



Maven Roasters

Maven Roasters: Coffee Shop Sales

by. Siti Hafsoh

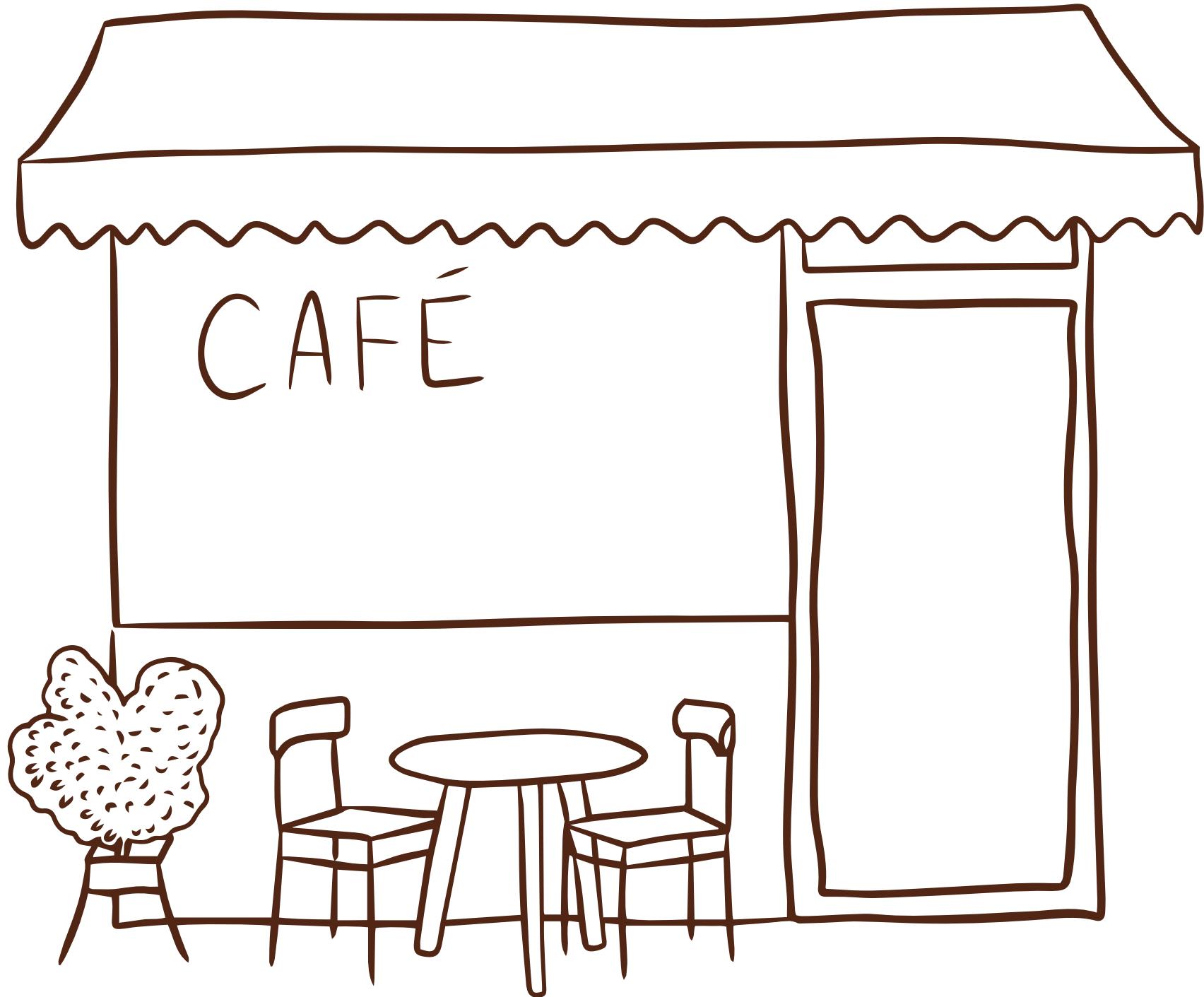
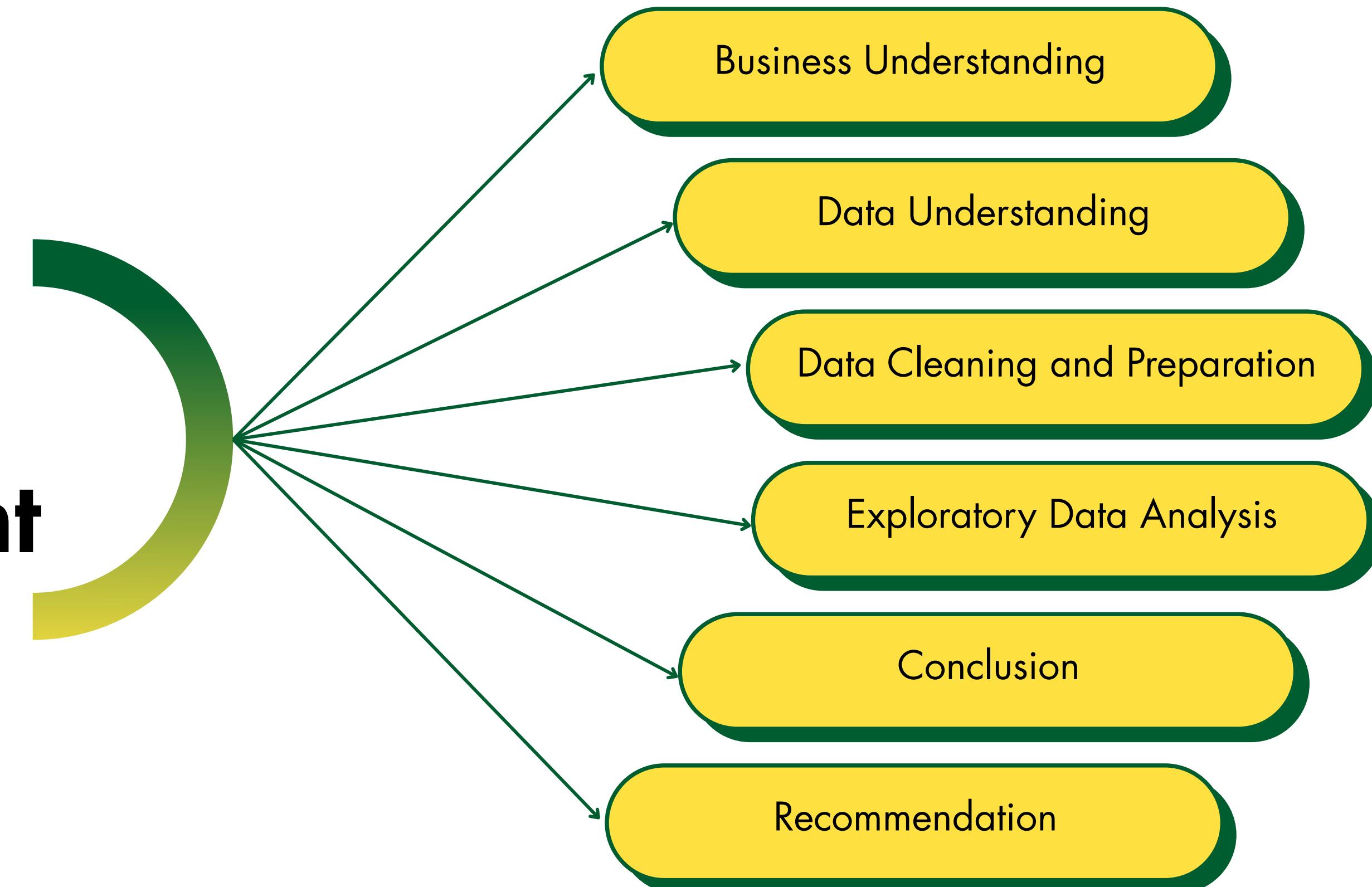




