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Coffee

Coffee Sales Data Analysis Using SQL

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Project Objectives

Before we start the actual analysis, we first need to define the questions we want to answer.

This is the core of our analysis, The main objectives of our project are:

1-Identify key performance metrics: such as average revenue per order and total annual revenue.

2-Understand customer behaviour: by pinpointing peak hours and best-selling products.

3-Pinpoint the most profitable products and times: to aid in making marketing decisions.

4-Compare the performance of different stores: to identify the strongest and weakest branches.

These objectives guided us in choosing every query in the following slides.



Overview Data

coffee1	123 order_id	⌚ order_date	A-Z time	123 quantity	123 store_id	A-Z location	123 product_id	123 price	A-Z category	A-Z type	A-Z details
	1	2023-01-01	07:06:11	2	5	Lower Manhattan	32	3	Coffee	Gourmet brewed coffee	Ethiopia Rg
	2	2023-01-01	07:08:56	2	5	Lower Manhattan	57	3.1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg
	3	2023-01-01	07:14:04	2	5	Lower Manhattan	59	4.5	Drinking Chocolate	Hot chocolate	Dark chocolate Lg
	4	2023-01-01	07:20:24	1	5	Lower Manhattan	22	2	Coffee	Drip coffee	Our Old Time Diner Blend Sm
	5	2023-01-01	07:22:41	2	5	Lower Manhattan	57	3.1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg
	6	2023-01-01	07:22:41	1	5	Lower Manhattan	77	3	Bakery	Scone	Oatmeal Scone
	7	2023-01-01	07:25:49	1	5	Lower Manhattan	22	2	Coffee	Drip coffee	Our Old Time Diner Blend Sm
	8	2023-01-01	07:33:34	2	5	Lower Manhattan	28	2	Coffee	Gourmet brewed coffee	Columbian Medium Roast Sm
	9	2023-01-01	07:39:13	1	5	Lower Manhattan	39	4.25	Coffee	Barista Espresso	Latte Rg
	10	2023-01-01	07:39:34	2	5	Lower Manhattan	58	3.5	Drinking Chocolate	Hot chocolate	Dark chocolate Rg
	11	2023-01-01	07:43:05	1	5	Lower Manhattan	56	2.55	Tea	Brewed Chai tea	Spicy Eye Opener Chai Rg
	12	2023-01-01	07:44:35	2	5	Lower Manhattan	33	3.5	Coffee	Gourmet brewed coffee	Ethiopia Lg
	13	2023-01-01	07:45:51	1	5	Lower Manhattan	51	3	Tea	Brewed Black tea	Earl Grey Lg
	14	2023-01-01	07:48:19	1	5	Lower Manhattan	57	3.1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg
	15	2023-01-01	07:52:36	2	5	Lower Manhattan	87	3	Coffee	Barista Espresso	Ouro Brasileiro shot
	16	2023-01-01	07:59:58	2	5	Lower Manhattan	47	3	Tea	Brewed Green tea	Serenity Green Tea Lg
	17	2023-01-01	07:59:58	1	5	Lower Manhattan	79	3.75	Bakery	Scone	Jumbo Savory Scone
	18	2023-01-01	08:00:18	1	8	Hell's Kitchen	42	2.5	Tea	Brewed herbal tea	Lemon Grass Rg
	19	2023-01-01	08:00:39	2	8	Hell's Kitchen	59	4.5	Drinking Chocolate	Hot chocolate	Dark chocolate Lg
	20	2023-01-01	08:11:45	1	8	Hell's Kitchen	61	4.75	Drinking Chocolate	Hot chocolate	Sustainably Grown Organic Lg
	21	2023-01-01	08:17:27	2	8	Hell's Kitchen	33	3.5	Coffee	Gourmet brewed coffee	Ethiopia Lg
	22	2023-01-01	08:24:26	2	5	Lower Manhattan	56	2.55	Tea	Brewed Chai tea	Spicy Eye Opener Chai Rg
	23	2023-01-01	08:24:26	1	5	Lower Manhattan	69	3.25	Bakery	Biscotti	Hazelnut Biscotti
	24	2023-01-01	08:29:38	1	8	Hell's Kitchen	56	2.55	Tea	Brewed Chai tea	Spicy Eye Opener Chai Rg

"This analysis is based on the company's performance for the year 2023 only"



Working Hours Operational Days

```
select count(distinct order_date) as total_days_in_dataset,  
count(distinct week(order_date)) as total_weeks_in_dataset,  
count(distinct month(order_date)) as total_months_in_dataset,  
min(order_date) as first_date,  
max(order_date) as last_date  
from coffee1
```

total_days_in_dataset	total_weeks_in_dataset	total_months_in_dataset	first_date	last_date
181	36	12	2023-01-01	2023-12-06

```
select'3' as store_id, '07:00 to 19:00' as time,  
12 as total_hours  
union  
select'5' as store_id,'06:00 to 20:00' as time,  
14 as total_hours  
union  
select'8' as store_id,'06:00 to 20:00' as time,  
14 as total_hours
```

A-Z store_id	A-Z time	total_hours
3	07:00 to 19:00	12
5	06:00 to 20:00	14
8	06:00 to 20:00	14

```
select distinct store_id store , location  
from coffee1  
order by store_id
```

store	location
3	Astoria
5	Lower Manhattan
8	Hell's Kitchen

Days of Operation: Stores operate 7 days a week



Total Analysis



Summary

Total Revenue: This figure represents the company's total sales.

```
④ select ROUND(SUM(price * quantity), 1) AS total_revenue  
      from coffee1
```

123	total_revenue	▼
698,812.3		

Total Orders: This reflects the total number of successful transactions.

```
④ select COUNT(DISTINCT order_id) AS total_orders  
      from coffee1
```

123	total_orders	▼
149,116		

Total Quantity: This shows the overall volume of products sold.

```
④ select SUM(quantity) AS total_quantity  
      from coffee1
```

123	total_quantity	▼
214,470		

Total Products: This represents the number of unique products available in the catalog.

```
④ select COUNT(DISTINCT product_id) AS total_products  
      from coffee1
```

123	total_products	▼
80		

Total Stores: This indicates the size of the branch network.

```
④ select COUNT(DISTINCT store_id) AS total_stores  
      from coffee1
```

123	total_stores	▼
3		

Store Performance:

Here, we've analyzed the performance of each store individually. This table displays each store's performance in terms of orders, quantities, and revenue, showing the company's overall totals. This analysis helps us identify the strongest and weakest branches.

The analysis shows a slight lead for **Store 8** as the top-performing branch, while **Store 5** represents the weakest performance. Despite the overall revenue being close, this minor variance highlights an opportunity to study and apply the best practices of the top-performing store.

```
④ select coalesce(store_id,'totals')as store_id ,  
count(order_id) as total_orders,  
sum(quantity) as total_quantity,  
round(sum(price * quantity ),1) as total_revenue  
from coffee1  
group by store_id with rollup  
order by total_revenue
```

Category Performance:

To understand what contributes to our revenue, we analyzed category performance. This table shows the total orders, quantities, and revenue for each product category, along with a grand total for all categories, which helps us identify the most profitable ones.

Revenue is primarily driven by the sales of **Coffee and Tea**, followed by **Bakery**. In contrast, categories like **Chocolate and Flavors** contribute the least to revenue, which indicates they are potential opportunities for development or review.

```
④ select coalesce(category,'totals')as category ,  
count(order_id) as total_orders,  
sum(quantity) as total_quantity,  
round(sum(price * quantity ),1) as total_revenue  
from coffee1  
group by category with rollup  
order by total_revenue
```

O	A-Z store_id	123 total_orders	123 total_quantity	123 total_revenue
1	5	47,782	71,742	230,057.3
2	3	50,599	70,991	232,243.9
3	8	50,735	71,737	236,511.2
4	totals	149,116	214,470	698,812.3

O	A-Z category	123 total_orders	123 total_quantity	123 total_revenue
1	Packaged Chocolate	487	487	4,407.6
2	Flavours	6,790	10,511	8,408.8
3	Loose Tea	1,210	1,210	11,213.6
4	Branded	747	776	13,607
5	Coffee beans	1,753	1,828	40,085.2
6	Drinking Chocolate	11,468	17,457	72,416
7	Bakery	22,796	23,214	82,315.6
8	Tea	45,449	69,737	196,406
9	Coffee	58,416	89,250	269,952.5
10	totals	149,116	214,470	698,812.3

Analyzing the Performance of Store 5 (The Weakest Branch)

This analysis reveals the product mix of Store 5 specifically. With it, we can determine if the store's weak performance is linked to the types of products it sells. For example, is it selling low volumes of the most profitable categories? This foundational understanding is the first step toward creating improvement plans.

```
④ select coalesce(category, 'totals') as category ,  
       count(order_id) as total_orders ,  
       sum(quantity) as total_quantity ,  
       round(sum(price * quantity ),1) as total_revenue  
     from coffee1  
    where store_id = 5  
  group by category with rollup  
order by total_revenue
```

Comparing "Coffee Beans" Sales between Stores 5 and 8

This query provides the evidence that links our analysis of store performance to category performance. A direct comparison between the weakest store (5) and the strongest store (8) in selling a core category like "Coffee beans" confirms that one reason for Store 8's success is its ability to sell more of the products that contribute the most to revenue. This insight helps us understand strengths and weaknesses in a very specific way.

```
④ select store_id,coalesce(category,'totals') as category ,  
       count(order_id) as total_orders ,  
       sum(quantity) as total_quantites ,  
       round(sum(price * quantity ),1) as total_revenues  
     from coffee1  
    where category in ('Coffee beans') and store_id in (5,8)  
  group by store_id, category
```

Depth Analysis

The in-depth analysis reveals that Store 8's superior performance over Store 5 is due to its ability to sell a higher volume of more profitable products like "Coffee beans," confirming that a store's focus on key products is a key driver of success.

	A-Z category	123 total_orders	123 total_quantity	123 total_revenue
1	Packaged Chocolate	180	180	1,619.2
2	Loose Tea	381	381	3,558.2
3	Flavours	2,930	4,709	3,767.2
4	Branded	349	378	6,208
5	Coffee beans	531	536	11,231
6	Drinking Chocolate	3,405	5,434	22,494.5
7	Bakery	7,890	8,040	28,328.9
8	Tea	13,912	22,709	63,864.7
9	Coffee	18,204	29,375	88,985.5
10	totals	47,782	71,742	230,057.2

	123 store_id	A-Z category	123 total_orders	123 total_quantites	123 total_revenues
1	5	Coffee beans	531	536	11,231
2	8	Coffee beans	720	790	18,635.1

Overall Quarterly Revenue Analysis

This table reveals a clear seasonal pattern in the company's performance, as the first and second quarters contribute the highest revenue, while the third and fourth quarters show a sharp decline in sales.

```
④ select quarter(order_date) as quarter,  
round(sum(price * quantity), 2) as total_quarterly_revenue  
from coffee1  
group by quarter  
order by quarter
```

④	123 quarter	123 total_quarterly_revenue
1	1	223,580.03
2	2	336,300.78
3	3	70,023.6
4	4	68,907.92

Store Performance by Quarter

This analysis confirms that the revenue decline in the second half of the year is not an issue specific to one branch. Instead, it is a general seasonal trend that affects all stores equally, indicating that the causes of the decline are company wide.

```
④ select store_id,quarter(order_date) as quarter,  
round(sum(price * quantity), 2) as total_quarterly_revenue  
from coffee1  
group by quarter, store_id  
order by total_quarterly_revenue desc
```

④	123 store_id	123 quarter	123 total_quarterly_revenue
1	3	2	113,220.86
2	5	2	111,844.44
3	8	2	111,235.48
4	3	1	77,156.83
5	8	1	74,278.99
6	5	1	72,144.21
7	8	4	25,621.14
8	8	3	25,375.56
9	5	4	23,385.94
10	5	3	22,682.66
11	3	3	21,965.38
12	3	4	19,900.84

Monthly Company Performance

This analysis helps us understand the company's performance throughout the year. By tracking **average monthly income**, we can identify seasonal trends and peak periods, giving us a clear view of overall growth.

```
select year(order_date) as year, month(order_date) as month,
round(sum(price * quantity), 2) as total_monthly_revenue
from coffee1
group by year, month
order by total_monthly_revenue
```

First-Half Growth:

The monthly revenue analysis shows strong and steady growth during the first half of the year (January to June), with revenue peaking in June.

Sharp Decline:

A significant and noticeable drop in revenue occurred during the second half of the year (July to December), where numbers returned to levels close to the beginning of the year. This decline indicates a seasonal pattern that needs to be investigated.

First-Half Growth: The company achieved its highest revenue in the first half of the year.

