

# Analysis: Key Insights and Findings

Coffee Shop Revenue Trends and Behavior  
Analysis

# Key Objectives

The main objectives of this analysis:

- ❖ To understand which products generate the most revenue
- ❖ To understand time intervals at which the store(s) perform best
- ❖ To perform an analysis of sales trends across products and time intervals
- ❖ To propose recommendations to increase and improve sales across all product categories and regions.

# Methodology and Data

## Methodology

- ❖ Understand requirements/needs from top management (CEO's office)
- ❖ Access relevant data to gather insights
- ❖ Perform ETL of raw data and feed this into our Enterprise Data Warehouse (EDW) – task completed by our data engineers.
- ❖ Structured data is stored in our database and organized into a schema.
- ❖ Perform sales and customer behaviour analysis to provide an in-depth analysis of sales trends across different product offerings
- ❖ Use SQL to extract and manipulate the data to create insightful visuals and reporting.

# Methodology and Data

- ❖ Data Sources: Point of Sales System, Inventory Database and Supplier Database
- ❖ Data Cleaning Process: assess table for duplicates and missing data and outliers; standardizing formats to ensure consistency; correcting inaccuracies; handling missing or outlier data by deleting or imputing values; and finally, validating the cleaned data for accuracy.

# Methodology: Time Buckets

```
29  --Query to calculate revenue per product category at different times of the day.
30  ✓ select product_category,
31          SUM(transaction_qty*unit_price) AS revenue,
32          store_location,
33          transaction_date,
34          transaction_time,
35  ✓ CASE
36      When transaction_time between '06:00:00' AND '11:59:59' THEN 'Morning'
37      When transaction_time between '12:00:00' AND '15:59:59' THEN 'Afternoon'
38      When transaction_time between '16:00:00' AND '19:59:59' THEN 'Evening'
39      When transaction_time>='20:00:00' THEN 'Night'
40  END AS time_bucket
41  FROM coffeeshopanalysis
42  GROUP BY product_category, store_location, transaction_date, transaction_time;
```

# Methodology: Time Buckets

```
29 --Query to calculate revenue per product category at different times of the day.
30 select product_category,
```

Add parameter

← Results 7 of 7 → Table + 🔍 🏠 📄 🗑️ ^

	<sup>A</sup> <sub>C</sub> product_category	1.2 revenue	<sup>A</sup> <sub>C</sub> store_location	📅 transaction_date	📅 transaction_time	<sup>A</sup> <sub>C</sub> time_bucket
1	Coffee beans	360	Hell's Kitchen	2023-05-17	2025-10-21T11:18:31.000+00:...	Morning
2	Coffee beans	360	Hell's Kitchen	2023-04-17	2025-10-21T11:18:31.000+00:...	Morning
3	Coffee beans	360	Hell's Kitchen	2023-05-17	2025-10-21T09:05:20.000+00:...	Morning
4	Coffee beans	360	Hell's Kitchen	2023-06-17	2025-10-21T09:55:47.000+00:...	Morning
5	Coffee beans	360	Hell's Kitchen	2023-06-17	2025-10-21T10:41:11.000+00:...	Morning
6	Coffee beans	360	Hell's Kitchen	2023-06-17	2025-10-21T11:18:31.000+00:...	Morning
7	Coffee beans	360	Hell's Kitchen	2023-01-17	2025-10-21T09:05:20.000+00:...	Morning
8	Coffee beans	360	Hell's Kitchen	2023-06-30	2025-10-21T11:18:31.000+00:...	Morning
9	Coffee beans	360	Hell's Kitchen	2023-04-17	2025-10-21T09:55:47.000+00:...	Morning
10	Coffee beans	360	Hell's Kitchen	2023-01-17	2025-10-21T09:55:47.000+00:...	Morning

# Methodology: Date Functions

--Query to visualise revenue per month, per store, per category.

```
SELECT transaction_date,  
       year(transaction_date) AS Year,  
       month(transaction_date) AS Month,  
       monthname(transaction_date) AS month_name,  
       dayname (transaction_date) AS day_name,  
       store_location,  
       sum(transaction_qty*unit_price) AS revenue  
FROM coffeeshopanalysis  
GROUP BY ALL;
```

# Methodology: Date Functions

Add parameter

← Results 8 of 8 → Table + 🔍 ⌵ 📄 🗑️ ^

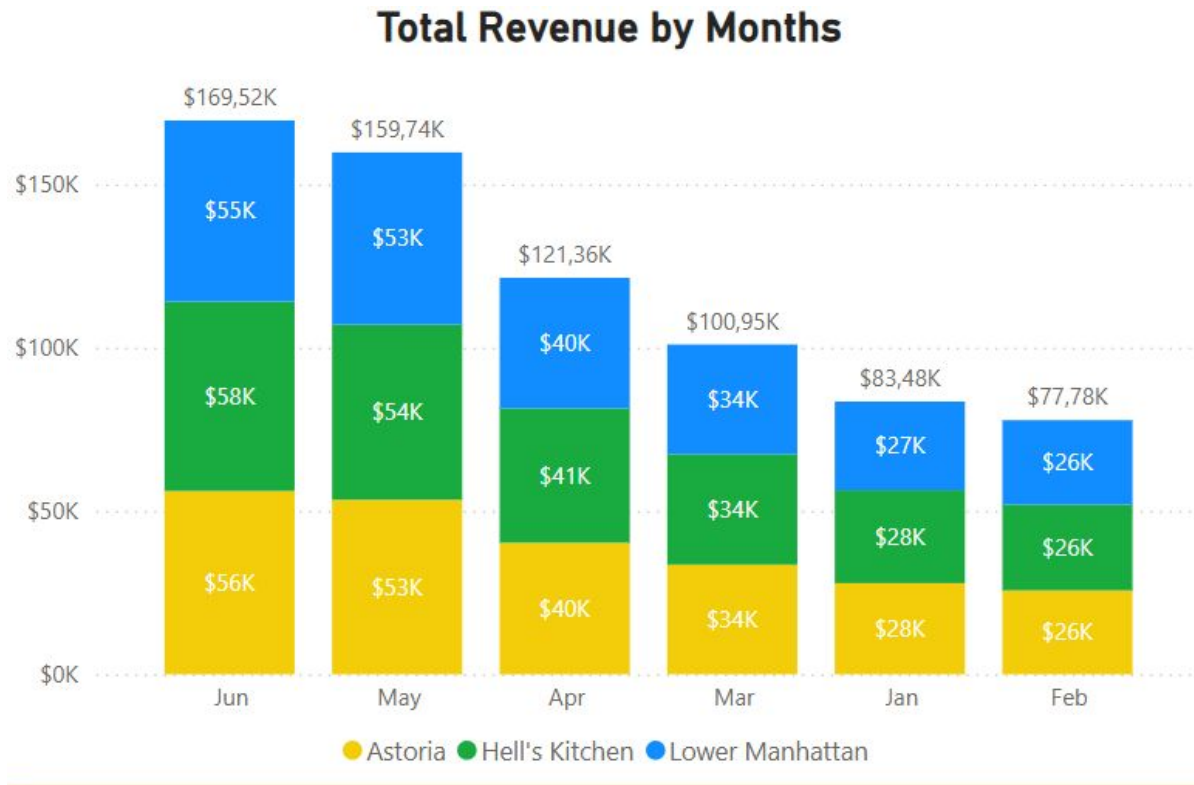
	 transaction_date	<sup>1</sup> <sub>3</sub> Year	<sup>1</sup> <sub>3</sub> Month	<sup>A</sup> <sub>C</sub> month_name	<sup>A</sup> <sub>C</sub> day_name	<sup>A</sup> <sub>C</sub> store_location	1.2 revenue
1	2023-01-01	2023	1	Jan	Sun	Lower Manhattan	788.35
2	2023-01-01	2023	1	Jan	Sun	Hell's Kitchen	851.45
3	2023-01-01	2023	1	Jan	Sun	Astoria	868.4
4	2023-01-02	2023	1	Jan	Mon	Lower Manhattan	649.05
5	2023-01-02	2023	1	Jan	Mon	Hell's Kitchen	828.8
6	2023-01-02	2023	1	Jan	Mon	Astoria	925.5
7	2023-01-03	2023	1	Jan	Tue	Lower Manhattan	756
8	2023-01-03	2023	1	Jan	Tue	Hell's Kitchen	906.25
9	2023-01-03	2023	1	Jan	Tue	Astoria	902.75
10	2023-01-04	2023	1	Jan	Wed	Lower Manhattan	630.2
11	2023-01-04	2023	1	Jan	Wed	Hell's Kitchen	781.55



# Exploratory Data Analysis (EDA)

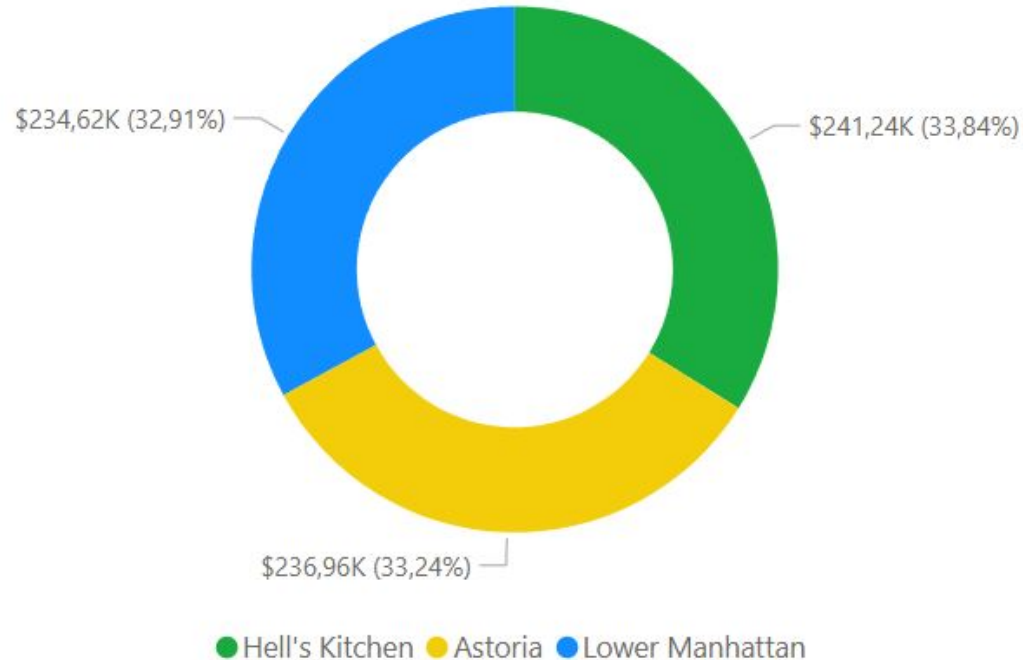
- ❖ Visualizations reveal patterns, trends, or initial insights:
- ★ Sales by Revenue Over Time
- ★ Revenue Distribution by Store Location and Quantity Sold
- ★ Customer Behaviour and Patterns
- ★ Product Category Insights