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Business Understanding





About Maven Roasters

Maven Roasters is a coffee shop chain with three locations in New York City: Astoria, Hell's Kitchen, and Lower Manhattan. We offer a wide variety of products across nine categories, including coffee, tea, drinking chocolate, bakery items, flavors, loose tea, coffee beans, packaged chocolate, and branded merchandise.





Stakeholder

1. Maven Roasters's Franchise Owner
2. Operations & Branch Management Division





Problem Statement

The analysis seeks to identify and understand patterns in revenue and transaction fluctuations over time, pinpointing any periods of decline. It also aims to uncover performance disparities among branches, determine unique customer behavior patterns by day and hour, and identify both underperforming and top-selling product categories to optimize overall business operations.





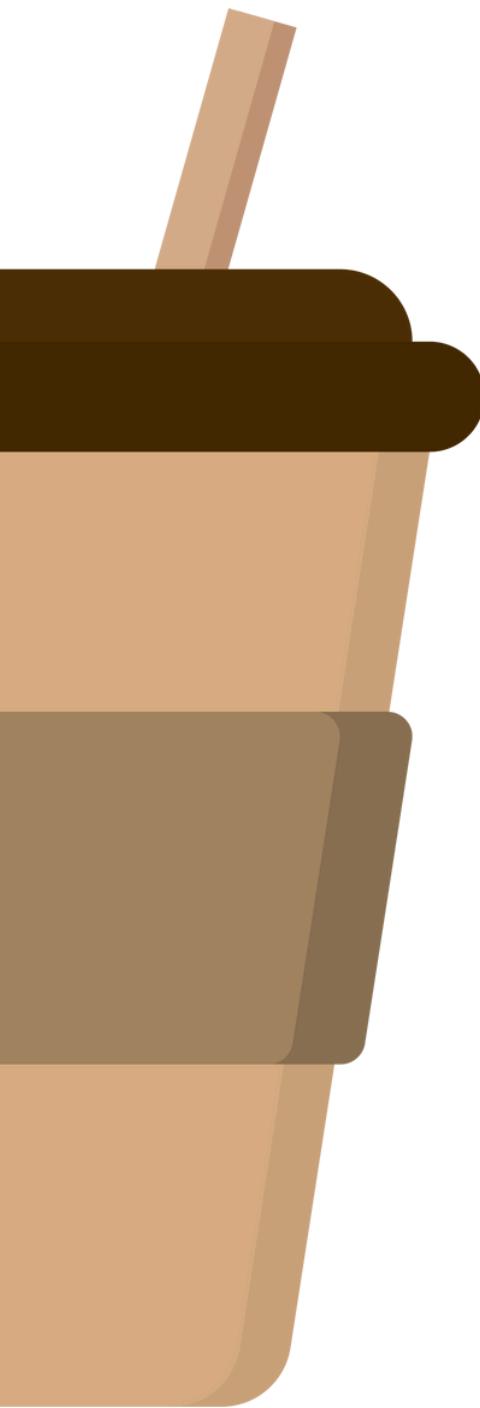
Objectives

- To better understand purchase behavior and streamline operations using collected transactional data from Jan-Jun 2023.
- To transform the data into a dynamic dashboard that franchise owners can use to identify patterns, trends and opportunities for the business.



Data Understanding





Maven Roasters

149.116

Records of Data

11

Variables





Variables

Column Name	Description
transaction_id	Unique purchase identifier.
transaction_date	Purchase date.
transaction_time	Purchase time.
transaction_qty	Items purchased.
store_id	Store identifier.





store_location	Store location.
product_id	Product identifier.
unit_price	Product price.
product_category	Product category (e.g., coffee).
product_type	Specific product type (e.g., drip coffee).
product_detail	Further product details.



Data Cleaning & Preparation





Data Cleaning

- Whitespace: Removed using TRIM function.
- **Missing Values: None found** (checked with COUNTBLANK).
- **Duplicates: None found** (removed using "Remove Duplicates").
- **Invalid Data: None found** (checked with Sort & Filter).





Data Preparation

To prepare the data for enhanced analysis, the following columns were added:

- **revenue**: Calculated by multiplying "unit_price" and "transaction_qty".
- **month**: Extracted numerically from "transaction_date" using the MONTH function.
- **month name**: Extracted as text from "transaction_date" using the TEXT function.
- **weekday**: Extracted numerically from "transaction_date" using the WEEKDAY function.
- **weekday name**: Extracted as text from the "weekday" column using the TEXT function.
- **hour**: Extracted from "transaction_time" using the HOUR function.