Performance Peak: Revenue peaked in months June (6), May (5), and April (4)

```
select month(order_date) as month,
round(sum(price * quantity), 2) as total_monthly_revenue
from coffee1
group by month
order by total_monthly_revenue desc
limit 3
```

O	123 year	123 month	123 total_monthly_revenue
1	2,023	7	20,966.3
2	2,023	12	22,360.04
3	2,023	11	22,415.67
4	2,023	9	23,804.22
5	2,023	10	24,132.21
6	2,023	8	25,253.08
7	2,023	2	66,554.94
8	2,023	1	73,457.6
9	2,023	3	83,567.49
10	2,023	4	93,927.95
11	2,023	5	119,958.66
12	2,023	6	122,414.17

O	123 month	123 total_monthly_revenue
1	6	122,414.17
2	5	119,958.66
3	4	93,927.95

Revenue Performance:

Top 3 months revenue for stores

```
with monthlyrevenue as (select store_id, year(order_date) as year, month(order_date) as month,
round(sum(price * quantity), 2) as total_revenue
from coffee1 group by store_id, year(order_date), month(order_date)),
rankedmonths as (select store_id, year, month, total_revenue,
rank() over (partition by store_id order by total_revenue desc) as month_rank from monthlyrevenue)
select store_id, year, month, total_revenue
from rankedmonths where month_rank <= 3
order by store_id, month_rank
```

store_id	year	month	total_revenue
3	2,023	5	41,171.99
3	2,023	6	40,275.7
3	2,023	4	31,773.17
5	2,023	6	40,750.23
5	2,023	5	40,228.06
5	2,023	4	30,866.15
8	2,023	6	41,388.24
8	2,023	5	38,558.61
8	2,023	4	31,288.63

Bottom 3 months revenue for stores

```
with monthlyrevenue as (select store_id, year(order_date) as year, month(order_date) as month,
round(sum(price * quantity), 2) as total_revenue
from coffee1 group by store_id, year(order_date), month(order_date)),
rankedmonths as (select store_id, year, month, total_revenue,
rank() over (partition by store_id order by total_revenue asc) as month_rank from monthlyrevenue)
select store_id, year, month, total_revenue
from rankedmonths where month_rank <= 3
order by store_id, month_rank
```

store_id	year	month	total_revenue
3	2,023	12	5,383.74
3	2,023	9	6,622.41
3	2,023	7	6,643.65
5	2,023	7	5,736.75
5	2,023	11	7,200.14
5	2,023	10	7,937.25
8	2,023	8	8,230.11
8	2,023	11	8,416.43
8	2,023	10	8,476.96

Weekly Revenue Analysis (Overview)

The weekly revenue analysis shows that performance was very strong in the first half of the year. In particular, revenue peaked in Week 25 at over 41,000 SAR. After that, revenue declined sharply in the second half of the year, with notable drops in performance.

```
④ select year(order_date) as year,  
week(order_date) as week_number,  
round(sum(price * quantity), 2) as total_weekly_revenue  
from coffee1  
group by year,week_number  
order by week_number
```

Missing Data

Important Note: Based on the data, there are clear gaps where no revenue was recorded. This includes weeks **28 to 31, 33 to 35, 36 to 40, and 40 to 44**. This suggests two possibilities: either the branches were closed for reasons like holidays, or there was an error in data entry and collection during these periods.

	year	week_number	total_weekly_revenue
1	2,023	1	21,673.1
2	2,023	2	5,716.11
3	2,023	3	20,618.89
4	2,023	4	18,578.21
5	2,023	5	18,353.44
6	2,023	6	9,682
7	2,023	7	16,637.02
8	2,023	8	20,325.92
9	2,023	9	20,344.4
10	2,023	10	9,881.25
11	2,023	11	20,254.56
12	2,023	12	23,424.5
13	2,023	13	20,310.73
14	2,023	14	18,235.75
15	2,023	15	12,367.57
16	2,023	16	29,396.61
17	2,023	17	28,155.59
18	2,023	18	24,386.03
19	2,023	19	5,511.53
20	2,023	20	38,158.39
21	2,023	21	37,637.28
22	2,023	22	24,913.06
23	2,023	23	12,054.25
24	2,023	24	29,961.15
25	2,023	25	41,036.1
26	2,023	26	34,887.02
27	2,023	27	18,346.65
28	2,023	31	19,101.49
29	2,023	32	6,151.59
30	2,023	35	5,287.24
31	2,023	36	18,516.98
32	2,023	40	24,132.21
33	2,023	44	12,147
34	2,023	45	10,268.67
35	2,023	48	5,221.7
36	2,023	49	17,138.34

Overall, Company Analysis

The company's general performance is focused on the beginning of the week, with **Monday** being the peak day for both orders and revenue.

```
select dayofweek(order_date) day_of_week , count( order_id) total_orders ,  
round(sum(price * quantity ),1) as total_revenues  
from coffee1  
group by day_of_week  
order by total_orders desc
```

day_of_week	total_orders	total_revenues
2	22,377	104,723.2
4	21,854	102,778.8
1	21,380	99,660.4
3	21,287	100,277.9
6	21,241	99,719.2
5	20,990	97,210.1
7	19,987	94,442.8

Branch 8 Analysis

This branch differs slightly from the overall trend, as its peak activity occurs on **Tuesday**, which records the highest number of orders and revenue.

```
select dayofweek(order_date) day_of_week , count( order_id) total_orders ,  
round(sum(price * quantity ),1) as total_revenues  
from coffee1  
where store_id = 8  
group by day_of_week  
order by total_orders desc
```

day_of_week	total_orders	total_revenues
3	7,548	35,450.9
2	7,444	34,767.6
4	7,418	34,673.3
1	7,401	33,889.1
6	7,156	33,290.1
5	7,099	32,676.6
7	6,669	31,763.5

Shared Trend

Despite this difference, both the overall company and Branch 8 share a common trend: **Saturday** is the least active day in terms of both orders and revenue.

Hourly Performance Analysis:

The analysis shows that the early morning and work hours are the most profitable for the company. Specifically, hours 10, 9, and 8 represent the peak of daily revenue, which is consistent with the nature of our caffeine-based products and their consumption during working hours.

```
select hour(time) hour_of_day , count(order_id) total_orders,
round(sum(price*quantity),2) total_revenue
from coffee1
group by hour_of_day
order by total_revenue desc
```

	hour_of_day	total_orders	total_revenue
1	10	18,545	88,673.39
2	9	17,764	85,169.53
3	8	17,654	82,699.87
4	7	13,428	63,526.47
5	11	9,766	46,319.14
6	15	8,979	41,733.1
7	14	8,933	41,304.74
8	16	9,093	41,122.75
9	13	8,714	40,367.45
10	12	8,708	40,192.79
11	17	8,745	40,134.31
12	18	7,498	34,286.2
13	19	6,092	28,446.68
14	6	4,594	21,900.27
15	20	603	2,935.64

Comparing Branch Performance During Peak Hours:

Although the morning peak is a general trend, there is a significant performance variance among the branches. During each of the main peak hours (8, 9, and 10), Store 8 achieves the highest revenue compared to Stores 3 and 5, highlighting its superiority and effectiveness in converting high demand into profits.

```
select store_id, hour(time) hour_of_day , count(order_id) total_orders,
round(sum(price*quantity),2) total_revenue
from coffee1
where hour(time) in (10 ,9 , 8)
group by hour_of_day , store_id
order by hour_of_day
```

	store_id	hour_of_day	total_orders	total_revenue
1	3	8	4,966	22,805.9
2	5	8	5,779	28,349.53
3	8	8	6,909	31,544.44
4	3	9	5,083	23,183.57
5	5	9	5,914	29,111.67
6	8	9	6,767	32,874.29
7	3	10	5,291	24,426.12
8	5	10	6,297	30,641.46
9	8	10	6,957	33,605.81



Averages Analysis



Order and Price Averages

This query provides three main averages: the average price per item, the average quantity per order, and most importantly, the average revenue per order.

```
④ select round(avg(price), 2) as avg_price_per_item,  
       round(avg(quantity), 2) as avg_quantity_per_order,  
       round(avg(price * quantity), 2) as avg_revenue_per_order  
     from coffee1
```

O	123 avg_price_per_item	123 avg_quantity_per_order	123 avg_revenue_per_order
1	3.38	1.44	4.69

Average Revenue per Order

This metric shows the average monetary value of each order, helping to understand customer spending behavior at each store.

```
④ select coalesce(store_id, 'overall average') as store_id,  
       round(avg(price * quantity), 2) as avg_revenue_per_order  
     from coffee1  
   group by store_id with rollup
```

O	A-Z store_id	123 avg_revenue_per_order
1	3	4.59
2	5	4.81
3	8	4.66
4	overall average	4.69

Average Quantity per Order

This metric reveals the average number of items a customer buys per order, reflecting the average basket size.

```
④ select coalesce(store_id, 'overall average') as store_id,  
       round(sum(quantity) / count(order_id), 2) as avg_quantity_per_order  
     from coffee1  
   group by store_id with rollup
```

O	A-Z store_id	123 avg_quantity_per_order
1	3	1.4
2	5	1.5
3	8	1.41
4	overall average	1.44



Overall Performance Averages

This query shows the company's overall average revenue at different time levels: quarterly, monthly, weekly, and daily.

```
① select round(avg(total_quarterly_revenue), 2) as avg_quarterly_revenue,
       round(avg(total_monthly_revenue), 2) as avg_monthly_revenue,
       round(avg(total_weekly_revenue), 2) as avg_weekly_revenue,
       round(avg(total_daily_revenue), 2) as avg_daily_revenue
  from (select year(order_date) as year,
              quarter(order_date) as quarter,sum(price * quantity) as total_quarterly_revenue
         from coffee1 group by year, quarter) as quarterly_revenues,
       (select year(order_date) as year,month(order_date) as month,
              sum(price * quantity) as total_monthly_revenue from coffee1
         group by year, month) as monthly_revenues,(select year(order_date) as year,
              week(order_date) as week,sum(price * quantity) as total_weekly_revenue
         from coffee1 group by year, week) as weekly_revenues,(select order_date,
              sum(price * quantity) as total_daily_revenue from coffee1
         group by order_date) as daily_revenues
```

123 avg_quarterly_revenue ▾	123 avg_monthly_revenue ▾	123 avg_weekly_revenue ▾	123 avg_daily_revenue ▾
174,703.08	58,234.36	19,411.45	3,860.84



Overall Performance Averages

This query analyzes the performance of **each store** by calculating its average daily, weekly, monthly, and quarterly revenue in a single table.

```
select daily_avg.store_id,
       round(daily_avg.avg_daily_revenue, 2) as avg_daily_revenue,
       round(weekly_avg.avg_weekly_revenue, 2) as avg_weekly_revenue,
       round(monthly_avg.avg_monthly_revenue, 2) as avg_monthly_revenue,
       round(quarterly_avg.avg_quarterly_revenue, 2) as avg_quarterly_revenue
  from (select store_id,avg(total_daily_revenue) as avg_daily_revenue
        from (select store_id,order_date,sum(price * quantity) as total_daily_revenue
              from coffee1 group by store_id, order_date) as daily_revenues
       group by store_id) as daily_avg left join (select store_id,
                                               avg(total_weekly_revenue) as avg_weekly_revenue
                                              from (select store_id,
                                                          year(order_date) as year,week(order_date) as week,sum(price * quantity)
                                                       as total_weekly_revenue from coffee1 group by store_id, year, week) as weekly_revenues
                                             group by store_id) as weekly_avg on daily_avg.store_id = weekly_avg.store_id
      left join (select store_id,avg(total_monthly_revenue) as avg_monthly_revenue
                 from (select store_id,year(order_date) as year,month(order_date) as month,
                           sum(price * quantity) as total_monthly_revenue from coffee1
                           group by store_id, year, month) as monthly_revenues
                     group by store_id) as monthly_avg on daily_avg.store_id = monthly_avg.store_id
      left join (select store_id,avg(total_quarterly_revenue) as avg_quarterly_revenue
                 from (select store_id,year(order_date) as year,quarter(order_date) as quarter,
                           sum(price * quantity) as total_quarterly_revenue from coffee1 group by
                           store_id, year, quarter) as quarterly_revenues
                     group by store_id) as quarterly_avg
                   on daily_avg.store_id = quarterly_avg.store_id order by daily_avg.store_id
```

store_id	avg_daily_revenue	avg_weekly_revenue	avg_monthly_revenue	avg_quarterly_revenue
3	1,283.12	6,451.22	19,353.66	58,060.98
5	1,271.03	6,390.48	19,171.44	57,514.31
8	1,306.69	6,569.75	19,709.26	59,127.79

↑
Order
↓

Overall Order Averages

This table shows the average number of orders the company receives across different time periods. These figures serve as a **key metric** for transaction volume and help to understand the average daily or monthly workload.

```
④select round(avg(total_quarterly_orders), 2) as avg_quarterly_orders,
       round(avg(total_monthly_orders), 2) as avg_monthly_orders,
       round(avg(total_weekly_orders), 2) as avg_weekly_orders,
       round(avg(total_daily_orders), 2) as avg_daily_orders
  from (select year(order_date) as year,quarter(order_date) as quarter,
              count(order_id) as total_quarterly_orders
         from coffee1
        group by year, quarter) as quarterly_orders,(select year(order_date) as year,
               month(order_date) as month,count(order_id) as total_monthly_orders
          from coffee1 group by year, month) as monthly_orders,(select year(order_date) as year,
               week(order_date) as week,count(order_id) as total_weekly_orders
          from coffee1
         group by year, week) as weekly_orders,(select order_date,count(order_id) as total_daily_orders
          from coffee1 group by order_date) as daily_orders
```