# Revenue Over Time - Figure 1

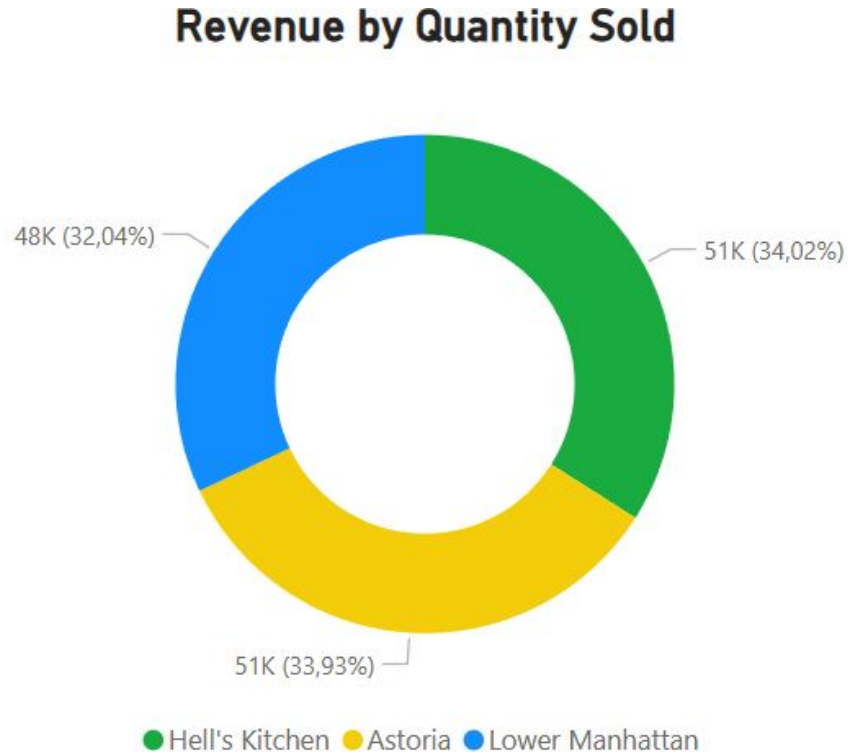


# Revenue Distribution by Store Location - Figure 2

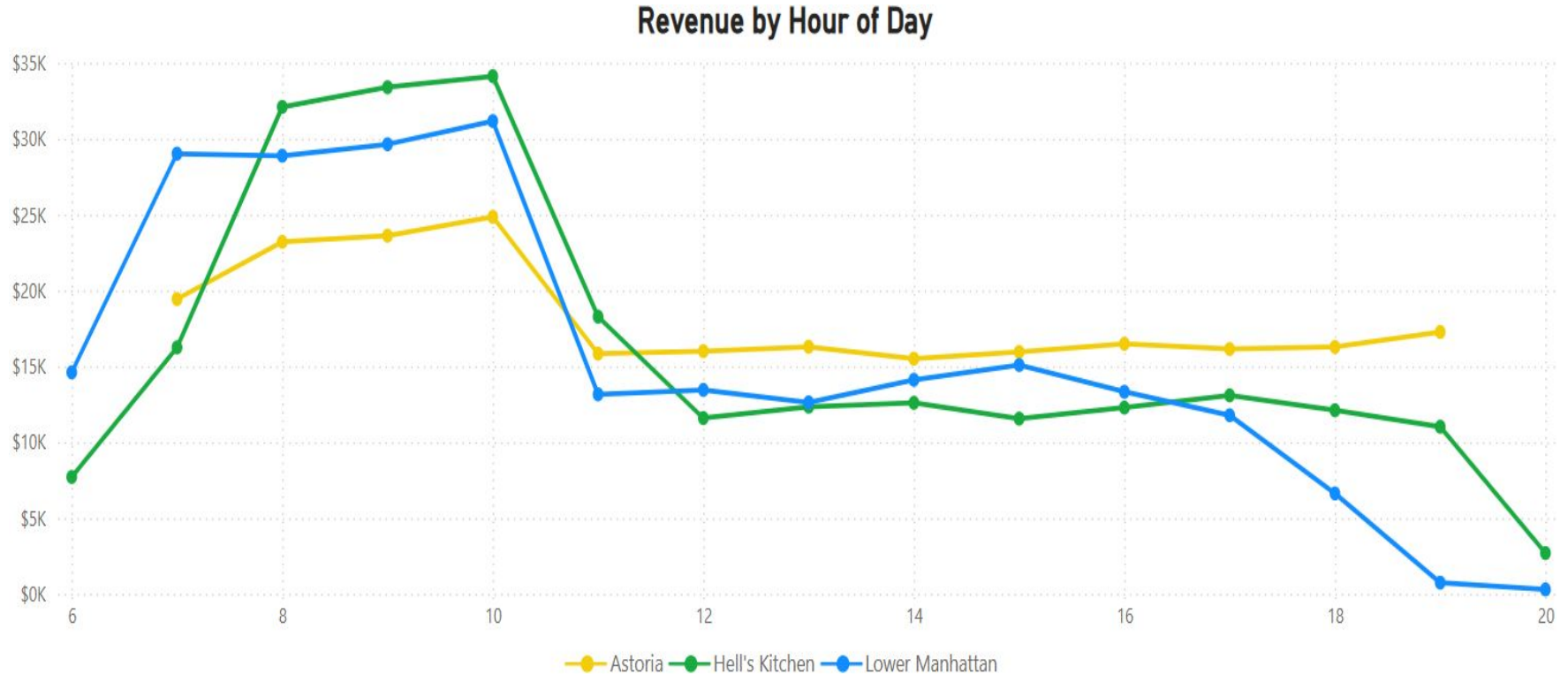
Revenue Distribution by Store Location



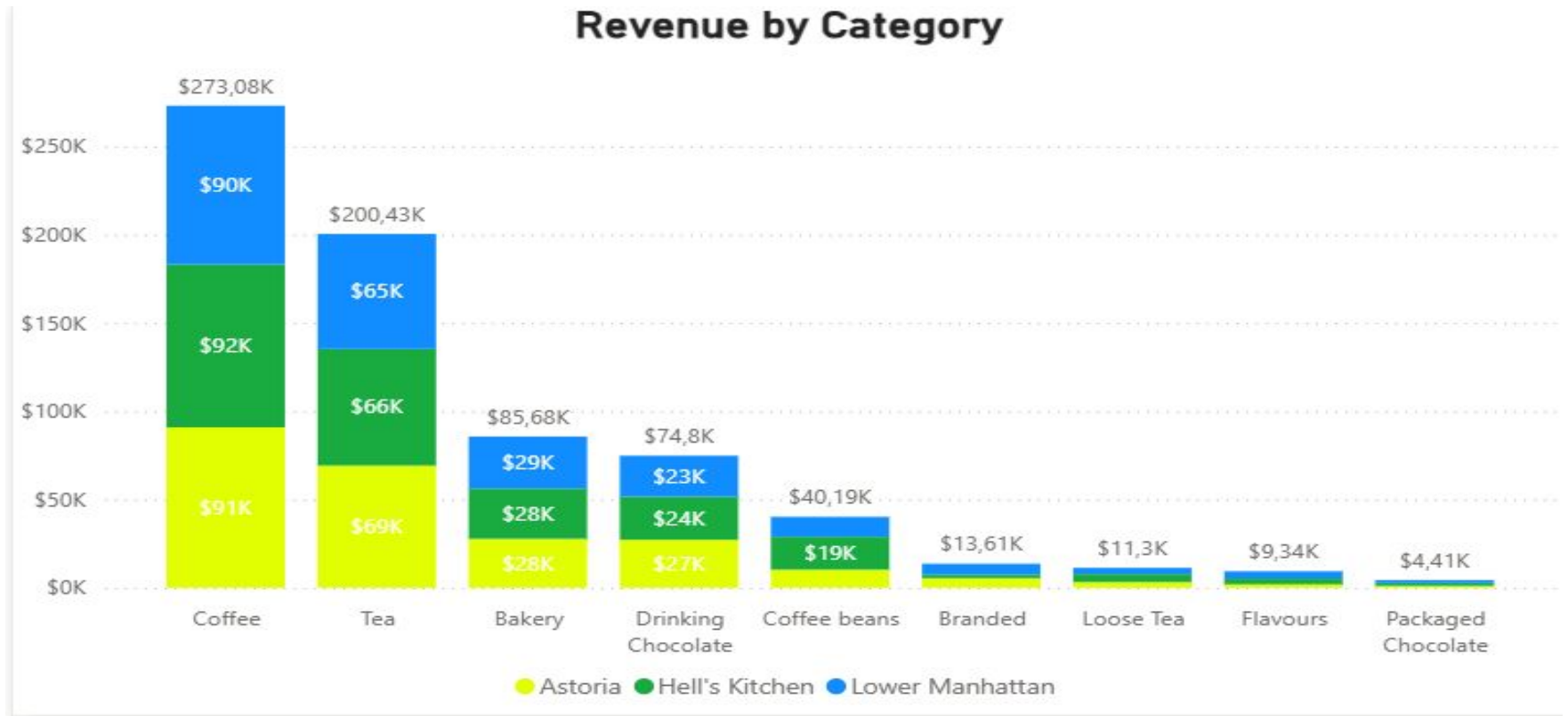
## Revenue by Quantity Sold - Figure 3



# Revenue by Hour of Day - Figure 4



## Revenue by Product Category - Figure 5



# Strategic Recommendations

**Sales Trends Over Time:** Sales grew consistently over time – significant seasonal demand shifts or targeted and effective promotional efforts at the beginning of the year.

- ★ Potential to Increase Sales through A Customer Loyalty Program, Upsell and bundle: offer combo deals like a coffee and pastry for a fixed price and/or reward repeat customers with points/discounts after a number of certain purchases.

**Revenue by Category:** Coffee and Tea (primary revenue drivers) and Loose Tea and Packaged Chocolate (poor sales, about 2.8% of total revenue).

- ★ Recommendation: remove the products off our shelves (loose tea) and sell packaged chocolate as part of a combo deal (coffee, pastry and snack) to drive sales, at a fixed price.

## Encourage Bulk Purchases

- ★ per our analysis, most transactions involve one or two items, boost sales through combo deals, upselling strategies and/or multi-items promotions.

## Leverage Peak Hours to Optimize Revenue

- ★ the busiest hours between 8 and 10 am present opportunities to maximize revenue premium pricing and exclusive morning deals.