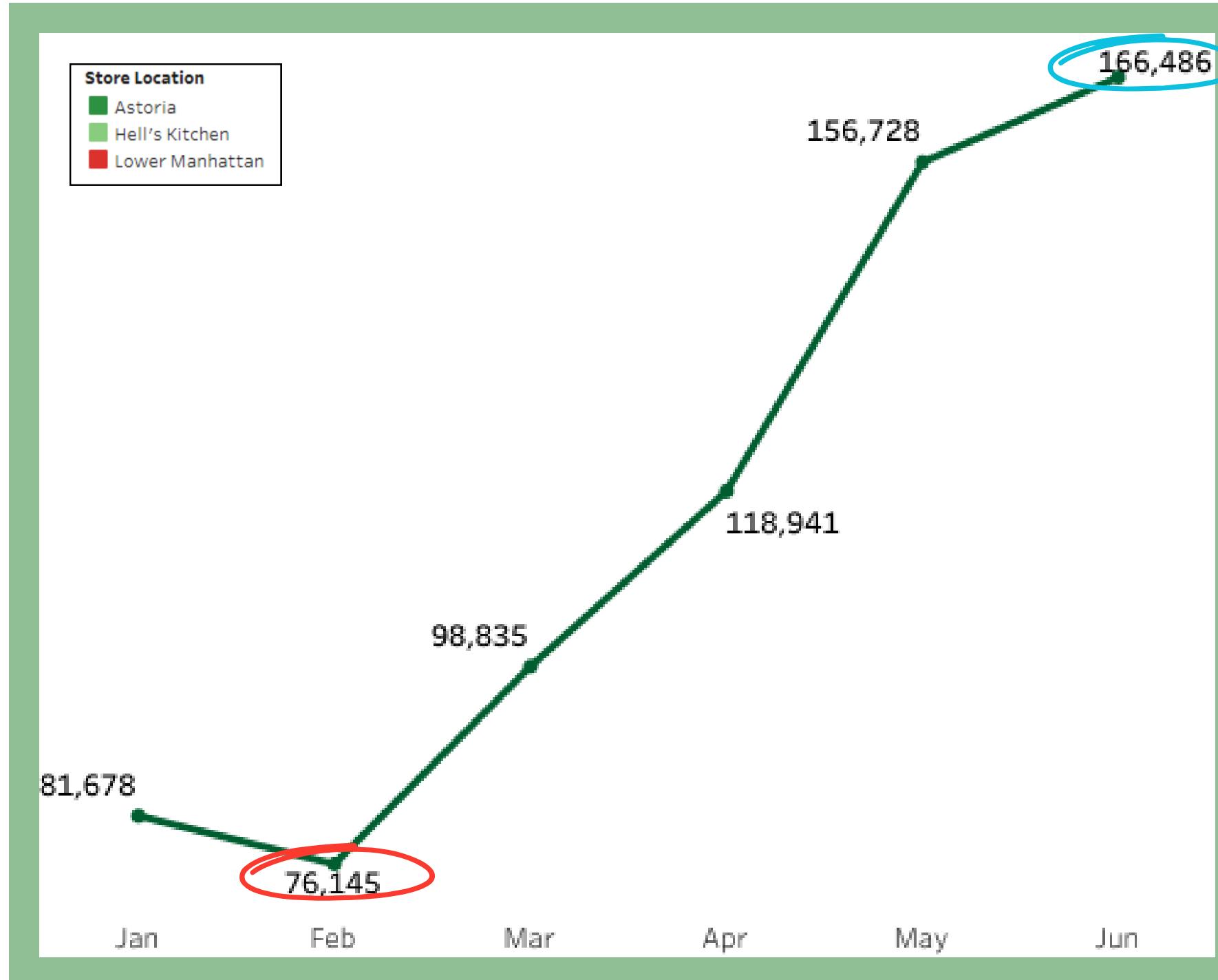


Exploratory Data Analysis





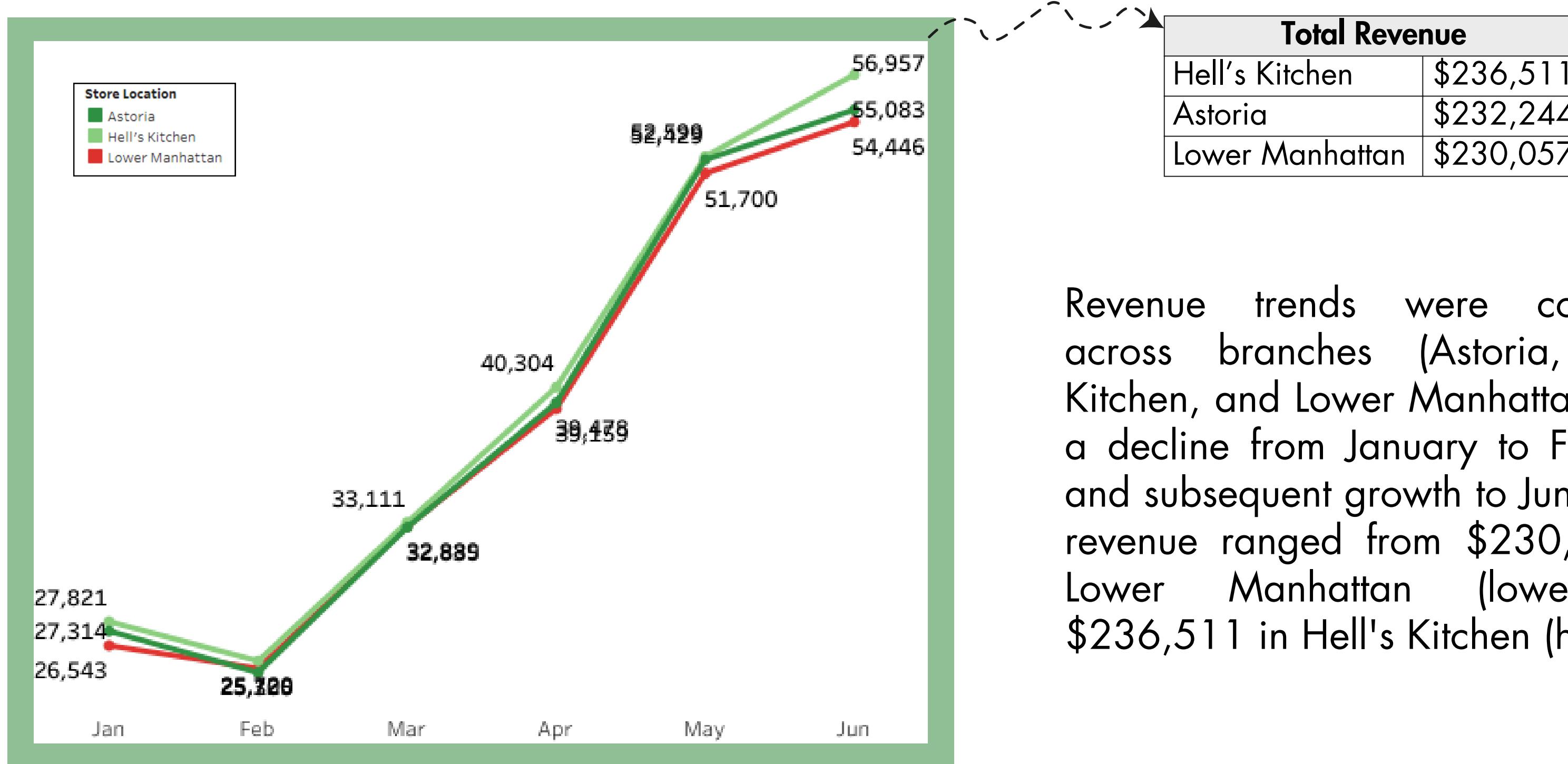
Revenue



The business experienced its lowest revenue in February (\$76,145), a decline from January. From February onwards, revenue increased consistently, culminating in the highest point of \$166,486 in June.