123 avg_quarterly_orders ▾	123 avg_monthly_orders ▾	123 avg_weekly_orders ▾	123 avg_daily_orders ▾
37,279	12,426.33	4,142.11	823.85

↑
Order

Overall Order Averages

This query analyzes the performance of **each store** by calculating its average daily, weekly, monthly, and quarterly order count in a single table.

```
SELECT daily_avg.store_id,
ROUND(daily_avg.avg_daily_orders, 2) as avg_daily_orders,
ROUND(weekly_avg.avg_weekly_orders, 2) as avg_weekly_orders,
ROUND(monthly_avg.avg_monthly_orders, 2) as avg_monthly_orders,
ROUND(quarterly_avg.avg_quarterly_orders, 2) as avg_quarterly_orders
FROM (SELECT store_id, avg(total_daily_orders) as avg_daily_orders
      from (select store_id,order_date,count(*) as total_daily_orders
            from coffee1 group by store_id, order_date) as daily_orders
      group by store_id) as daily_avg left join (select store_id,
avg(total_weekly_orders) as avg_weekly_orders from (select store_id,
year(order_date) as year, week(order_date) as week, count(*) as
total_weekly_orders from coffee1 group by store_id, year, week) as weekly_orders
group by store_id) as weekly_avg on daily_avg.store_id = weekly_avg.store_id
left join (select store_id, avg(total_monthly_orders) as avg_monthly_orders
      from (select store_id, year(order_date) as year, month(order_date) as month,
count(*) as total_monthly_orders from coffee1 group by store_id, year, month)
      as monthly_orders group by store_id) as monthly_avg on daily_avg.store_id
= monthly_avg.store_id left join (select store_id, avg(total_quarterly_orders)
      as avg_quarterly_orders from (select store_id, year(order_date) as year,
quarter(order_date) as quarter, count(*) as total_quarterly_orders from coffee1
      group by store_id, year, quarter) as quarterly_orders group by store_id) as quarterly_avg
on daily_avg.store_id = quarterly_avg.store_id order by daily_avg.store_id
```

①	123 store_id ▾	123 avg_daily_orders ▾	123 avg_weekly_orders ▾	123 avg_monthly_orders ▾	123 avg_quarterly_orders ▾
1	3	279.55	1,405.53	4,216.58	12,649.75
2	5	263.99	1,327.28	3,981.83	11,945.5
3	8	280.3	1,409.31	4,227.92	12,683.75



Quantity

Overall Quantity Averages

This table presents the overall average quantities sold across all stores during different time periods. These figures serve as a key indicator of sales volume and help to understand the average daily or monthly workload per store.

```
select round(daily_avg.avg_daily_quantity,2) as avg_daily_quantity,
round(weekly_avg.avg_weekly_quantity,2) as avg_weekly_quantity,
round(monthly_avg.avg_monthly_quantity,2) as avg_monthly_quantity,
round(quarterly_avg.avg_quarterly_quantity,2) as avg_quarterly_quantity
from (select avg(total_daily_quantity) as avg_daily_quantity
from (select order_date,sum(quantity) as total_daily_quantity
from coffee1 group by order_date) as daily_quantities) as daily_avg
left join (select avg(total_weekly_quantity) as avg_weekly_quantity
from (select year(order_date) as year,week(order_date) as week,sum(quantity)
as total_weekly_quantity from coffee1 group by year,week) as weekly_quantities)
as weekly_avg on 1=1 left join (select avg(total_monthly_quantity) as avg_monthly_quantity
from (select year(order_date) as year,month(order_date) as month,sum(quantity)
as total_monthly_quantity from coffee1 group by year,month) as monthly_quantities)
as monthly_avg on 1=1 left join (select avg(total_quarterly_quantity) as avg_quarterly_quantity
from (select year(order_date) as year,quarter(order_date) as quarter,sum(quantity)
as total_quarterly_quantity from coffee1 group by year,quarter) as quarterly_quantities)
as quarterly_avg on 1=1
```

123 avg_daily_quantity ▾	123 avg_weekly_quantity ▾	123 avg_monthly_quantity ▾	123 avg_quarterly_quantity ▾
1,184.92	5,957.5	17,872.5	53,617.5



Overall Quantity Averages

This query analyzes the performance of each store by calculating its average daily, weekly, monthly, and quarterly quantities sold in a single table

```
select daily_avg.store_id, round(daily_avg.avg_daily_quantity,2) as avg_daily_quantity,
round(weekly_avg.avg_weekly_quantity,2) as avg_weekly_quantity,
round(monthly_avg.avg_monthly_quantity,2) as avg_monthly_quantity,
round(quarterly_avg.avg_quarterly_quantity,2) as avg_quarterly_quantity
from (select store_id,avg(total_daily_quantity) as avg_daily_quantity
from (select store_id,order_date,sum(quantity) as total_daily_quantity
from coffee1 group by store_id,order_date) as daily_quantities group by store_id)
as daily_avg left join (select store_id,avg(total_weekly_quantity) as avg_weekly_quantity
from (select store_id,year(order_date) as year,week(order_date) as week,sum(quantity)
as total_weekly_quantity from coffee1 group by store_id,year,week) as weekly_quantities
group by store_id) as weekly_avg on daily_avg.store_id=weekly_avg.store_id
left join (select store_id,avg(total_monthly_quantity) as avg_monthly_quantity
from (select store_id,year(order_date) as year,month(order_date) as month,sum(quantity)
as total_monthly_quantity from coffee1 group by store_id,year,month) as monthly_quantities
group by store_id) as monthly_avg on daily_avg.store_id=monthly_avg.store_id left join
(select store_id,avg(total_quarterly_quantity) as avg_quarterly_quantity from
(select store_id,year(order_date) as year,quarter(order_date) as quarter,
sum(quantity) as total_quarterly_quantity from coffee1 group by store_id,year,quarter)
as quarterly_quantities group by store_id) as quarterly_avg
on daily_avg.store_id=quarterly_avg.store_id order by daily_avg.store_id
```

store_id	avg_daily_quantity	avg_weekly_quantity	avg_monthly_quantity	avg_quarterly_quantity
3	392.22	1,971.97	5,915.92	17,747.75
5	396.36	1,992.83	5,978.5	17,935.5
8	396.34	1,992.69	5,978.08	17,934.25

Overall

This query is for **reporting**. It gives a full picture by showing every month's performance and comparing it to the overall average.

```
with monthly_data as(select year(order_date) as year,
month(order_date) as month,round(sum(price*quantity),2)
as total_monthly_revenue,count(order_id) as total_monthly_orders
from coffee1 group by year,month)select coalesce
(cast(year as char),'overall average') as year,
coalesce(cast(month as char),'total') as month,
round(avg(total_monthly_revenue),2) as average_monthly_revenue,
round(avg(total_monthly_orders),2) as average_monthly_orders,
case when avg(total_monthly_revenue) > (select avg(total_monthly_revenue)
from monthly_data) then 'high' when avg(total_monthly_revenue) <
(select avg(total_monthly_revenue) from monthly_data)
then 'low' else 'on average'end as performance_by_revenue
from monthly_data group by year,month with rollup order by year,month
```

A-Z year	A-Z month	123 average_monthly_revenue	123 average_monthly_orders	A-Z performance_by_revenue
2023	1	73,457.6	15,478	high
2023	10	24,132.21	5,273	low
2023	11	22,415.67	4,956	low
2023	12	22,360.04	4,877	low
2023	2	66,554.94	14,329	high
2023	3	83,567.49	18,028	high
2023	4	93,927.95	19,957	high
2023	5	119,958.66	25,494	high
2023	6	122,414.17	25,798	high
2023	7	20,966.3	4,634	low
2023	8	25,253.08	5,291	low
2023	9	23,804.22	5,001	low
overall average		58,234.36	12,426.33	on average

Targeted View

This query is for **analysis**. It filters out underperforming months, highlighting only the high-achieving periods for focused study.

```
with monthly_data as (select year(order_date) as year,month(order_date)
as month,sum(price*quantity) as total_monthly_revenue,count(order_id)
as total_monthly_orders from coffee1 group by year,month)select year,month,
round(avg(total_monthly_revenue),2) as average_monthly_revenue,
round(avg(total_monthly_orders),2) as average_monthly_orders from monthly_data
group by year,month having avg(total_monthly_revenue)>=(select
avg(total_monthly_revenue) from monthly_data) order by average_monthly_revenue desc
```

O	123 year	123 month	123 average_monthly_revenue	123 average_monthly_orders
1	2,023	6	122,414.17	25,798
2	2,023	5	119,958.66	25,494
3	2,023	4	93,927.95	19,957
4	2,023	3	83,567.49	18,028
5	2,023	1	73,457.6	15,478
6	2,023	2	66,554.94	14,329

Average Daily Performance

For a more accurate picture, we calculated the **average daily revenue for each branch**. This metric provides a fair basis for comparing performance across all branches, regardless of the number of days each store operated, helping us identify the true daily performance of each location.

```
④ select coalesce(store_id, 'overall_avg_day') as store_id,
       round(sum(price * quantity) / COUNT(DISTINCT DATE(order_date)), 2) as avg_revenue_daily
  from coffee1
 group by store_id with rollup
 order by avg_revenue_daily
```

Peak and Low-Performance Days

The highest daily revenue occurred on **June 19**, with a total of 6,403, which is significantly above the overall daily average (3,860).

In contrast, the lowest-selling day was **January 28**, with revenue of 2,037, which is less than half the overall average.

```
④ select 'highest revenue day' as performance_type,
        order_date, total_daily_revenue,
        (select round(avg(total_daily_revenue), 2)
         from (select sum(price * quantity) as total_daily_revenue
               from coffee1 group by order_date) as avg_daily_revenues)
         as overall_avg_daily_revenue
        from (select order_date,sum(price * quantity) as total_daily_revenue
              from coffee1 group by order_date
              order by total_daily_revenue desc
              limit 1) as best_day
union all
select 'lowest revenue day' as performance_type,
        order_date, total_daily_revenue,
        (select round(avg(total_daily_revenue), 2)
         from (select sum(price * quantity) as total_daily_revenue
               from coffee1 group by order_date) as avg_daily_revenues)
         as overall_avg_daily_revenue
        from (select order_date,sum(price * quantity) as total_daily_revenue
              from coffee1 group by order_date order by total_daily_revenue asc
              limit 1) as worst_day
```

O	A-Z	store_id	123	avg_revenue_daily
1	5			1,271.03
2	3			1,283.12
3	8			1,306.69
4	overall_avg_day			3,860.84

O	A-Z	performance_type	①	order_date	123	total_daily_revenue	123	overall_avg_daily_revenue
1	highest revenue day			2023-06-19		6,403.91		3,860.84
2	lowest revenue day			2023-01-28		2,037.1		3,860.84

Average Daily

An overview of the entire company's average daily performance shows that **Monday** is the peak day for both orders and revenue.

```
select dayofweek(order_date) day_of_week , round(count( order_id)/181,2) avg_orders ,  
round(sum(price * quantity ) / 181,1) as avg_dialy_revenue  
from coffee1  
group by day_of_week  
order by avg_dialy_revenue desc
```

day_of_week	avg_orders	avg_dialy_revenue
2	123.63	578.6
4	120.74	567.8
3	117.61	554
6	117.35	550.9
1	118.12	550.6
5	115.97	537.1
7	110.43	521.8

Store 8

This analysis, which can be applied to all stores, calculates the average daily revenue and orders for each day of the week. We observe that **Tuesday** is the highest-earning day for Branch 8. This differs from the overall company trend, but both Branch 8 and the overall performance share the same least active day, with the lowest revenue recorded on **Saturday**.

```
select dayofweek(order_date) day_of_week , round(count( order_id)/181,2) avg_orders ,  
round(sum(price * quantity ) / 181,1) as avg_dialy_revenue  
from coffee1  
where store_id = 8  
group by day_of_week  
order by avg_dialy_revenue desc
```

day_of_week	avg_orders	avg_dialy_revenue
3	41.7	195.9
2	41.13	192.1
4	40.98	191.6
1	40.89	187.2
6	39.54	183.9
5	39.22	180.5
7	36.85	175.5

Average Hourly Performance

This query calculates the average number of orders and average revenue per hour of the day.

```
select round(avg(total_orders_per_hour), 2) as overall_avg_orders_per_hour,  
round(avg(total_revenue_per_hour), 2) as overall_avg_revenue_per_hour  
from (select time, count(order_id) as total_orders_per_hour,  
sum(price * quantity) as total_revenue_per_hour  
from coffee1 group by time) as hourly_data
```

Average Orders Per Hour

shows the number of orders the company receives during each working hour.

