Coffee Shop Sales Analysis

A Proposal to Decode Sales Trends and Maximize Revenue

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Why This Proposal Matters

Coffee shops are a hub of life and energy — but to thrive, they need more than great coffee.

I aim to dig deep into sales data to uncover:

- Trends that help forecast revenue.
- Patterns that optimize inventory.
- Insights for smarter marketing.

Big goal

Help our coffee shop make decisions that drive profits while keeping customers happy!

The Big Questions We're Tackling

01 What's the sales vibe? (Total Sales, Total orders and Total Quantities Sold)

02 How can we increase the Month-over-Month (MoM) growth of total quantity sold, and what strategies can we implement to effectively analyze and improve the MoM difference in sales?

03 Which products are flying off the shelves, and which need a boost?

04 Is there a link between how much we sell and how much we earn?

05 Are there seasonal swings? Can we plan better for the holiday rush?

Research Methodology

Data Cleaning	Preparing and organizing the dataset
Data Exploration	Initial trends and patterns analysis
Data Visualization	Charts for better interpretation
Statistical Analysis	Exploring relationships between variables

Dataset of Coffee Shop

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	transactio	transactio	transactio	transactio	store_id	store_loca	product_ic	unit_price	product_c	product_ty	product_detail				
2	1	1/1/2023	7:06:11	2	5	Lower Mar	32	3	Coffee	Gourmet b	Ethiopia Rg				
3	2	1/1/2023	7:08:56	2	5	Lower Mar	57	3.1	Tea	Brewed Ch	Spicy Eye Opener Chai Lg				
4	3	1/1/2023	7:14:04	2	5	Lower Mar	59	4.5	Drinking Ch	Hot choco	Dark chocolate Lg				
5	4	1/1/2023	7:20:24	1	5	Lower Mar	22	2	Coffee	Drip coffe	Our Old Time Diner Blend Sm				
6	5	1/1/2023	7:22:41	2	5	Lower Mar	57	3.1	Tea	Brewed Ch	Spicy Eye Opener Chai Lg				
7	6	1/1/2023	7:22:41	1	5	Lower Mar	77	3	Bakery	Scone	Oatmeal Scone				
8	7	1/1/2023	7:25:49	1	5	Lower Mar	22	2	Coffee	Drip coffe	Our Old Time Diner Blend Sm				
9	8	1/1/2023	7:33:34	2	5	Lower Mar	28	2	Coffee	Gourmet b	Columbian Medium Roast Sm				
10	9	1/1/2023	7:39:13	1	5	Lower Mar	39	4.25	Coffee	Barista Esp	Latte Rg				
11	10	1/1/2023	7:39:34	2	5	Lower Mar	58	3.5	Drinking Ch	Hot choco	Dark chocolate Rg				
12	11	1/1/2023	7:43:05	1	5	Lower Mar	56	2.55	Tea	Brewed Ch	Spicy Eye Opener Chai Rg				
13	12	1/1/2023	7:44:35	2	5	Lower Mar	33	3.5	Coffee	Gourmet b	Ethiopia Lg				
14	13	1/1/2023	7:45:51	1	5	Lower Mar	51	3	Tea	Brewed Bl	Earl Grey Lg				
15	14	1/1/2023	7:48:19	1	5	Lower Mar	57	3.1	Tea	Brewed Ch	Spicy Eye Opener Chai Lg				

Key Insights

Sales Trends

- Total sales were analyzed, showing clear trends in daily and monthly growth.
- Comparison of weekday vs. weekend sales revealed when customers shop the most.

Top Products

- Identified best-sellers driving the majority of revenue.
- Insights highlight opportunities for promotions and inventory optimization.

Location Performance

- Pinpointed high-performing stores contributing significantly to overall sales.
- Found locations needing improvement for focused strategies.

Queries Used

DATA TYPES OF DIFFERENT COLUMNS

DESCRIBE coffee_shop_sales;

WE ALSO DID SOME DATA CLEANING

CHANGE COLUMN NAME `ï»¿transaction_id` to transaction_id
ALTER TABLE coffee_shop_sales
CHANGE COLUMN `ï»¿transaction_id` transaction_id INT;

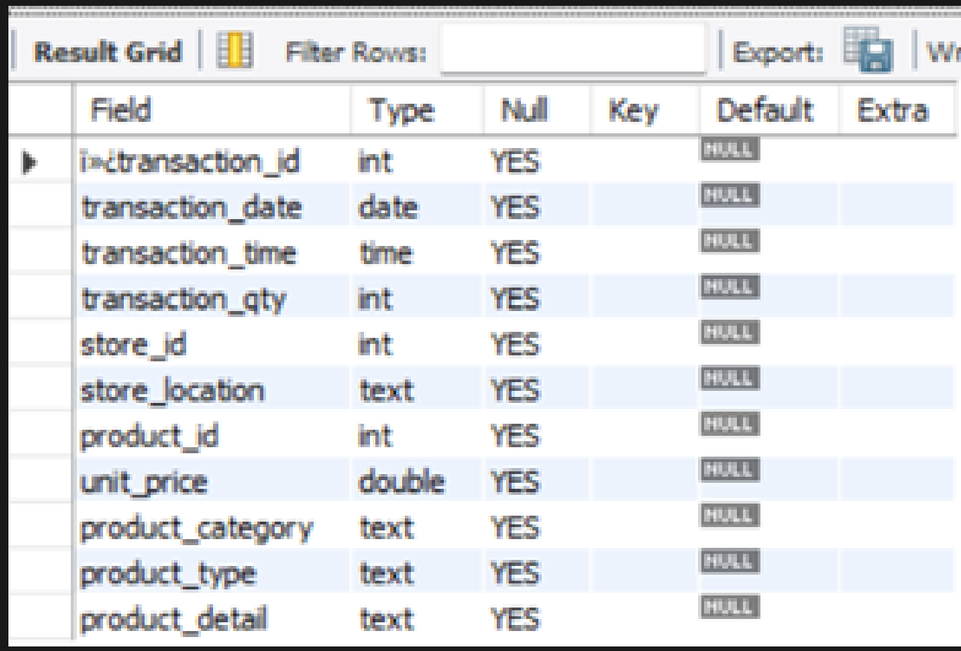
THEN WE CONVERTED transaction_date from text to date format.

ALTER DATE (transaction_date) COLUMN TO DATE DATA TYPE
ALTER TABLE coffee_shop_sales
MODIFY COLUMN transaction_date DATE;

CONVERT TIME (transaction_time) COLUMN TO PROPER DATE FORMAT
UPDATE coffee_shop_sales
SET transaction_time = STR_TO_DATE(transaction_time, '%H:%i:%s');

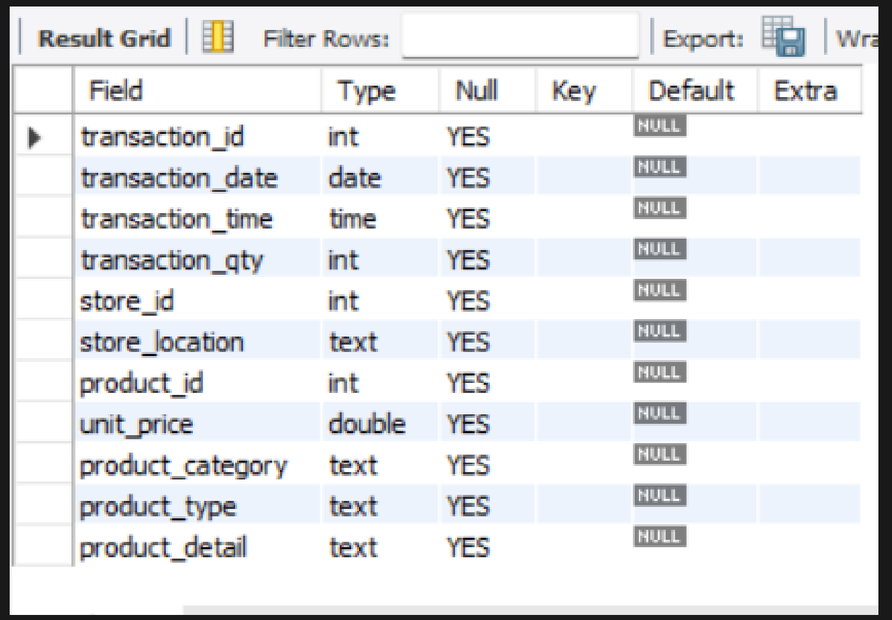
ALTER TIME (transaction_time) COLUMN TO DATE DATA TYPE
ALTER TABLE coffee_shop_sales
MODIFY COLUMN transaction_time TIME;

BEFORE....


Result Grid | Filter Rows: | Export:

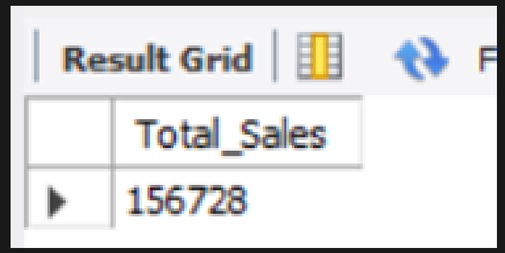
Field	Type	Null	Key	Default	Extra
ï»¿transaction_id	int	YES		NULL	
transaction_date	date	YES		NULL	
transaction_time	time	YES		NULL	
transaction_qty	int	YES		NULL	
store_id	int	YES		NULL	
store_location	text	YES		NULL	
product_id	int	YES		NULL	
unit_price	double	YES		NULL	
product_category	text	YES		NULL	
product_type	text	YES		NULL	
product_detail	text	YES		NULL	

AFTER....


Result Grid | Filter Rows: | Export:

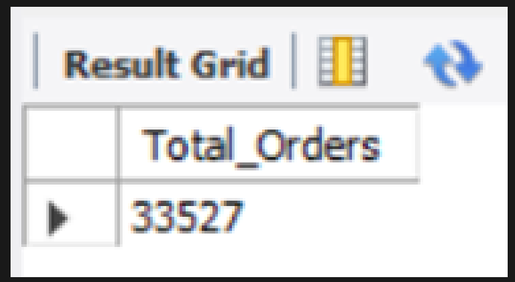
Field	Type	Null	Key	Default	Extra
transaction_id	int	YES		NULL	
transaction_date	date	YES		NULL	
transaction_time	time	YES		NULL	
transaction_qty	int	YES		NULL	
store_id	int	YES		NULL	
store_location	text	YES		NULL	
product_id	int	YES		NULL	
unit_price	double	YES		NULL	
product_category	text	YES		NULL	
product_type	text	YES		NULL	
product_detail	text	YES		NULL	

Queries Used



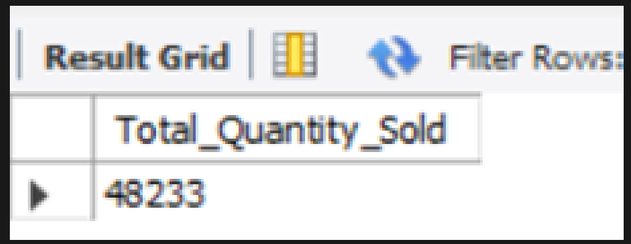
Total Sales

```
SELECT ROUND(SUM(unit_price * transaction_qty)) as Total_Sales
FROM coffee_shop_sales
WHERE MONTH(transaction_date) = 5 -- for month of (CM-May)
```



Total Orders

```
SELECT COUNT(transaction_id) as Total_Orders
FROM coffee_shop_sales
WHERE MONTH (transaction_date)= 5 -- for month of (CM-May)
```



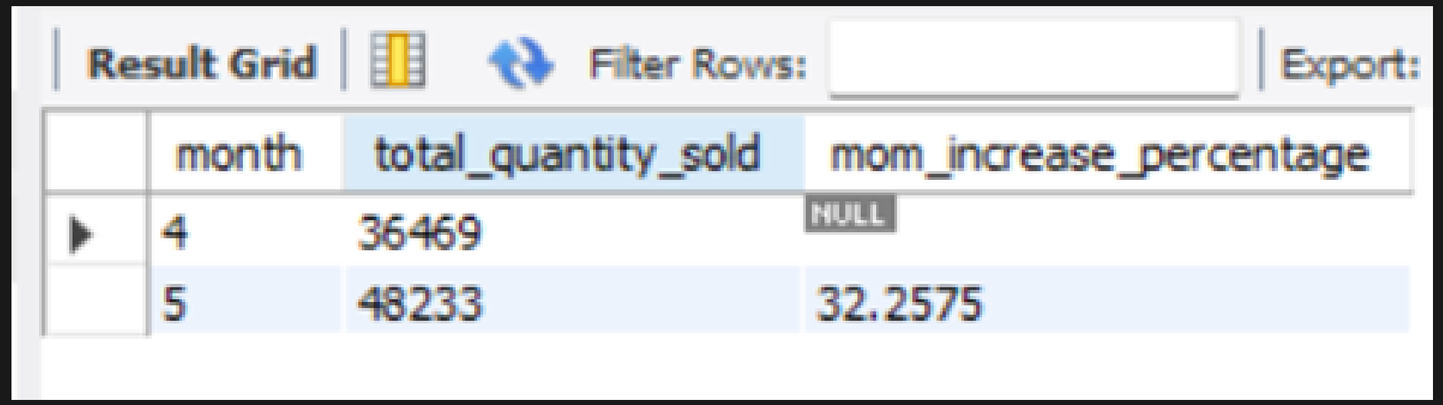
Total Quantity Sold

```
SELECT SUM(transaction_qty) as Total_Quantity_Sold
FROM coffee_shop_sales
WHERE MONTH(transaction_date) = 5 -- for month of (CM-May)
```

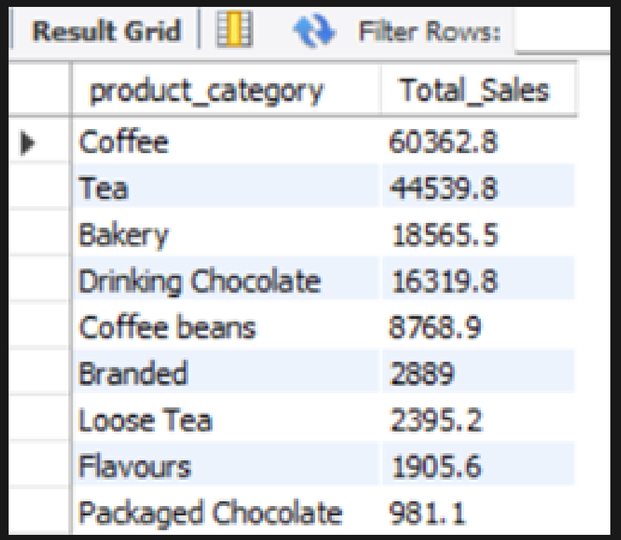
Queries Used

TOTAL QUANTITY SOLD KPI - MOM DIFFERENCE AND MOM GROWTH

```
SELECT
  MONTH(transaction_date) AS month,
  ROUND(SUM(transaction_qty)) AS total_quantity_sold,
  (SUM(transaction_qty) - LAG(SUM(transaction_qty), 1)
  OVER (ORDER BY MONTH(transaction_date))) /
LAG(SUM(transaction_qty), 1)
  OVER (ORDER BY MONTH(transaction_date)) * 100 AS
mom_increase_percentage
FROM
  coffee_shop_sales
WHERE
  MONTH(transaction_date) IN (4, 5)  -- for April and May
GROUP BY
  MONTH(transaction_date)
ORDER BY
  MONTH(transaction_date);
```



Queries Used

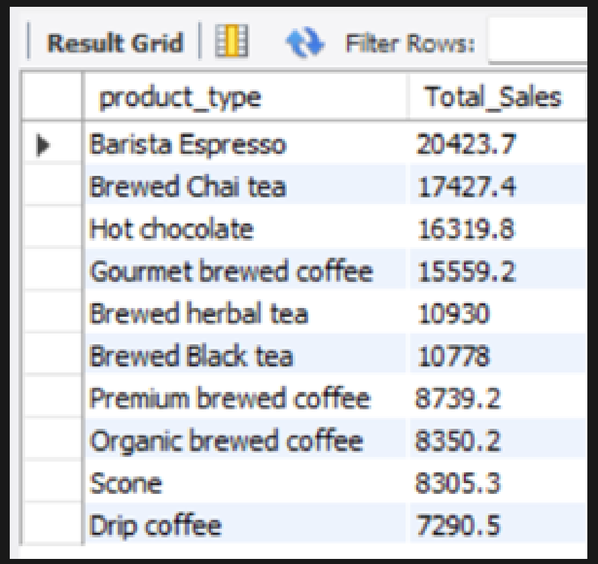


Result Grid | Filter Rows:

product_category	Total_Sales
Coffee	60362.8
Tea	44539.8
Bakery	18565.5
Drinking Chocolate	16319.8
Coffee beans	8768.9
Branded	2889
Loose Tea	2395.2
Flavours	1905.6
Packaged Chocolate	981.1

SALES BY PRODUCT CATEGORY

```
SELECT
	product_category,
	ROUND(SUM(unit_price * transaction_qty),1) as Total_Sales
FROM coffee_shop_sales
WHERE
	MONTH(transaction_date) = 5
GROUP BY product_category
ORDER BY SUM(unit_price * transaction_qty) DESC
```



Result Grid | Filter Rows:

product_type	Total_Sales
Barista Espresso	20423.7
Brewed Chai tea	17427.4
Hot chocolate	16319.8
Gourmet brewed coffee	15559.2
Brewed herbal tea	10930
Brewed Black tea	10778
Premium brewed coffee	8739.2
Organic brewed coffee	8350.2
Scone	8305.3
Drip coffee	7290.5

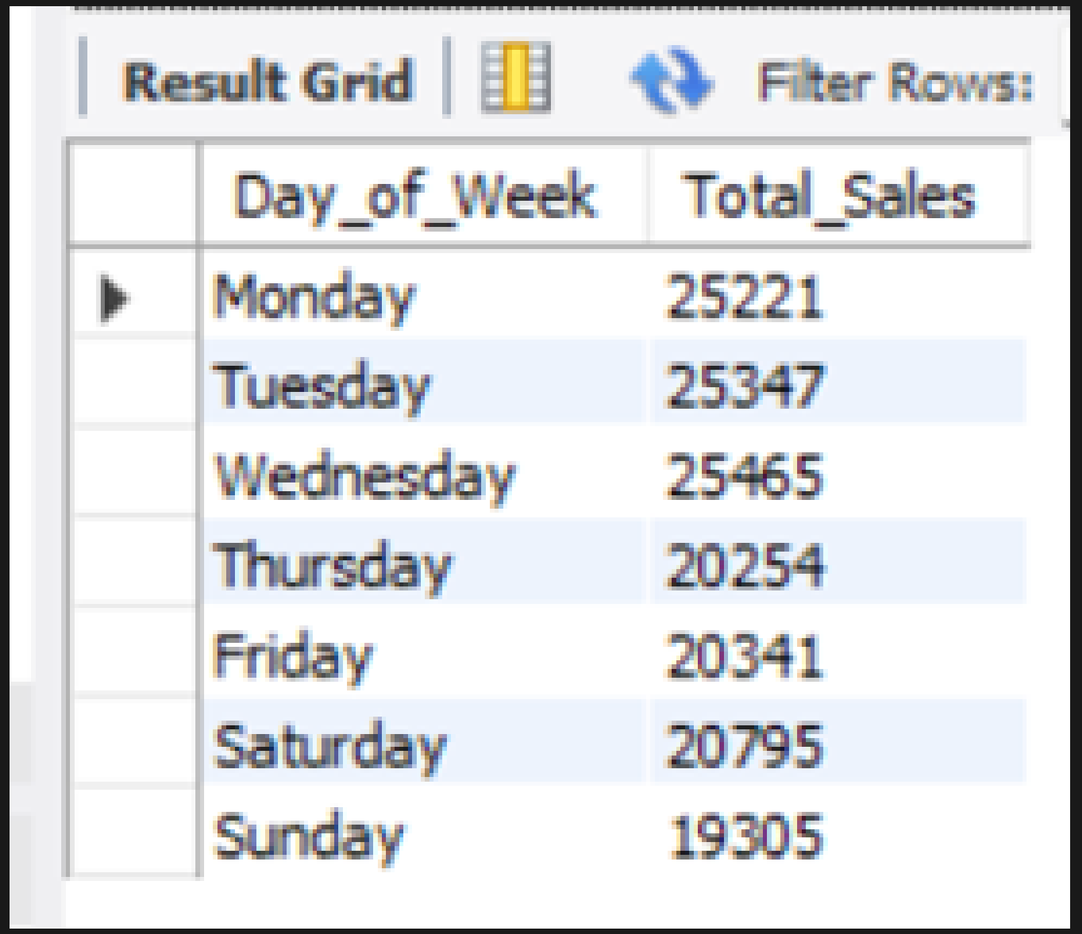
SALES BY PRODUCTS (TOP 10)

```
SELECT COUNT(transaction_id) as Total_Orders
FROM coffee_shop_sales
WHERE MONTH (transaction_date)= 5 -- for month of (CM-May)
```

Queries Used

TO GET SALES FROM MONDAY TO SUNDAY FOR MONTH OF MAY

```
SELECT
  CASE
    WHEN DAYOFWEEK(transaction_date) = 2 THEN 'Monday'
    WHEN DAYOFWEEK(transaction_date) = 3 THEN 'Tuesday'
    WHEN DAYOFWEEK(transaction_date) = 4 THEN 'Wednesday'
    WHEN DAYOFWEEK(transaction_date) = 5 THEN 'Thursday'
    WHEN DAYOFWEEK(transaction_date) = 6 THEN 'Friday'
    WHEN DAYOFWEEK(transaction_date) = 7 THEN 'Saturday'
    ELSE 'Sunday'
  END AS Day_of_Week,
  ROUND(SUM(unit_price * transaction_qty)) AS Total_Sales
FROM
  coffee_shop_sales
WHERE
  MONTH(transaction_date) = 5 -- Filter for May (month number 5)
GROUP BY
  CASE
    WHEN DAYOFWEEK(transaction_date) = 2 THEN 'Monday'
    WHEN DAYOFWEEK(transaction_date) = 3 THEN 'Tuesday'
    WHEN DAYOFWEEK(transaction_date) = 4 THEN 'Wednesday'
    WHEN DAYOFWEEK(transaction_date) = 5 THEN 'Thursday'
    WHEN DAYOFWEEK(transaction_date) = 6 THEN 'Friday'
    WHEN DAYOFWEEK(transaction_date) = 7 THEN 'Saturday'
    ELSE 'Sunday'
  END;
```

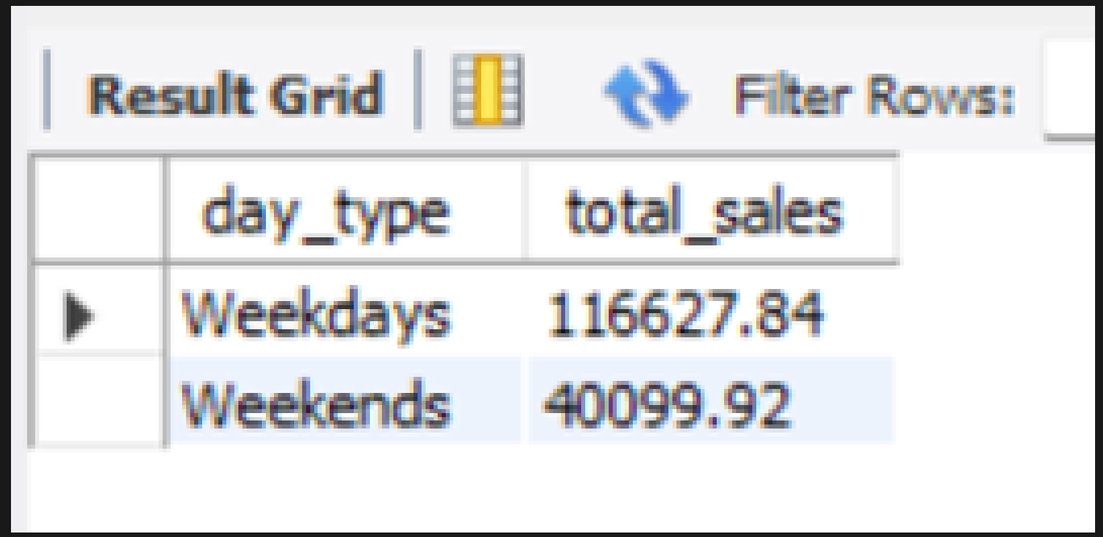


Day_of_Week	Total_Sales
Monday	25221
Tuesday	25347
Wednesday	25465
Thursday	20254
Friday	20341
Saturday	20795
Sunday	19305

Queries Used

SALES BY WEEKDAY / WEEKEND:

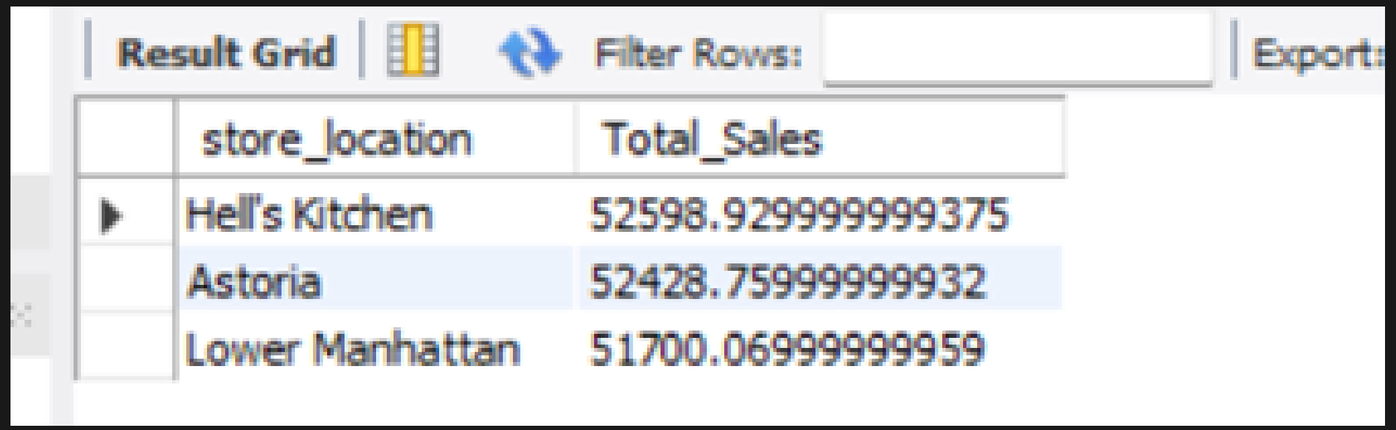
```
SELECT
  CASE
    WHEN DAYOFWEEK(transaction_date) IN (1, 7) THEN 'Weekends'
    ELSE 'Weekdays'
  END AS day_type,
  ROUND(SUM(unit_price * transaction_qty),2) AS total_sales
FROM
  coffee_shop_sales
WHERE
  MONTH(transaction_date) = 5 -- Filter for May
GROUP BY
  CASE
    WHEN DAYOFWEEK(transaction_date) IN (1, 7) THEN 'Weekends'
    ELSE 'Weekdays'
  END;
```



day_type	total_sales
Weekdays	116627.84
Weekends	40099.92

SALES BY STORE LOCATION

```
SELECT
        store_location,
        SUM(unit_price * transaction_qty) as Total_Sales
FROM coffee_shop_sales
WHERE
        MONTH(transaction_date) =5
GROUP BY store_location
ORDER BY        SUM(unit_price * transaction_qty) DESC
```



store_location	Total_Sales
Hell's Kitchen	52598.92999999375
Astoria	52428.7599999932
Lower Manhattan	51700.06999999959

COFFEE SHOP SALES

Sales

FILTER PANEL

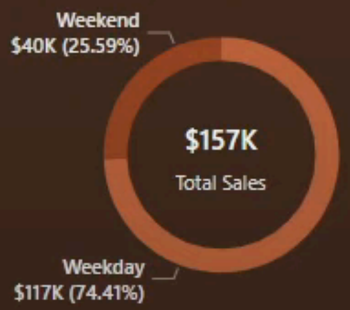
Mont: May 2023

May 2023

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Hover on this visual to see details

Sales by Weekday / Weekend



Sales by Store Location

Hell's Kitchen | $52.60K
▲ +30.5% | +12.3K vs LM

Astoria | $52.43K
▲ +32.8% | +13.1K vs LM

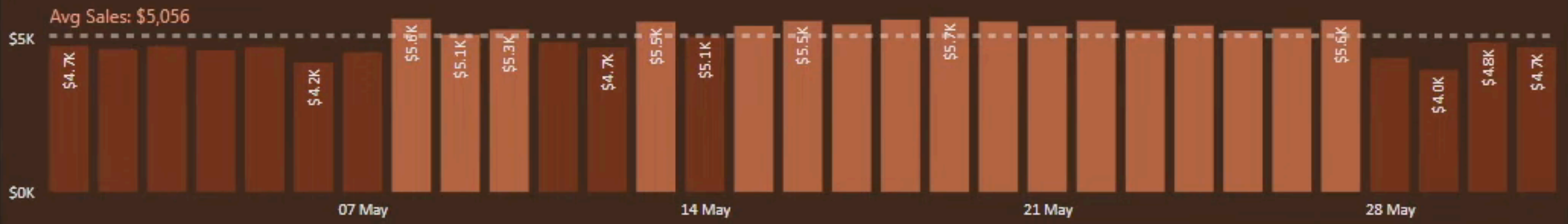
Lower Manhattan | $51.70K

Total Sales
$157K
▲ +31.8% | +37.8K vs LM

Total Orders
33527
▲ +32.3% | +8.2K vs LM

Total Quantity Sold
48233
▲ +32.3% | +11.8K vs LM

Sales Trend Over the Period



Sales by Product Category

Coffee | $60.36K
▲ +31.3%

Tea | $44.54K
▲ +33.5%

Bakery | $18.57K
▲ +32.4%

Drinking Chocolate | $16.32K
▲ +33.0%

Coffee beans | $8.77K
▲ ...

Branded | $2.89K

Loose Tea | $2.40K

Flavours | $1.91K

Sales by Product Category

Barista Espresso | $20.42K
▲ +31.3%

Brewed Chai tea | $17.43K
▲ +31.1%

Hot chocolate | $16.32K
▲ +33.0%

Gourmet brewed coffee | $15.56K
▲ +31.6%

Brewed herbal tea | $10.93K
▲ +35.8%

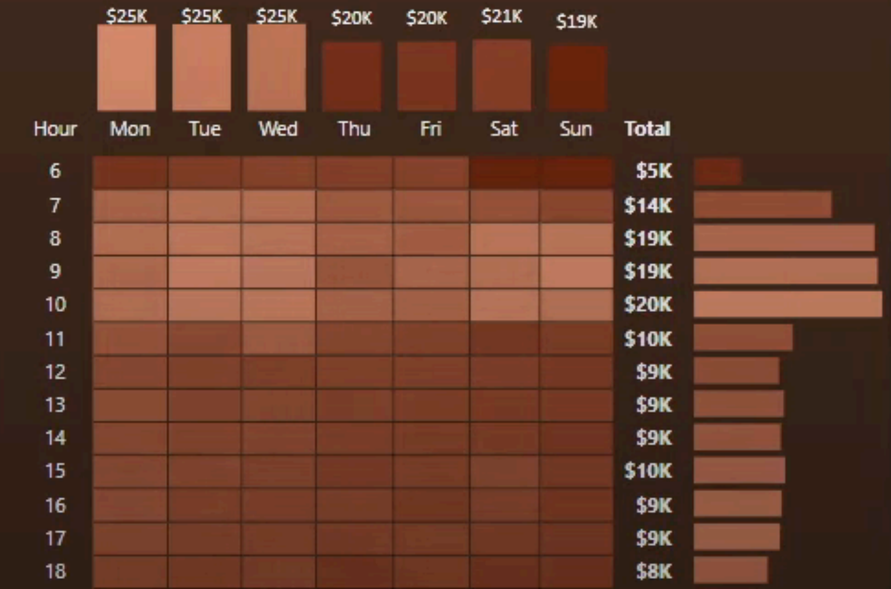
Brewed Black tea | $10.78K
▲ +34.3%

Premium brewed coffee | $8.74K
▲ +33.1%

Organic brewed coffee | $8.35K
▲ +26.3%

Scone | $8.31K
▲ +29.2%

Sales by Days | Hours



Key Performance indicators

1. Key Performance Indicators (KPIs)
   - Total Sales: $157K (+31.8% vs. last month).
   - Total Orders: 33,527 (+32.3% vs. last month).
   - Total Quantity Sold: 48,233 (+32.3% vs. last month).
   - Insight: Both order volume and item quantities per order have grown significantly.

2. Calendar Heatmap
   - A color-coded view of daily sales for May 2023 highlights trends.
   - Darker shades indicate higher sales days.
   - Detailed metrics available for each date by hovering.

3. Sales Distribution: Weekday vs. Weekend
   - 74.41% of sales ($117K) occurred on weekdays; 25.59% ($40K) on weekends.
   - Insight: Weekdays dominate sales. Weekend promotions could help balance sales distribution.

Sales Trends (Daily and Hourly)

- Daily Sales: Average $5,056, with peaks up to $5.7K.
- Hourly Sales (Heatmap): Highest sales are during 8-10 AM, Monday to Wednesday.
- Sales dip on weekends and afternoons, but 9-10 AM sees the strongest performance ($20K).

Sales by Product Categories

- Top-performing categories:
  Coffee: $60.36K (+31%).
  Tea: $44.54K (+33.5%).
  Bakery: $18.57K (+32.4%).

- Insight: Tea and bakery show the fastest growth, presenting expansion opportunities.

Store Location Performance

- Top performing locations:
  Hell's Kitchen: $52.6K (+30.5%).
  Astoria: $52.43K (+32.8%).
  Lower Manhattan: $51.7K (+32.0%).

- Insight: All locations show similar growth, but Hell's Kitchen slightly leads.

Thank you!

For more info about this report, Click on the Link Below:-

Google Drive Link Including all the documents!