Revenue

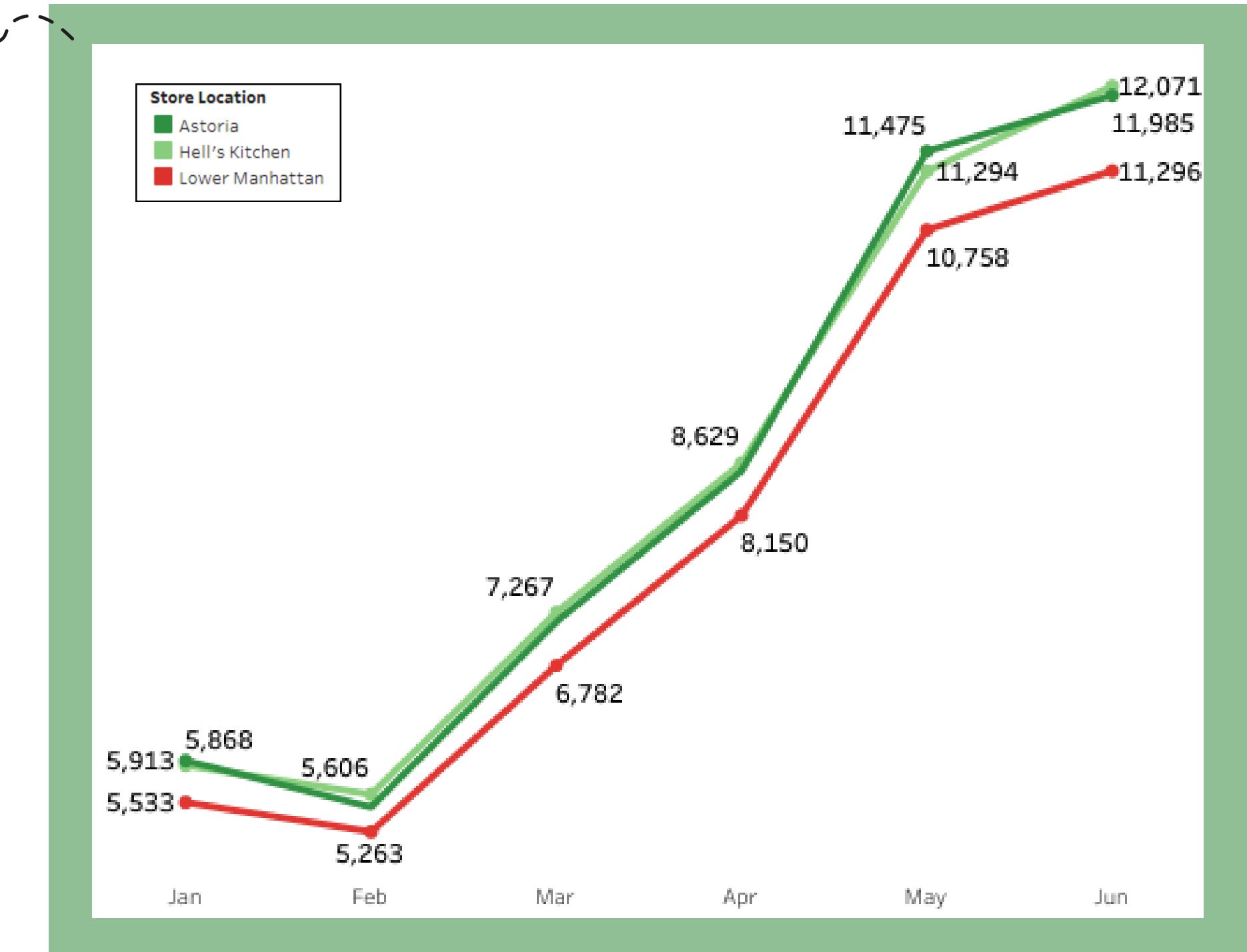




Transaction

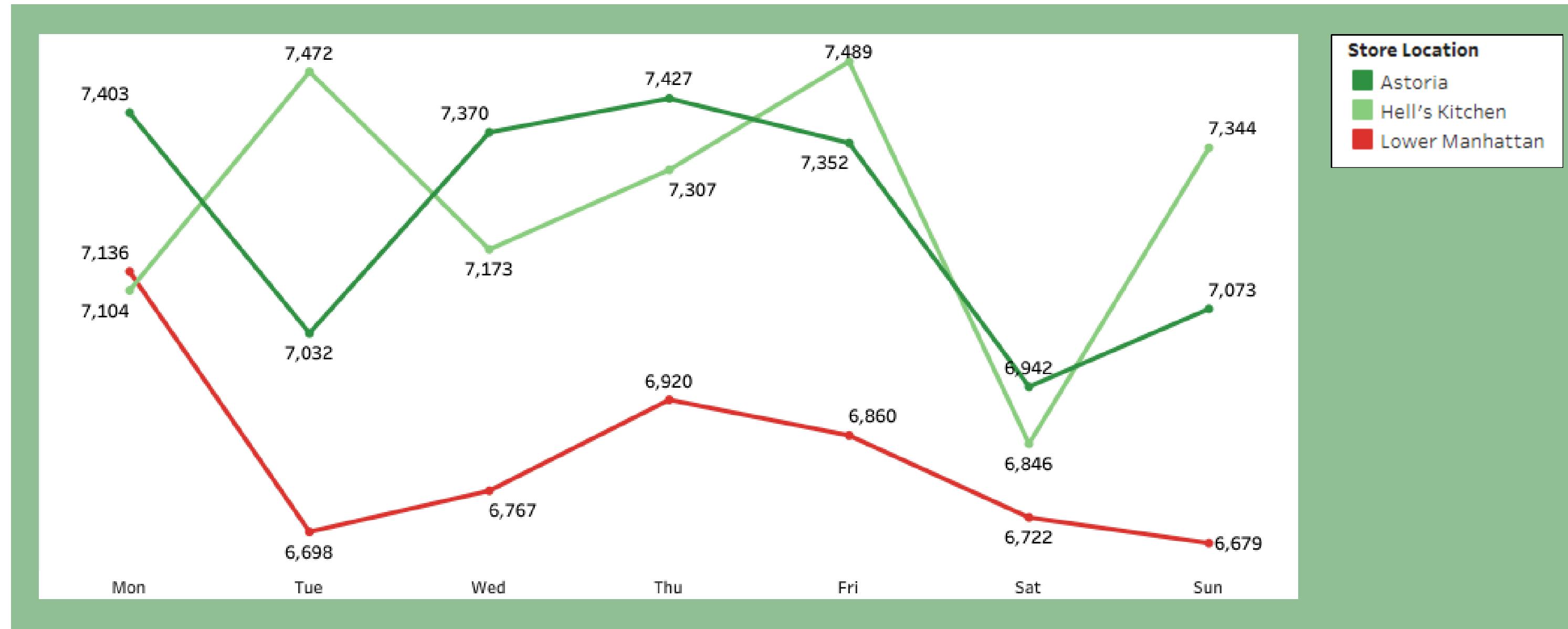
Total Transaction	
Hell's Kitchen	50,735
Astoria	50,599
Lower Manhattan	47,782

Transaction trends are consistent across branches, with a decline from January to February and subsequent growth to June. Lower Manhattan recorded the lowest transaction volume (47,782), while Hell's Kitchen recorded the highest (50,735).





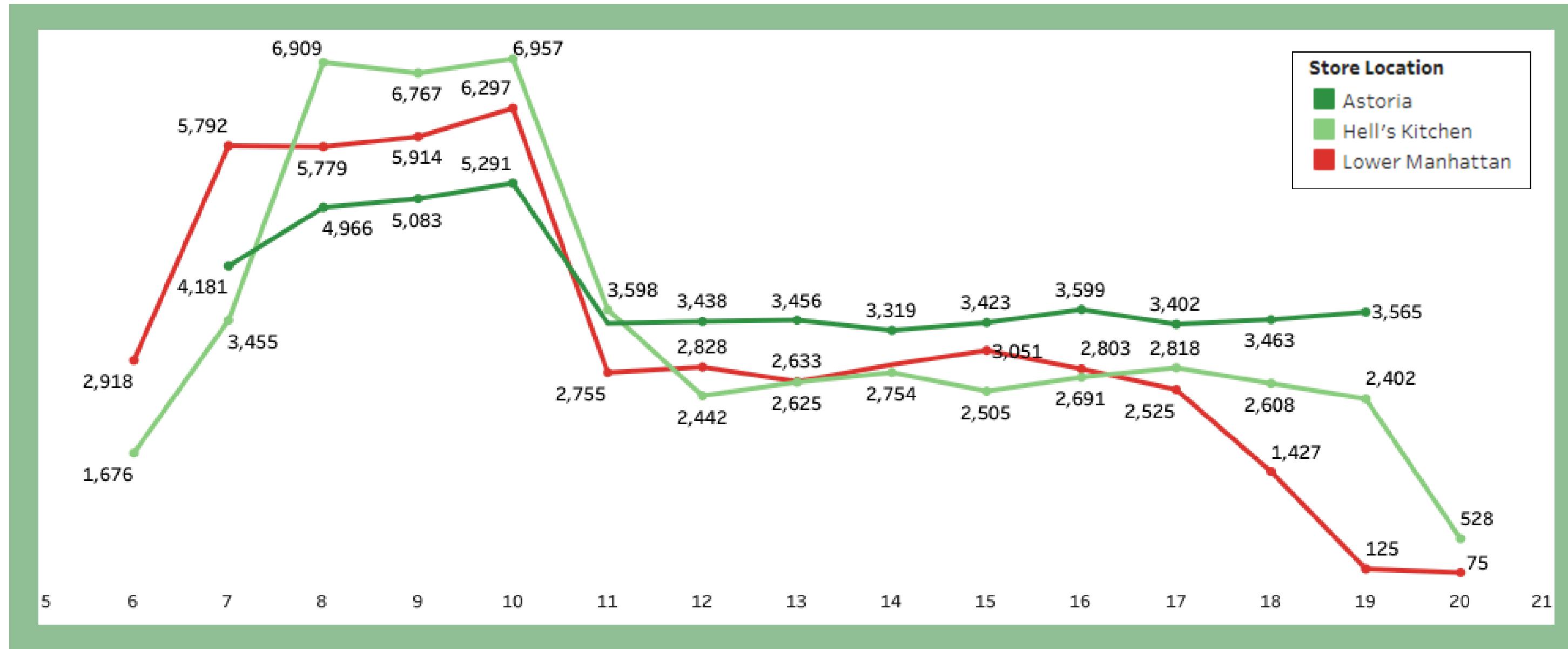
Transaction by Day of Week



Each branch displays unique customer behavior across the week. Astoria sees high activity on Monday, Wednesday, Thursday, and Friday; Hell's Kitchen's on Tuesday, Thursday, Friday, and Sunday; and Lower Manhattan's on Monday, Thursday, and Friday. Overall, Lower Manhattan has the lowest transaction volume, with most days below 7,000.



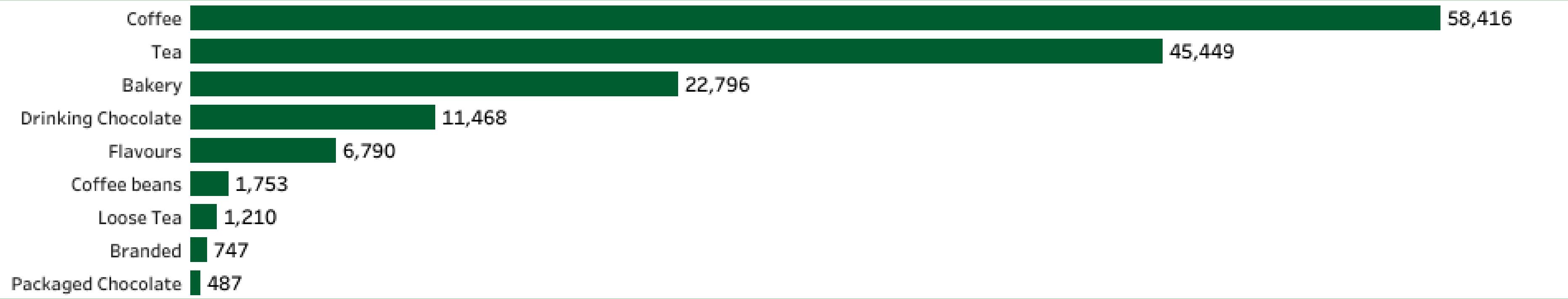
Transaction by Hour of Week



Transaction volume follows a similar pattern across branches, with a morning surge (6-10 am) and a significant drop (around 50%) from 11 am onward. Lower Manhattan's activity winds down earlier, starting at 6 pm, compared to 8 pm for the other branches.



Transaction by Product Category



Transactions are concentrated in categories like Coffee, Tea, Bakery, Drinking Chocolate, and Flavours, while other product categories show considerably less activity. Notably, Branded and Packaged Chocolate have very low transaction volumes, totaling less than 1,000 in six months.



Top 15 Astoria Branch's Product

Product Type	Astoria
Brewed Chai tea	6,293
Gourmet brewed coffee	6,053
Barista Espresso	4,930
Hot chocolate	4,300
Brewed herbal tea	4,008
Brewed Black tea	3,979
Scone	3,205
Drip coffee	3,118
Premium brewed coffee	3,008
Organic brewed coffee	2,916
Pastry	2,203
Brewed Green tea	1,980
Biscotti	1,881
Regular syrup	1,111
Sugar free syrup	379

Astoria's product performance is concentrated in items like Brewed Chai Tea, Gourmet Brewed Coffee, and Barista Espresso. The table shows a clear drop-off in sales after the top 15, as products from Sugar Free Syrup onwards, have sales below 1,000.



Top 15 Hell's Kitchen Branch's Product

Product Type	Hell's Kitchen
Barista Espresso	6,153
Brewed Chai tea	5,824
Gourmet brewed coffee	5,642
Hot chocolate	3,763
Brewed Black tea	3,760
Brewed herbal tea	3,702
Scone	3,462
Organic brewed coffee	2,998
Drip coffee	2,884
Premium brewed coffee	2,510
Pastry	2,300
Brewed Green tea	1,991
Biscotti	1,855
Regular syrup	1,768
Sugar free syrup	602

Hell's Kitchen's product performance is concentrated in items like Barista Espresso, Brewed Chai Tea and Gourmet Brewed Coffee. The table shows a clear drop-off in sales after the top 15, as products from Sugar Free Syrup onwards, have sales below 1,000.



Top 15 Lower Manhattan Branch's Product

Product Type	Lower Manhattan
Barista Espresso	5,320
Gourmet brewed coffee	5,217
Brewed Chai tea	5,066
Brewed Black tea	3,611
Brewed herbal tea	3,535
Scone	3,506
Hot chocolate	3,405
Premium brewed coffee	2,617
Organic brewed coffee	2,575
Drip coffee	2,475
Pastry	2,409
Regular syrup	2,100
Biscotti	1,975
Brewed Green tea	1,700
Sugar free syrup	830

Lower Manhattan's product performance is concentrated in items like Barista Espresso, Gourmet Brewed Coffee and Brewed Chai Tea. The table shows a clear drop-off in sales after the top 15, as products from Sugar Free Syrup onwards, have sales below 1,000.

Conclusion



General Performance and Trends

- The business experienced a general revenue and transaction dip in February, but strongly recovered and grew through June across all branches.
- Morning hours (6-10 am) are the busiest across all branches.

Branch-Specific Observations

- Lower Manhattan consistently underperforms compared to Astoria and Hell's Kitchen, exhibiting the lowest revenue and transaction volumes, and earlier decline in daily transactions.
- Each branch has unique peak transaction days: Astoria (Mon, Wed, Thurs, Fri), Hell's Kitchen (Tue, Thurs, Fri, Sun), and Lower Manhattan (Mon, Thurs, Fri)

Product Performance

- Coffee, Tea, Bakery, Drinking Chocolate, and Flavours are the most popular product categories.
- A similar pattern in product preference is observed across all branches, with Brewed Chai Tea, Gourmet Brewed Coffee, and Barista Espresso being top performers.
- The product that not listed in table above have very low sales.



Recommendation



Revenue & Transactions

1. **Investigate February Dip:** Determine the cause of the February decline in revenue and transactions across all branches. Was it due to seasonality, a specific event, or other factors?
2. **Optimize Lower Manhattan:** