.product_id
group by 1)

select product_name, avg_sold_qty,
    dense_rank() over(order by avg_sold_qty) as rank_avg
from cte;
```

product_name	avg_sold_qty	rank_avg
Organic Cotton T-Shirt	1.0000	1
Hemp Crop Top	1.0000	1
Organic Cotton Dress	1.0000	1
Cork Sandals	1.0000	1
Recycled Nylon Backpack	1.0000	1
Bamboo Bathrobe	1.0000	1
Recycled Denim Jeans	1.1429	2
Bamboo Lounge Pants	1.2500	3
Hemp Baseball Cap	1.2500	3
Recycled Polyester Jacket	1.3333	4
Bamboo Yoga Leggings	1.3333	4
Linen Button-Down Shirt	1.5000	5
Hemp Overalls	1.5000	5
Upcycled Denim Jacket	1.5000	5
Eco-Friendly Hoodie	1.6667	6
Organic Cotton Skirt	1.6667	6
Linen Jumpsuit	1.7500	7
Organic Cotton Socks	1.7500	7

Insights

The following topics are completely covered in this case study:

- Joins in SQL
- Where clause
- Aggregate functions
- Group by clause
- Order by clause
- Limit in SQL
- Window Functions
- CTEs

The following insights can be gathered for this case study:

- The Summer Sale has the maximum number of transactions with the total revenue of 480, i.e., it has the maximum success rate as compared to the other campaigns.
- Organic cotton sweater is the Hot Selling Product, while Recycled Denim jeans has the maximum percentage of share in the total revenue i.e., 13%.
- The maximum average revenue that has been generated in a day of campaign is 159.9
- The average number of quantities sold is more during campaigns but the total revenue generated is more outside the campaign as compared to the total revenue during campaign.