Average Revenue Per Hour

shows the average revenue the company generates during each hour.

```
select hour(time) as hour_of_day,  
round(avg(total_orders_per_hour), 2) as avg_orders_per_hour,  
round(avg(total_revenue_per_hour), 2) as avg_revenue_per_hour  
from (select time, count(order_id) as total_orders_per_hour,  
sum(price * quantity) as total_revenue_per_hour  
from coffee1 group by time) as hourly_data  
group by hour_of_day order by hour_of_day
```

	overall_avg_orders_per_hour	overall_avg_revenue_per_hour
1	5.79	27.13

	hour_of_day	avg_orders_per_hour	avg_revenue_per_hour
1	6	4.86	23.15
2	7	6.27	29.69
3	8	7.14	33.43
4	9	7.13	34.2
5	10	7.38	35.27
6	11	5.39	25.56
7	12	5.03	23.22
8	13	5.08	23.52
9	14	5.17	23.92
10	15	5.13	23.83
11	16	5.07	22.95
12	17	5.15	23.65
13	18	4.93	22.53
14	19	4.66	21.78
15	20	4.19	20.39



Category Analysis



Category Performance:

To understand what contributes to our revenue, we analyzed category performance. This table shows the total orders, quantities, and revenue for each product category, along with a grand total for all categories, which helps us identify the most profitable ones.

```
select coalesce(category, 'totals') as category,
       count(order_id) as total_orders,
       sum(quantity) as total_quantity,
       round(sum(price * quantity ),1) as total_revenue
  from coffee1
 group by category with rollup
order by total_revenue
```

O	A-Z category	123 total_orders	123 total_quantity	123 total_revenue
1	Packaged Chocolate	487	487	4,407.6
2	Flavours	6,790	10,511	8,408.8
3	Loose Tea	1,210	1,210	11,213.6
4	Branded	747	776	13,607
5	Coffee beans	1,753	1,828	40,085.2
6	Drinking Chocolate	11,468	17,457	72,416
7	Bakery	22,796	23,214	82,315.6
8	Tea	45,449	69,737	196,406
9	Coffee	58,416	89,250	269,952.5
10	totals	149,116	214,470	698,812.3

Highest Volume Per Line Categories

The **Flavours** category leads the list, averaging **1.55 units per line item**. This suggests customers tend to purchase more than one unit of this item (two bottles of a specific syrup) in the same line entry.

The **Coffee** and **Tea** categories follow in second and third place, both averaging **1.53 units**. This confirms that these categories are not only major revenue drivers but are also consistently purchased in relatively higher quantities per transaction.

Drinking Chocolate is very close, with an average of **1.52 units**.

```
select category, round(avg(quantity),2) as avg_units_per_line
  from coffee1
 group by category order by avg_units_per_line desc
```

A-Z category	123 avg_units_per_line
Flavours	1.55
Coffee	1.53
Tea	1.53
Drinking Chocolate	1.52
Coffee beans	1.04
Branded	1.04
Bakery	1.02
Loose Tea	1
Packaged Chocolate	1

Category Performance(Store)

Dominance: Coffee and Tea products absolutely dominate revenue, jointly accounting for approximately **65% to 70%** of total sales across all reports.

Next Tier: The **Bakery** and **Drinking Chocolate** categories follow as the next strongest revenue sources.

```
select coalesce(category,'total')as category ,
count(order_id) as total_order,
sum(quantity) as total_quantity,
round(sum(price * quantity ),1) as total_revenue
from coffee1
where store_id = 3
group by category with rollup
order by total_revenue
```

Store 3

A-Z category	123 total_order	123 total_quantity	123 total_revenue
Packaged Chocolate	110	110	1,089.7
Flavours	1,490	2,206	1,764.8
Loose Tea	344	344	3,194
Branded	279	279	5,457
Coffee beans	502	502	10,219.2
Drinking Chocolate	4,300	6,351	26,335.2
Bakery	7,289	7,496	26,599.8
Tea	16,260	24,048	67,839.9
Coffee	20,025	29,655	89,744.3
total	50,599	70,991	232,243.9

Store 5

A-Z category	123 total_order	123 total_quantity	123 total_revenue
Packaged Chocolate	180	180	1,619.2
Loose Tea	381	381	3,558.2
Flavours	2,930	4,709	3,767.2
Branded	349	378	6,208
Coffee beans	531	536	11,231
Drinking Chocolate	3,405	5,434	22,494.5
Bakery	7,890	8,040	28,328.9
Tea	13,912	22,709	63,864.7
Coffee	18,204	29,375	88,985.5
total	47,782	71,742	230,057.2

Store 8

A-Z category	123 total_order	123 total_quantity	123 total_revenue
Packaged Chocolate	197	197	1,698.8
Branded	119	119	1,942
Flavours	2,370	3,596	2,876.8
Loose Tea	485	485	4,461.3
Coffee beans	720	790	18,635.1
Drinking Chocolate	3,763	5,672	23,586.2
Bakery	7,617	7,678	27,387
Tea	15,277	22,980	64,701.3
Coffee	20,187	30,220	91,222.6
total	50,735	71,737	236,511.2

Category Performance:

Peak Performance (Quarter)

Quarter 2 (Q2) recorded the highest performance ever, with revenue surging to its peak (around **264K**).

This quarter represents the strongest growth period of the year.

Severe Drop (Q3 and Q4):

Revenues experienced a **sudden and drastic collapse** in **Quarter 3 (Q3)**, plummeting to about **55K**, which is less than one-fifth of the Q2 revenue.

This decline continued into **Quarter 4 (Q4)**, confirming a very weak performance in the second half of the year overall.

Primary Revenue Sources:

The **Coffee** and **Tea** categories are the **Primary Revenue Sources** and the main drivers of income in **all quarters** without exception.

```
(with quarterlycategoryperformance as (select quarter(order_date)
as quarter, category, count(order_id) as total_orders, round(sum(price * quantity), 2)
as total_revenue from coffee1 where quarter(order_date) = 4 group by quarter, category)
, rankedquarterlycategories as (select *, rank() over (order by total_orders desc, total_revenue desc)
as quarter_rank from quarterlycategoryperformance) select quarter, category, total_orders, total_revenue
from rankedquarterlycategories where quarter_rank <= 3 order by total_orders desc)
union all
(with quarterlycategoryperformance as (select quarter(order_date)
as quarter, category, count(order_id) as total_orders, round(sum(price * quantity), 2)
as total_revenue from coffee1 where quarter(order_date) = 4 group by quarter, category)
, rankedquarterlycategories as (select *, rank() over (order by total_orders asc, total_revenue asc)
as quarter_rank from quarterlycategoryperformance) select quarter, category, total_orders, total_revenue
from rankedquarterlycategories where quarter_rank <= 3 order by total_orders asc)
```

123 quarter	A-Z category	123 total_orders	123 total_revenue
1	Coffee	18,963	87,914.9
1	Tea	14,816	64,440
1	Bakery	7,330	26,144.73
1	Packaged Chocolate	107	982.55
1	Branded	212	3,984
1	Loose Tea	331	3,056.45

123 quarter	A-Z category	123 total_orders	123 total_revenue
2	Coffee	28,172	131,044.65
2	Tea	21,567	94,268.75
2	Bakery	10,917	38,996.96
2	Packaged Chocolate	215	1,978.97
2	Branded	380	6,835
2	Loose Tea	516	4,779.15

123 quarter	A-Z category	123 total_orders	123 total_revenue
3	Coffee	5,867	26,194.5
3	Tea	4,591	18,732.7
3	Bakery	2,154	8,628.7
3	Branded	63	1,314
3	Packaged Chocolate	84	781.5
3	Loose Tea	179	1,659.55

123 quarter	A-Z category	123 total_orders	123 total_revenue
4	Coffee	5,414	24,798.4
4	Tea	4,475	18,964.5
4	Bakery	2,395	8,545.25
4	Packaged Chocolate	81	664.62
4	Branded	92	1,474
4	Loose Tea	184	1,718.45

Analytical Summary (Peak vs. Off-Peak)

Morning (8 to 10 AM):

Driving Force: Coffee and Tea dominate the revenue in the **strongest financial period**.

Most Strategic Product: Product 8 is a **High-Value** item, crucial for maximizing quick revenue during the rush hour.

Leader: Product 39 is the king of morning sales.

```
select category,
       count(order_id) as total_orders,
       sum(quantity) as total_quantity,
       round(sum(price * quantity), 2) as total_revenue
  from coffee1
 where hour(time) in (8, 9, 10)
 group by category
 order by total_revenue desc
 limit 5
```

Evening (6 PM, 19 PM, 20 PM):

Revenue: Declines sharply (falling to **less than 20%** of morning revenue).

Preference Shift: Demand moves toward **comfort drinks** (Drinking Chocolate) and desserts/sweets.

Leadership Change: Product 61 leads evening sales, while Product 39 (the morning leader) drops to the bottom of the rankings.

```
select category,
       count(order_id) as total_orders,
       sum(quantity) as total_quantity,
       round(sum(price * quantity), 2) as total_revenue
  from coffee1
 where hour(time) in (19, 20, 6)
 group by category
 order by total_revenue desc
 limit 5
```

A-Z category	123 total_orders	123 total_quantity	123 total_revenue
Coffee	20,345	31,264	94,891.8
Tea	15,790	24,330	68,610.6
Bakery	8,867	8,990	31,924.25
Drinking Chocolate	3,814	5,782	24,024
Coffee beans	865	912	20,406.7

A-Z category	123 total_orders	123 total_quantity	123 total_revenue
Coffee	4,224	6,410	19,415.95
Tea	3,537	5,415	15,314.15
Drinking Chocolate	982	1,591	6,616.25
Bakery	1,652	1,692	5,991.64
Coffee beans	127	127	2,571.65



Product Analysis



Product Top and Bottom Sellers

This analysis reveals a significant disparity in performance between the top and bottom-selling products, indicating that the company's revenue heavily relies on a limited number of core items.

Top-Performing Products: The top five products generate very high revenues and orders, with order counts exceeding 2,961 for product 61 and reaching up to 3,076 for product 71. These products are the main drivers of sales.

Bottom-Performing Products: In contrast, the lowest-performing products record very low order counts (fewer than 200 orders). These items contribute minimally to the overall revenue.

```
(select product_id, count(order_id) as total_orders,
sum(quantity) as total_quantites
from coffee1
group by product_id
order by total_orders desc
limit 5)
union all
(select product_id, count(order_id) as total_orders,
sum(quantity) as total_quantites
from coffee1
group by product_id
order by total_orders asc
limit 5)

(select product_id, count(order_id) as total_orders,
sum(price * quantity) as total_revenue
from coffee1
group by product_id
order by total_revenue desc
limit 5)
union all
(select product_id, count(order_id) as total_orders,
sum(price * quantity) as total_revenue
from coffee1
group by product_id
order by total_revenue asc
limit 5)
```

product_id	total_orders	total_quantites
71	3,076	3,096
50	3,053	4,708
59	3,029	4,668
54	3,026	4,643
29	3,013	4,547
19	118	118
18	122	122
10	134	134
14	142	142
7	146	146

product_id	total_orders	total_revenue
61	2,961	21,151.75
59	3,029	21,006
39	2,896	19,112.25
41	2,772	17,641.75
55	2,830	17,384
19	118	755.2
14	142	1,270.9
18	122	1,335.9
10	134	1,340
11	152	1,360.4

Top Three Best-Selling Products Per Store

```
with productperformance as (select store_id,
product_id, count(order_id) as total_orders,
round(sum(price * quantity), 2) as total_revenue
from coffee1 group by store_id, product_id),
rankedproducts as (select *, rank() over(
partition by store_id order by total_orders desc,
total_revenue desc) as sales_rank from
productperformance) select store_id, product_id,
total_orders, total_revenue from rankedproducts
where sales_rank <= 3 order by store_id,
total_orders desc
```

store_id	product_id	total_orders	total_revenue
3	59	1,166	7,897.5
3	50	1,137	4,312.5
3	57	1,126	5,065.4
5	71	1,031	3,882.23
5	45	995	4,746
5	36	965	5,610
8	87	1,363	5,056.2
8	54	1,058	3,972.5
8	46	1,054	4,002.5

Best-Selling Product Per Quarter

```
WITH QuarterlyProductPerformance AS (SELECT QUARTER(order_date)
AS quarter, product_id, COUNT(order_id) AS total_orders,
ROUND(SUM(price * quantity), 2) AS total_revenue FROM coffee1 GROUP BY quarter, product_id)
, RankedQuarterlyProducts AS (SELECT *, RANK() OVER (PARTITION BY quarter ORDER BY
total_orders DESC, total_revenue DESC) AS quarter_rank FROM QuarterlyProductPerformance)
SELECT quarter, product_id, total_orders, total_revenue FROM RankedQuarterlyProducts WHERE
quarter_rank = 1 ORDER BY quarter
```

quarter	product_id	total_orders	total_revenue
1	54	1,070	4,090
2	59	1,523	10,669.5
3	71	433	1,714.73
4	71	446	1,672.5

Analysis of Top Product Performance in Peak Months

Product 71 emerged as the most consistent performer in the second half of the year, leading sales in three separate months (July, October, and November). This makes it a crucial product for revenue stabilization during slump periods.

```
with monthlyproductperformance as (select year(order_date)
as year, month(order_date) as month, product_id, count(order_id)
as total_orders, round(sum(price * quantity), 2) as total_revenue
from coffee1 group by year, month, product_id), rankedmonthlyproducts as
(select *, rank() over (partition by year, month order by total_orders desc,
total_revenue desc) as monthly_rank from monthlyproductperformance) select
year, month, product_id, total_orders, total_revenue from rankedmonthlyproducts
where monthly_rank = 1 order by year, month
```

Store 8 (Stability Model):

Product 87 is the **Consistent Leader** and the **Core Pillar** of success, dominating sales in the store's three most profitable months.

Store 3 (Limited Change):

Leadership is **dual**; it relied on **Product 59** initially, then shifted to **Product 44** in the third month (June), indicating a change in preference.

Store 5 (Full Diversity):

Shows **high variability**; the leading product changes every month (45, then 87, then 29), suggesting its success relies on **offering variety** rather than a single champion product.

```
with rankedmonths as (select store_id, year(order_date) as year, month(order_date) as month,
rank() over (partition by store_id order by sum(price * quantity) desc) as month_rank
from coffee1
group by store_id, year(order_date), month(order_date)),
topmonthssales as (select t1.* from coffee1 as t1 join
rankedmonths as t2 on t1.store_id = t2.store_id
and year(t1.order_date) = t2.year and month(t1.order_date) = t2.month
where t2.month_rank <= 3),
rankedproducts as (select store_id, year(order_date) as year, month(order_date) as month,
product_id, category, `type`, sum(quantity) as total_sales,
rank() over (partition by store_id, year(order_date), month(order_date) order by sum(quantity) desc) as product_rank
from topmonthssales
group by store_id, year(order_date), month(order_date), product_id, category, `type`)
select store_id, year, month, product_id, total_sales from rankedproducts
where product_rank <= 1
order by store_id, year, month, total_sales desc
```

123 year	123 month	123 product_id	123 total_orders	123 total_revenue
2,023	1	54	369	1,437.5
2,023	2	46	345	1,312.5
2,023	3	54	408	1,522.5
2,023	4	59	448	3,217.5
2,023	5	49	549	2,502
2,023	6	59	558	3,874.5
2,023	7	71	133	498.75
2,023	8	38	168	851.25
2,023	9	38	174	956.25
2,023	10	71	138	517.5
2,023	11	71	168	630
2,023	12	50	141	560

123 store_id	123 year	123 month	123 product_id	123 total_sales
3	2,023	4	59	288
3	2,023	5	59	323
3	2,023	6	44	331
5	2,023	4	45	252
5	2,023	5	87	308
5	2,023	6	29	327
8	2,023	4	87	286
8	2,023	5	87	300
8	2,023	6	87	409

Seasonal Dominance:

Peak Profitability (Q1 & Q2): Product 87 is the sole champion dominating the highest profit periods in both **Store 5** and **Store 8**.

Slow Period Product (Q3 & Q4): Product 71 is the essential product for revenue stabilization during the weaker second half of the year in **Store 3** and **Store 8**.

Store Performance Variation:

Stores 5 & 8: Show stability in product leadership (Product 87 in the first half).

Store 3: Exhibits the highest rate of **rotation** (volatility), with the leading product changing every quarter (26, 59, 50, 71), necessitating high inventory and promotional flexibility.

```
with store3quarterlyperformance as (select store_id,
quarter(order_date) as quarter, product_id, count(order_id)
as total_orders, round(sum(price * quantity), 2) as total_revenue
from coffee1 where store_id = 3 group by store_id, quarter, product_id),
rankedquarterlyproducts as (select *, rank() over (partition by quarter
order by total_orders desc, total_revenue desc) as quarter_rank from
store3quarterlyperformance) select store_id, quarter, product_id,
total_orders, total_revenue from rankedquarterlyproducts where
quarter_rank = 1 order by quarter
```

123 store_id	123 quarter	123 product_id	123 total_orders	123 total_revenue
3	1	26	399	1,794
3	2	59	609	4,140
3	3	50	171	595
3	4	71	164	615

123 store_id	123 quarter	123 product_id	123 total_orders	123 total_revenue
5	1	87	346	1,550.1
5	2	87	513	2,295.9
5	3	38	156	843.75
5	4	65	154	245.6

123 store_id	123 quarter	123 product_id	123 total_orders	123 total_revenue
8	1	87	482	1,771.2
8	2	87	729	2,679
8	3	71	174	652.5
8	4	71	151	566.25

Most Expensive -Least Expensive

```
(select 'most expensive' as price_category,  
product_id,price from coffee1  
order by price desc limit 1)  
union all  
(select 'least expensive' as price_category,  
product_id,price from coffee1  
order by price asc limit 1)
```

A-Z price_category	123 product_id	123 price
most expensive	8	45
least expensive	64	0.8

Analysis of High-Priced Products (Price > \$18)

1. Product 8: Absolute Profitability Champion

Revenue Dominance: Product 8 (priced at \$45) completely dominates revenue in this segment, generating \$11,700.

Value vs. Volume: It generates almost **double the revenue** of its closest competitor (Product 81), despite having only 190 total orders. This makes it the **strategic tool** for maximizing average ticket value.

2. High-Value Category Control

The **Coffee Beans** and **Branded** categories entirely control the high-price segment. This confirms that customers are willing to pay a premium for **superior bean quality** or **perceived brand value**.

```
select distinct c1.category,c1.product_id, c1.price ,c2.total_orders ,c2. total_quantity, c2.total_revenues  
from coffee1 c1  
join (select product_id,count(order_id)as total_orders, sum(quantity) as total_quantity,  
round(sum(price * quantity ),1) as total_revenues  
from coffee1  
group by product_id ) c2  
on c1.product_id = c2.product_id  
where price > 18  
order by price desc
```

A-Z category	123 product_id	123 price	123 total_orders	123 total_quantity	123 total_revenues
Coffee beans	8	45	190	260	11,700
Coffee beans	9	28	206	206	4,657.5
Branded	81	28	221	221	6,163
Branded	83	23	304	315	4,509
Branded	82	23	222	240	2,935
Coffee beans	9	23	206	206	4,657.5
Branded	81	23	221	221	6,163
Coffee beans	9	22.5	206	206	4,657.5
Coffee beans	6	21	218	218	4,578
Coffee beans	4	20.45	150	150	3,067.5
Coffee beans	7	19.75	146	146	2,883.5

Best-Selling Products Between Peak and Off-Peak Periods

During the Morning Peak (8, 9, 10 AM):

Drivers: Products **39**, **59**, and **61** are the leaders in volume and revenue.

Exceptional Value: Product **8** stands out as the most important finding; it is a product with an **exceptionally high price value** (approximately **45** per order), making it a crucial strategic item for achieving quick revenue during rush hours.

```
select product_id,
       count(order_id) as total_orders,
       sum(quantity) as total_quantity,
       round(sum(price * quantity), 2) as total_revenue
  from coffee1
 where hour(time) in (8, 9, 10)
 group by product_id
 order by total_revenue desc
 limit 5
```

During Off-Peak Hours (6 AM, 19 PM, 20 PM):

Revenue Drop: The total revenue for the top five products declines significantly, confirming that the morning period is the biggest driver.

The Shift: Product **61** becomes the new leader in evening sales.

Sharp Decline: Product **39** (the morning peak leader) sees a significant drop, becoming the lowest-selling product, which confirms the variance in customer preferences between the two periods.

```
select product_id,
       count(order_id) as total_orders,
       sum(quantity) as total_quantity,
       round(sum(price * quantity), 2) as total_revenue
  from coffee1
 where hour(time) in (19, 6, 20)
 group by product_id
 order by total_revenue desc
 limit 5
```

product_id	total_orders	total_quantity	total_revenue
39	1,074	1,669	7,093.25
59	1,022	1,571	7,069.5
61	1,026	1,476	7,011
8	103	145	6,525
55	1,021	1,606	6,424

product_id	total_orders	total_quantity	total_revenue
61	254	434	2,061.5
59	268	430	1,935
55	249	385	1,540
58	260	426	1,491
39	216	326	1,385.5

Product Analysis by Day Period (Morning, Afternoon, Evening)

1. Dominant Products Throughout the Day:

The **Coffee** and **Tea** categories remain the primary revenue drivers in all time periods (morning, afternoon, evening).

Brewed Black Tea stands out as a consistently strong performer, appearing on the top-selling list in both the **morning and evening**.

2. Shifting Leadership:

In the **morning period**, tea and coffee products lead the list.

In the **afternoon**, the top-performing products change, though dominance remains within the same core categories.

In the **evening**, the best-selling products differ once again, confirming that each period has its own audience.

3. Performance of the Weakest Products:

Certain products within specific categories, such as **Packaged Chocolate** and **Green beans**, consistently show poor performance, placing them on the lowest-selling list in various periods.

```
with productsalesbyperiod as (select product_id,category,type,
case when hour(time) between 5 and 11 then 'morning'
when hour(time) between 12 and 17 then 'afternoon'
when hour(time) between 18 and 20 then 'evening'
end as time_period,sum(quantity) as total_sales_period
from coffee1
group by product_id,category,`type`, time_period),
rankedsales as (select product_id,category,`type`,time_period,total_sales_period,
rank() over (partition by time_period order by total_sales_period desc) as sales_rank
from productsalesbyperiod)
select time_period,product_id,category,`type`,total_sales_period
from rankedsales
where sales_rank <= 3
order by total_sales_period desc
```

A-Z time_period	123 product_id	A-Z category	A-Z type	123 total_sales_period
morning	44	Tea	Brewed herbal tea	2,530
morning	50	Tea	Brewed Black tea	2,525
morning	39	Coffee	Barista Espresso	2,500
afternoon	54	Tea	Brewed Chai tea	1,772
afternoon	59	Drinking Chocolate	Hot chocolate	1,764
afternoon	38	Coffee	Barista Espresso	1,738
evening	22	Coffee	Drip coffee	520
evening	50	Tea	Brewed Black tea	512
evening	37	Coffee	Barista Espresso	501

A-Z time_period	123 product_id	A-Z category	A-Z type	123 total_sales_period
morning	5	Coffee beans	Gourmet Beans	92
morning	19	Packaged Chocolate	Drinking Chocolate	79
morning	18	Loose Tea	Chai tea	78
afternoon	19	Packaged Chocolate	Drinking Chocolate	27
afternoon	21	Packaged Chocolate	Drinking Chocolate	26
afternoon	4	Coffee beans	Espresso Beans	21
evening	10	Coffee beans	Green beans	6
evening	16	Loose Tea	Chai tea	6
evening	11	Loose Tea	Herbal tea	5
evening	7	Coffee beans	Premium Beans	4

```
with productsalesbyperiod as (select product_id,category,type,
case when hour(time) between 5 and 11 then 'morning'
when hour(time) between 12 and 17 then 'afternoon'
when hour(time) between 18 and 20 then 'evening'
end as time_period,sum(quantity) as total_sales_period
from coffee1
group by product_id,category,`type`, time_period),
rankedsales as (select product_id,category,`type`,time_period,total_sales_period,
rank() over (partition by time_period order by total_sales_period asc) as sales_rank
from productsalesbyperiod)
select time_period,product_id,category,`type`,total_sales_period
from rankedsales
where sales_rank <= 3
order by total_sales_period desc
```

Product 87

unique visibility in only two out of the three locations, specifically its **absence from Store 3**, might actually explain its strong performance in the other two. If Product 87 had been present at Store 3, its results across all three stores might not have appeared as distinct

```
select store_id,category, product_id,type ,  
count(order_id) total_order ,  
round(sum(price*quantity),2) total_revenue  
from coffee1  
where product_id = 87  
group by store_id,category, product_id,type  
order by total_order
```

store_id	category	product_id	type	total_order	total_revenue
5	Coffee	87	Barista Espresso	859	3,846
8	Coffee	87	Barista Espresso	1,363	5,056.2

Product 59

is performing exceptionally well across all branches. This beverage clearly enjoys **significant demand**, as evidenced by its high volume of total orders and resulting revenue

```
select store_id,category, product_id,type ,  
count(order_id) total_order ,  
round(sum(price*quantity),2) total_revenue  
from coffee1  
where product_id = 59  
group by store_id,category, product_id,type  
order by total_order
```

store_id	category	product_id	type	total_order	total_revenue
5	Drinking Chocolate	59	Hot chocolate	912	6,574.5
8	Drinking Chocolate	59	Hot chocolate	951	6,534
3	Drinking Chocolate	59	Hot chocolate	1,166	7,897.5



Type Analysis



Profitability by Type

Highest Profitability: Barista Espresso. It generates **\$91,406**, confirming it as the most valuable core product.

Revenue Foundation: Four types (Espresso, Brewed Chai, Hot Chocolate, Gourmet Brewed Coffee) contribute **over \$70,000** each.

Importance of Add-ons: Types like **Scone** and **Biscotti** achieve strong revenues (up to **\$19,700**), highlighting their role in boosting the average ticket value.

Luxury Value Products: **Premium Beans** generate a respectable revenue (\$14,583) despite a very low order volume (336 orders)

```
select type, count(order_id) total_order,
round(sum(price*quantity),2) total_revenue
from coffee1
group by type
order by total_revenue desc
```

	A-Z type	123 total_order	123 total_revenue
1	Barista Espresso	16,403	91,406.2
2	Brewed Chai tea	17,183	77,081.95
3	Hot chocolate	11,468	72,416
4	Gourmet brewed coffee	16,912	70,034.6
5	Brewed Black tea	11,350	47,932
6	Brewed herbal tea	11,245	47,539.5
7	Premium brewed coffee	8,135	38,781.15
8	Organic brewed coffee	8,489	37,746.5
9	Scone	10,173	36,866.12
10	Drip coffee	8,477	31,984
11	Pastry	6,912	25,655.99
12	Brewed Green tea	5,671	23,852.5
13	Biscotti	5,711	19,793.53
14	Premium Beans	336	14,583.5
15	Organic Beans	415	8,509.5
16	Housewares	526	7,444
17	Gourmet Beans	366	6,798
18	Clothing	221	6,163
19	Regular syrup	4,979	6,084.8
20	Espresso Beans	319	5,560.25
21	Chai tea	443	4,301.25
22	House blend Beans	183	3,294
23	Herbal tea	305	2,729.75
24	Drinking Chocolate	266	2,728.04
25	Black tea	303	2,711.85
26	Sugar free syrup	1,811	2,324
27	Organic Chocolate	221	1,679.6
28	Green tea	159	1,470.75
29	Green beans	134	1,340

(Top 5 Types)

1. Uniformity at the Top:

Consistent Espresso and Tea Dominance: In all stores (3, 5, 8), **Barista Espresso** and **Brewed Chai tea** lead the revenue list, alternating between the first and second ranks.

Maximum Value: **Barista Espresso** achieves the highest revenue in both Store 5 (\$31,051) and Store 8 (\$32,420), while **Brewed Chai tea** achieves the highest revenue in Store 3 (\$27,427).

2. "Hot Drinks" as Core Support Products:

Hot Chocolate and **Gourmet Brewed** are vital revenue contributors.

These types consistently rank 3rd and 4th in all stores, confirming that hot beverages (excluding Espresso) form a **high-profit safety net** across all branches.

3. Minor Differences at the Tail of the List:

Store 5 is characterized by **Brewed Black tea** appearing as the fifth most profitable product (\$16,215).

Store 3 features **Brewed herbal tea** in fifth place (\$16,282).

```
select store_id store,type, count(order_id) total_order,
round(sum(price*quantity),2) total_revenue
from coffee1
where store_id = 3
group by store_id,type
order by total_revenue desc
limit 5
```

123 store	A-Z type	123 total_order	123 total_revenue
3	Barista Espresso	4,930	27,935
3	Brewed Chai tea	6,293	27,427.9
3	Hot chocolate	4,300	26,335.25
3	Gourmet brewed	6,053	23,823.3
3	Brewed herbal te	4,008	16,282

123 store	A-Z type	123 total_order	123 total_revenue
5	Barista Espresso	5,320	31,051
5	Brewed Chai tea	5,066	24,008.75
5	Gourmet brewed	5,217	23,201.2
5	Hot chocolate	3,405	22,494.5
5	Brewed Black tea	3,611	16,215.5

123 store	A-Z type	123 total_order	123 total_revenue
8	Barista Espresso	6,153	32,420.2
8	Brewed Chai tea	5,824	25,645.3
8	Hot chocolate	3,763	23,586.25
8	Gourmet brewed	5,642	23,010.1
8	Brewed Black tea	3,760	15,575.5

Daily Order Patterns (All Stores)

Morning Leadership: Barista Espresso and Brewed Chai tea lead morning orders in Stores 5 and 8, while Store 3 relies on **Gourmet brewed coffee** and **Brewed Chai tea**. **Evening Shift:** In the evening, **Gourmet brewed coffee** emerges as a strong replacement for tea in Stores 5 and 8, making it the key driver for afternoon sales.

```
with sales_by_period_type as (select store_id,  
case  
when hour(`time`) between 6 and 12 then 'Morning'  
when hour(`time`) between 13 and 20 then 'Evening'  
end as time_period, type, count(order_id) as total_orders  
from coffee1 where store_id =3 and hour(`time`) between 6 and 20  
group by store_id, time_period, type),ranked_types  
as (select *,rank() over (partition by store_id, time_period  
order by total_orders desc) as category_rank from  
sales_by_period_type)select store_id, time_period,type,  
total_orders from ranked_types where category_rank <= 2  
and time_period is not null order by store_id,case time_period  
when 'morning_shift' then 1 else 2 end, total_orders desc
```

store_id	time_period	type	total_orders
3	Morning	Gourmet brewed coffee	3,238
3	Morning	Brewed Chai tea	3,198
3	Evening	Brewed Chai tea	3,095
3	Evening	Gourmet brewed coffee	2,815

store_id	time_period	type	total_orders
5	Morning	Barista Espresso	3,524
5	Morning	Brewed Chai tea	3,391
5	Evening	Gourmet brewed coffee	1,871
5	Evening	Barista Espresso	1,796

store_id	time_period	type	total_orders
8	Morning	Barista Espresso	3,790
8	Morning	Brewed Chai tea	3,497
8	Evening	Barista Espresso	2,363
8	Evening	Gourmet brewed coffee	2,348

Quarterly Top 3 Product Type

```
with quarterly_type_performance as (select
quarter(order_date) as quarter,type,
count(order_id) as total_orders from
coffee1 group by quarter, type),ranked_types
as (select *,rank() over (partition by quarter
order by total_orders desc) as type_rank from
quarterly_type_performance)select quarter,type,
total_orders from ranked_types where type_rank <= 3
order by quarter,total_orders desc
```

quarter	type	total_orders
1	Brewed Chai tea	5,711
1	Gourmet brewed coffee	5,491
1	Barista Espresso	5,388
2	Gourmet brewed coffee	8,262
2	Brewed Chai tea	8,081
2	Barista Espresso	7,970
3	Brewed Chai tea	1,756
3	Gourmet brewed coffee	1,647
3	Barista Espresso	1,625
4	Brewed Chai tea	1,635
4	Gourmet brewed coffee	1,512
4	Barista Espresso	1,420

Dominance of the Shoulder Season

The **Shoulder Season** (March–May and September–November) records the highest sales volume overall. Sales for each product type during this period exceed **8,600 orders**, representing **more than double** the sales seen in either Summer or Winter. This is the **true peak season** and requires the highest levels of inventory and staffing. **Brewed Chai tea** is the most demanded type during this time, with 9,086 orders

```
with seasonal_sales as (select type,
case when month(order_date) in (6, 7, 8) then 'summer'
when month(order_date) in (1, 2, 12) then 'winter'
else 'shoulder' end as season, count(order_id) as total_orders
from coffee1 where year(order_date) = 2023
and location in ('lower manhattan', 'hell''s kitchen', 'astoria')
group by type, season), ranked_products as (select*, rank() over (
partition by season order by total_orders desc) as type_rank
from seasonal_sales) select season, type, total_orders
from ranked_products where type_rank <= 3
order by case season when 'summer' then 1
when 'winter' then 2 else 3 end, total_orders desc
```

A-Z season	A-Z type	123 total_orders
summer	Gourmet brewed coffee	4,165
summer	Brewed Chai tea	4,123
summer	Barista Espresso	3,918
winter	Brewed Chai tea	3,974
winter	Gourmet brewed coffee	3,923
winter	Barista Espresso	3,801
shoulder	Brewed Chai tea	9,086
shoulder	Gourmet brewed coffee	8,824
shoulder	Barista Espresso	8,684



Growth Evaluation



Quarterly Growth

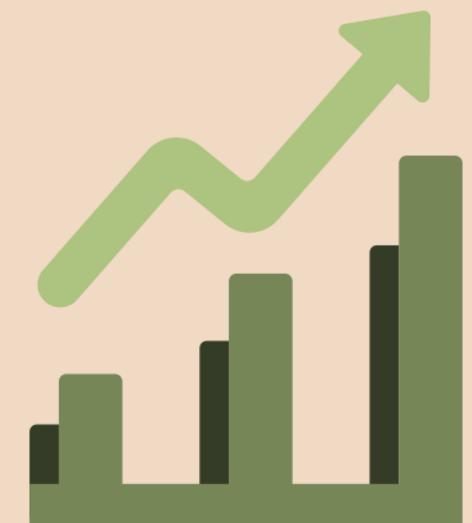
The quarterly analysis reveals a stark contrast in performance between the first and second halves of the year. The company experienced strong initial growth followed by a sharp decline in the third quarter.

The company achieved tremendous growth in the **second quarter** at a rate of **50.42%**, indicating a period of exceptional performance.

The **third quarter** saw the most significant decline, with a drop of **-79.18%**, marking a negative turning point in the company's performance for the year.

Performance continued to decline slightly in the **fourth quarter** by **-1.59%**, suggesting performance stabilized at a much lower level compared to the beginning of the year.

```
with quarterlyrevenues as (select quarter(order_date) as quarter ,  
round(sum(price * quantity), 2) as total_quarterly_revenues  
from coffee1  
group by quarter)  
select quarter, total_quarterly_revenues,  
lag(total_quarterly_revenues, 1) over (order by quarter) as previous_quarterly_revenues,  
round((total_quarterly_revenues - lag(total_quarterly_revenues, 1) over (order by quarter)) /  
lag(total_quarterly_revenues, 1) over (order by quarter) * 100, 2) as growth_percentage  
from quarterlyrevenues  
order by quarter
```



123 quarter	123 total_quarterly_revenues	123 previous_quarterly_revenues	123 growth_percentage
1	223,580.03	[NULL]	[NULL]
2	336,300.78	223,580.03	50.42
3	70,023.6	336,300.78	-79.18
4	68,907.92	70,023.6	-1.59

Quarterly Growth - Branch

The analysis shows that all three branches experienced remarkably similar performance patterns,

with revenues fluctuating significantly between the first and second halves of the year.

Strong Growth in Q2: All branches achieved substantial growth in the **second quarter**, with **Branch 5** showing the strongest performance (+55.03%), followed by **Branch 8** (+49.75%), and **Branch 3** (+46.74%).

Sharp Decline in Q3: All branches experienced a massive drop in the **third quarter**, with decline rates ranging from -77.19% to -80.6%

This synchronized decline confirms that an external factor impacted all operations uniformly.

Q4 Performance:

Branch 5 showed a positive recovery with a growth rate of +3.1%

Branch 8 stabilized its performance with a slight increase of +0.97%

Branch 3 continued to decline, with a drop of -9.4%

```
with quarterlyrevenues as (select store_id,quarter(order_date) as quarter ,
round(sum(price * quantity), 2) as total_quarterly_revenues
from coffee1
group by store_id,quarter)
select store_id,quarter,total_quarterly_revenues,
lag(total_quarterly_revenues, 1) over (partition by store_id order by quarter) as previous_quarterly_revenues,
round((total_quarterly_revenues - lag(total_quarterly_revenues, 1) over (partition by store_id order by quarter)) /
lag(total_quarterly_revenues, 1) over (partition by store_id order by quarter) * 100, 2) as growth_percentage
from quarterlyrevenues
order by store_id,quarter
```



store_id	quarter	total_quarterly_revenues	previous_quarterly_revenues	growth_percentage
3	1	77,156.83	[NULL]	[NULL]
3	2	113,220.86	77,156.83	46.74
3	3	21,965.38	113,220.86	-80.6
3	4	19,900.84	21,965.38	-9.4

store_id	quarter	total_quarterly_revenues	previous_quarterly_revenues	growth_percentage
5	1	72,144.21	[NULL]	[NULL]
5	2	111,844.44	72,144.21	55.03
5	3	22,682.66	111,844.44	-79.72
5	4	23,385.94	22,682.66	3.1

store_id	quarter	total_quarterly_revenues	previous_quarterly_revenues	growth_percentage
8	1	74,278.99	[NULL]	[NULL]
8	2	111,235.48	74,278.99	49.75
8	3	25,375.56	111,235.48	-77.19
8	4	25,621.14	25,375.56	0.97

Monthly Growth

An analysis of the company's monthly growth in 2023 shows volatile performance, with periods of strong growth followed by sharp declines.

The company achieved significant growth in **March (25.56%)** and **May (27.71%)**

Total revenues reached their highest level in **June**, at **122,414**

July experienced the steepest decline in performance at **-82.87%**, representing a significant and sudden drop.

Following this decline, performance continued to fluctuate with small, recurring decreases until the end of the year.

```
with monthlyrevenue as (select year(order_date) as year,  
month(order_date) as month,round(sum(price * quantity), 2)  
as total_monthly_revenue from coffee1 group by year,month)  
select year,month,total_monthly_revenue,lag(total_monthly_revenue, 1)  
over (order by year, month) as previous_month_revenue,round(  
(total_monthly_revenue - lag(total_monthly_revenue, 1) over  
(order by year, month)) /lag(total_monthly_revenue, 1) over  
(order by year, month) * 100,2) as growth_percentage  
from monthlyrevenue order by year,month
```

123 year	123 month	123 total_monthly_revenue	123 previous_month_revenue	123 growth_percentage
2,023	1	73,457.6	[NULL]	[NULL]
2,023	2	66,554.94	73,457.6	-9.4
2,023	3	83,567.49	66,554.94	25.56
2,023	4	93,927.95	83,567.49	12.4
2,023	5	119,958.66	93,927.95	27.71
2,023	6	122,414.17	119,958.66	2.05
2,023	7	20,966.3	122,414.17	-82.87
2,023	8	25,253.08	20,966.3	20.45
2,023	9	23,804.22	25,253.08	-5.74
2,023	10	24,132.21	23,804.22	1.38
2,023	11	22,415.67	24,132.21	-7.11
2,023	12	22,360.04	22,415.67	-0.25



Monthly Growth - Branches

The analysis shows that all three stores share the same key trends in monthly performance during 2023.

All branches achieved strong growth in the spring months (**March and May**).

All branches experienced a sharp and sudden decline in **July**.

This synchronized drop suggests a common external factor impacted the performance of the entire company.

The branches' performance in the **second half** of the year varied:

Branch 5 showed a noticeable recovery in **August** and **December**.

Branch 3 ended the year with a continuous decline in performance.



```
with monthlyrevenue as (select store_id,year(order_date) as year,
month(order_date) as month,round(sum(price * quantity), 2) as total_monthly_revenue
from coffee1
group by store_id,year,month)
select store_id,year,month,total_monthly_revenue,
lag(total_monthly_revenue, 1) over (partition by store_id order by year, month) as previous_month_revenue,
round((total_monthly_revenue - lag(total_monthly_revenue, 1) over (partition by store_id order by year, month)) /
lag(total_monthly_revenue, 1) over (partition by store_id order by year, month) * 100, 2) as growth_percentage
from monthlyrevenue
order by store_id,year,month
```

123 store_id	123 year	123 month	123 total_monthly_revenue	123 previous_month_revenue	123 growth_percentage
5	2,023	1	23,469.28	[NULL]	[NULL]
		2	21,298.94	23,469.28	-9.25
		3	27,375.99	21,298.94	28.53
		4	30,866.15	27,375.99	12.75
		5	40,228.06	30,866.15	30.33
		6	40,750.23	40,228.06	1.3
		7	5,736.75	40,750.23	-85.92
		8	8,323.65	5,736.75	45.09
		9	8,622.26	8,323.65	3.59
		10	7,937.25	8,622.26	-7.94
		11	7,200.14	7,937.25	-9.29
		12	8,248.55	7,200.14	14.56

123 store_id	123 year	123 month	123 total_monthly_revenue	123 previous_month_revenue	123 growth_percentage
3	2,023	1	24,959.55	[NULL]	[NULL]
		2	23,199.49	24,959.55	-7.05
		3	28,997.79	23,199.49	24.99
		4	31,773.17	28,997.79	9.57
		5	41,171.99	31,773.17	29.58
		6	40,275.7	41,171.99	-2.18
		7	6,643.65	40,275.7	-83.5
		8	8,699.32	6,643.65	30.94
		9	6,622.41	8,699.32	-23.87
		10	7,718	6,622.41	16.54
		11	6,799.1	7,718	-11.91
		12	5,383.74	6,799.1	-20.82

123 store_id	123 year	123 month	123 total_monthly_revenue	123 previous_month_revenue	123 growth_percentage
8	2,023	1	25,028.77	[NULL]	[NULL]
		2	22,056.51	25,028.77	-11.88
		3	27,193.71	22,056.51	23.29
		4	31,288.63	27,193.71	15.06
		5	38,558.61	31,288.63	23.24
		6	41,388.24	38,558.61	7.34
		7	8,585.9	41,388.24	-79.26
		8	8,230.11	8,585.9	-4.14
		9	8,559.55	8,230.11	4
		10	8,476.96	8,559.55	-0.96
		11	8,416.43	8,476.96	-0.71
		12	8,727.75	8,416.43	3.7



Peak Hours Analysis





Peak Days

This analysis shows that the **beginning of the week** is the busiest period, with **Monday** leading in total orders.

Conversely, the data indicates that the end of the week, specifically **Friday and Saturday**, are the company's least active days.

```
select case dayofweek(order_date)
when 1 then 'sunday' when 2 then 'monday'
when 3 then 'tuesday' when 4 then 'wednesday' when 5 then 'thursday'
when 6 then 'friday' when 7 then 'saturday'
end as day_of_week, count(order_id) as total_orders
from coffee1
group by day_of_week
order by total_orders desc
```

A-Z day_of_week	123 total_orders
monday	22,377
wednesday	21,854
sunday	21,380
tuesday	21,287
friday	21,241
thursday	20,990
saturday	19,987





Detailed Analysis by Branch:

Branch 3: Experiences its highest number of orders on **Monday**, followed by **Wednesday**. Its least active day is **Saturday**.

Branch 5: Shows a strong performance at the start of the week, with a clear peak on **Monday**. Its lowest activity is on **Saturday**.

Branch 8: Differs from the others, with its order peak on **Tuesday**, followed by **Monday**. Its least busy day is **Saturday**.



```
select store_id, case dayofweek(order_date)
when 1 then 'sunday' when 2 then 'monday'
when 3 then 'tuesday' when 4 then 'wednesday' when 5 then 'thursday'
when 6 then 'friday' when 7 then 'saturday'
end as day_of_week, count(order_id) as total_orders
from coffee1
where store_id = 3
group by day_of_week , store_id
order by total orders desc
```

store_id	day_of_week	total_orders
3	monday	7,688
3	wednesday	7,478
3	thursday	7,277
3	friday	7,259
3	sunday	7,203
3	tuesday	6,893
3	saturday	6,801

store_id	day_of_week	total_orders
5	monday	7,245
5	wednesday	6,958
5	tuesday	6,846
5	friday	6,826
5	sunday	6,776
5	thursday	6,614
5	saturday	6,517

store_id	day_of_week	total_orders
8	tuesday	7,548
8	monday	7,444
8	wednesday	7,418
8	sunday	7,401
8	friday	7,156
8	thursday	7,099
8	saturday	6,669



Peak Hours

Branch 3: Peak hours are between **9 AM and 10 AM**, when the highest volume of orders is recorded.

Branch 5: The highest concentration of orders is at **10 AM**, making this the main peak hour for the branch.

Branch 8: This branch also sees its highest number of orders at **10 AM**, which indicates this hour is its primary peak period.



```
④ select store_id, hour(time) hour_of_day ,  
       count(order_id) total_orders  
     from coffee1  
    where store_id = 3  
  group by hour_of_day , store_id  
order by total_orders desc
```

123 store_id	123 hour_of_day	123 total_orders
3	10	5,291
3	9	5,083
3	8	4,966
3	7	4,181
3	16	3,599
3	19	3,565
3	18	3,463
3	13	3,456
3	12	3,438
3	15	3,423
3	11	3,413
3	17	3,402
3	14	3,319

123 store_id	123 hour_of_day	123 total_orders
5	10	6,297
5	9	5,914
5	7	5,792
5	8	5,779
5	15	3,051
5	6	2,918
5	14	2,860
5	12	2,828
5	16	2,803
5	11	2,755
5	13	2,633
5	17	2,525
5	18	1,427
5	19	125
5	20	75

123 store_id	123 hour_of_day	123 total_orders
8	10	6,957
8	8	6,909
8	9	6,767
8	11	3,598
8	7	3,455
8	17	2,818
8	14	2,754
8	16	2,691
8	13	2,625
8	18	2,608
8	15	2,505
8	12	2,442
8	19	2,402
8	6	1,676
8	20	528



Employee Shift Performance Analysis

This analysis shows that **Shift 1 (6:00 am to 1:00 pm)** is the busiest period across all branches, as it records the highest number of orders.

In **Branch 5**, the difference between the two shifts is very significant, with Shift 1 generating more than double the number of orders compared to Shift 2.

In **Branches 3 and 8**, Shift 1 also outperforms Shift 2, but with a smaller difference than in Branch 5.

This analysis helps to understand the distribution of orders throughout the day, which allows for more effective employee scheduling and resource allocation for each work shift.

```
select store_id,  
       case when hour(time) >= 6 and hour(time) < 13  
             then 'shift 1 (6:00 am to 13:00 pm)'  
        when hour(time) >= 13 and hour(time) <= 20  
             then 'shift 2 (13:00 pm to 20:00 pm)'  
        end as employee_shift, count(order_id) as total_orders  
  from coffee1  
 group by store_id , employee_shift  
 order by store_id
```



store_id	employee_shift	total_orders
3	shift 1 (6:00 am to 13:00 pm)	26,372
	shift 2 (13:00 pm to 20:00 pm)	24,227
5	shift 1 (6:00 am to 13:00 pm)	32,283
	shift 2 (13:00 pm to 20:00 pm)	15,499
8	shift 1 (6:00 am to 13:00 pm)	31,804
	shift 2 (13:00 pm to 20:00 pm)	18,931



Customer Geography

Lower Manhattan

Astoria

Hell's Kitchen



Customer Behavior Patterns

Location	Primary Area Nature	Core Demographics (Primary Customers)	Expected Café Traffic Pattern
Lower Manhattan (Store 5)	Financial District (Business) & Affluent Residential	Ultra-High-Income Professionals, Singles, Couples without children, High-end tourists.	Strongly Bimodal: Extremely high Morning Peak (office workers) and a second, significant peak on Weekends (residents).
Hell's Kitchen (Store 8)	Entertainment, Hospitality, & Diverse Residential	Diverse Mix (Artists, Young Professionals, LGBTQ+ community, Regular tourists).	Delayed & Varied: Lower morning peak, strong Evening Peak(pre/post-theater), and high lunchtime activity.
Astoria (Queens) (Store 3)	Primary Residential Hub (Queens) with Commercial Strips	Ascending Young Professionals, Young Families, Established Immigrant Communities (Greek, Italian).	Purely Residential: High peak Early Morning commuters heading to Manhattan, and a strong sustained peak in the Evening and on Weekends (social activity).

Demographic Analysis

KPI/ Neighborhood	Lower Manhattan(5)	Hell's Kitchen(8)	Astoria (3)
Median Household Income	Highest: Approx. \$143,000 (Ultra-affluent segment)	High: Approx. \$115,834	Mid-to-High: Approx. \$89,159 (Affordable luxury segment)
Primary Resident Type	Highly Educated/Affluent; Finance professionals, Childless Couples, High-Net-Worth Individuals.	Diverse & Creative; Arts/Entertainment workers, young professionals, large LGBTQ+ community.	Ascending Professionals; Young, highly educated demographic; mix of established immigrant families.
Key Age Group	Primarily 25-45 (Prime earning years).	Primarily 25-64 (Strong working population).	Youngest (Fastest Growth): High concentration in the 25-44 bracket.
General Spending Behavior	Premium/Experience-Driven: High expenditure on luxury goods, fine dining, and frequent international travel.	Entertainment-Focused: Diverse spending on ethnic food, bars, and nightlife; proximity to Midtown services.	Value & Quality-Oriented: Prioritizes high quality at a perceived lower cost compared to Manhattan.
Coffee/Cafe Spending	Luxury Routine: Coffee consumption is high, often associated with high-value business meetings or luxury brunch culture.	Convenience-Based: High demand for quick service and casual, high-quality spots for remote work or pre-theater/post-shift routines.	Lifestyle Necessity: High consumption of specialty coffee as a perceived lifestyle amenity compensating for their longer commute.
Daily Commute Industry	Finance/Creative Services: Short commute, high reliance on walking and rapid transit.	Arts/Hospitality: High reliance on public transit; close proximity to Midtown's business and entertainment districts.	Manhattan Commuters: Majority commute to Manhattan; focus on efficient, everyday consumption before and after work.

Public Holidays & Time Off

Holiday/Period	Approximate Dates (Annually)	Duration of Decline	Primary Impact on Store 5 (Lower Manhattan)
Summer Season	June 1 – August 31	Approx. 3 Months	Significant, Gradual Drop: Affluent residents (core demographic) leave the city for summer homes, severely reducing foot traffic and core customer base.
Thanksgiving	Fourth Thursday of November	4 Days (Typically Thu-Sun)	Sharp, Immediate Decline: Most high-earning professionals travel out of NYC for the long weekend.
Winter Holidays (Christmas & New Year's)	Approx. December 15 – January 5	2–3 Weeks	Major, Sustained Drop: Primary period for extended family travel; professional and commercial activity significantly slows down.

Forecasting & Decisions



Store (5)

Lower Manhattan

Events & Conference Planning

Month	Event/Festival Name	Proposed Location (In or Around Store 5)	Target Audience	Proposed Booth Strategy
July (7)	South Street Seaport Summer Events (e.g., Outdoor Concerts)	The Seaport Area (Near Fulton Market)	Tourists, Stay-cation Residents, Families.	Outsider Booth: To offset the drop in employee demand. Focus on Cold Brews and iced refreshments.
	Brookfield Place Outdoor Events	Brookfield Place Center (Waterfront)	Business Professionals, Young Professionals, Shoppers.	High-end Kiosk: Focus on quality and the luxury experience to align with Store 5's brand.
October (10)	NYC Wine & Food Festival	The Seaport Area	Food Enthusiasts, High-Income Individuals, Shoppers.	Golden Opportunity: Must create a booth offering Specialty Coffee and unique, high-margin beverages.
	FiDi Tech/Finance Conferences (e.g., Financial or Real Estate Summits)	Main Entrances of Commercial Buildings (Wall St, Broad St)	Professionals, Wall Street Employees, Executives.	Dedicated Fast Booth: Focus on speed, quality, and premium morning coffee/breakfast services during business hours.
November (11)	Early Holiday Markets	The Oculus (Transportation and Shopping Complex)	Shoppers, Travelers, Area Workers.	Indoor Pop-up: Capitalize on pre-Thanksgiving shopping traffic. Focus on Holiday Drinks (warm/seasonal beverages).
	Veterans Day Events (Around Nov. 11)	Potentially centered around Bowling Green	Passersby, Local Residents.	Voucher/Support Service: Distribute customer vouchers instead of a full booth setup, as the main focus should not be direct commercial spending.



Lower Manhattan

A-Z store_id	123 total_orders	123 total_quantity	123 total_revenue
5	47,782	71,742	230,057.3

123 store_id	123 year	123 month	123 total_revenue
5	2,023	6	40,750.23
5	2,023	5	40,228.06
5	2,023	4	30,866.15

48.62%

123 store_id	123 year	123 month	123 total_revenue
5	2,023	7	5,736.75
5	2,023	11	7,200.14
5	2,023	10	7,937.25

9.75%

123 store_id	A-Z day_of_week	123 total_orders
5	monday	7,245
5	wednesday	6,958
5	tuesday	6,846
5	friday	6,826
5	sunday	6,776
5	thursday	6,614
5	saturday	6,517

123 store_id	A-Z time_period	123 product_id	A-Z type	123 total_orders
5	Morning	71	Pastry	811
5	Morning	45	Brewed herbal tea	707
5	Evening	34	Premium brewed c	368
5	Evening	32	Gourmet brewed c	367

123 store_id	A-Z time_period	123 product_id	A-Z type	123 total_orders
5	Morning	16	Chai tea	18
5	Morning	11	Herbal tea	22
5	Evening	12	Herbal tea	4
5	Evening	4	Espresso Beans	7

123 store_id	123 product_id	A-Z type	123 total_orders	123 total_revenue
5	71	Pastry	1,031	3,882.23
5	45	Brewed herbal tea	995	4,746
5	36	Premium brewed coffee	965	5,610

A-Z season	A-Z season_period	A-Z type	123 product_id	123 total_orders
summer	6-7-8	Pastry	71	263
summer	6-7-8	Brewed Black tea	48	248
summer	6-7-8	Gourmet brewed coffee	29	244
winter	1-2-12	Hot chocolate	60	250
winter	1-2-12	Premium brewed coffee	34	237
winter	1-2-12	Gourmet brewed coffee	32	230
shoulder	3-4-5, 9-10-11	Brewed herbal tea	45	555
shoulder	3-4-5, 9-10-11	Pastry	71	549
shoulder	3-4-5, 9-10-11	Premium brewed coffee	36	536



Lower Manhattan

Product Bundling Strategy

Morning Executive Bundle: This strategy leverages the professionals' need for **speed and efficiency** by pairing the highest-selling breakfast item (**Pastry**) with the lower-demand product (**Chai Tea**). The bundle is offered at a competitive price point, ensuring attractive savings for the customer. This immediately **boosts Chai sales** and increases the average check value by providing a complete, quick breakfast solution.

Evening Indulgence Bundle: The focus shifts from productivity to **premium relaxation**. This strategy pairs the highly valued **Premium Brewed Coffee** (reflecting the store's quality standards) with the less popular, but more indulgent, **Organic Chocolate**. This pairing not only enhances **Organic Chocolate sales** but also reinforces the store's image as a high-quality destination for a well-deserved treat after a demanding workday, encouraging higher-value purchases post-business hours.

Crucial Note: Both bundles are presented as **exclusive savings offers**, while ensuring that all constituent products remain available for **individual (standalone)** purchase to avoid limiting customer choice.

store_id	time_period	product_id	type	total_orders
5	Morning	71	Pastry	811
5	Morning	16	Chai tea	18
5	Evening	34	Premium brewed co	368
5	Evening	20	Organic Chocolate	33

Product Replacement Strategy

A-Z type	123 total_order	123 total_revenue
Green beans	134	1,340

A strategic decision has been made to **eliminate the low-demand specialty product (Green Beans)**, which generates minimal revenue and is incompatible with our customer base, who prioritize **speed and finished goods**. This product will be replaced by a **luxury, exclusive chess set** reflecting the coffee and New York identity.

This pivot enhances operational efficiency and directly targets the **affluent taste and desire for luxury** among Lower Manhattan clients with a **High-Margin** merchandise item. This ensures a substantial jump in overall revenue, even with limited unit sales.





Lower Manhattan

Thursday & Saturday Loyalty Program

A Drip Loyalty Program will be implemented to directly boost sales on the weaker days of **Thursday and Saturday**. Customers earn one point for every Drip Coffee purchased on these two days, leading to a **free coffee reward** after collecting ten points (redeemable any day). This mechanism ensures an **immediate increase in demand** on slow days and encourages **repeat visits** throughout the entire week, enhancing overall customer retention.

123 store_id	A-Z day_of_week	123 total_orders
5	monday	7,245
5	wednesday	6,958
5	tuesday	6,846
5	friday	6,826
5	sunday	6,776
5	thursday	6,614
5	saturday	6,517

123 store_id	123 year	123 month	123 total_revenue
5	2,023	7	5,736.75
5	2,023	11	7,200.14
5	2,023	10	7,937.25

Month	Strategic Focus (Target Audience)	Proposed External Presence	Core Product Focus
July (7) - Summer Downtime	Tourists & Leisure Seekers (Offsetting the office worker exodus).	Small Truck/Beverage Kiosk near the waterfront (The Seaport / Battery Park).	Exclusive Summer Refreshments: Cold Brews, Smoothies, and premium iced beverages.
October (10) - Peak Business Return	Professionals & Corporate Traffic (Capitalizing on back-to-work and conference surge).	Fast-Service Truck/Booth deployed near the Financial District or WTC event venues.	Morning Fuel: Drip Coffee (leveraging the loyalty program), and the Morning Executive Bundle.
November (11) - Holiday & Gifting Season	Luxury Shoppers & High-Value Clients (Driving high-margin merchandise sales).	Premium Booth integrated within a high-end Holiday Market or exclusive event.	Indulgent Warm Beverages: Premium hot coffee/seasonal lattes, and sales of the Luxury Chess Set.

Lower Manhattan

Proposal for Cost Reduction and Efficiency Maximization (Stores 5 & 8)

Based on field observation indicating a severe stagnation in sales, approaching zero after 20:00 (8:00 PM), the following proposal is submitted for detailed study:

I. Rationalizing Resources and Reducing Operating Hours

- 1. Earlier Closure:** Study the feasibility of advancing the closing time for both Store 5 and Store 8 due to the significant sales slump observed after 20:00.
- 2. Associated Cost Reduction:** Utilize the earlier closure to reduce evening staff work hours, thereby lowering payroll expenses.
- 3. Lowering Operational Expenses:** Decrease energy consumption and reduce the use of other resources associated with late-night operation, directly contributing to cost reduction and boosting net profit.

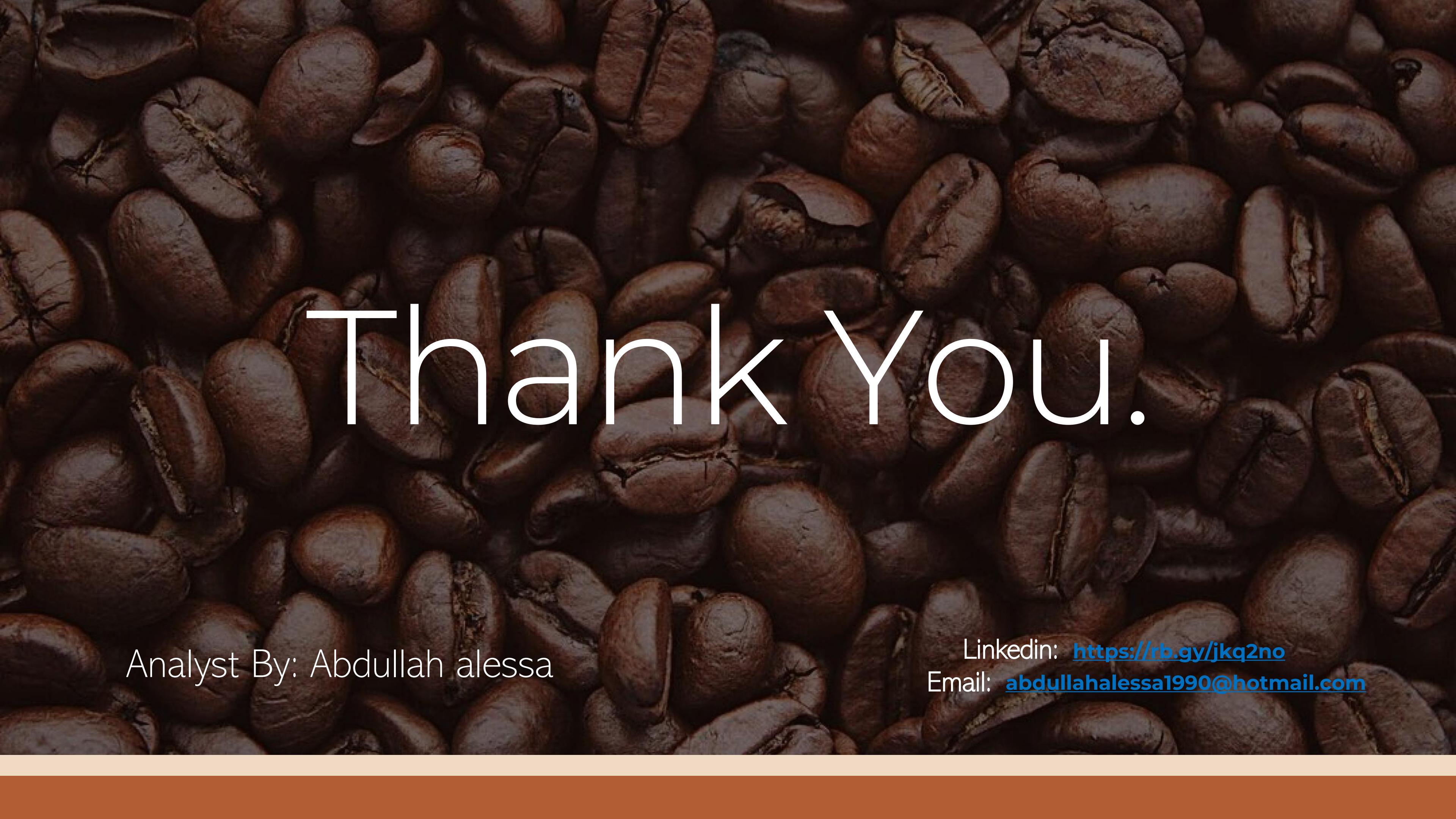
II. Restructuring the Evening Shift

- 1. Reduced Staffing Need:** Account for the fact that evening order volume drops by approximately 50% compared to the morning peak.
- 2. Staff Reduction:** Study the potential for eliminating one employee from the evening shift team at both Store 5 and Store 8 to enhance Human Resources efficiency and lower labor costs.

store_id	employee_shift	total_orders
3	shift 1 (6:00 am to 13:00 pm)	26,372
3	shift 2 (13:00 pm to 20:00 pm)	24,227
5	shift 1 (6:00 am to 13:00 pm)	32,283
5	shift 2 (13:00 pm to 20:00 pm)	15,499
8	shift 1 (6:00 am to 13:00 pm)	31,804
8	shift 2 (13:00 pm to 20:00 pm)	18,931

store_id	hour_of_day	total_orders
5	10	6,297
5	9	5,914
5	7	5,792
5	8	5,779
5	15	3,051
5	6	2,918
5	14	2,860
5	12	2,828
5	16	2,803
5	11	2,755
5	13	2,633
5	17	2,525
5	18	1,427
5	19	125
5	20	75

store_id	hour_of_day	total_orders
8	10	6,957
8	8	6,909
8	9	6,767
8	11	3,598
8	7	3,455
8	17	2,818
8	14	2,754
8	16	2,691
8	13	2,625
8	18	2,608
8	15	2,505
8	12	2,442
8	19	2,402
8	6	1,676
8	20	528



Thank You.

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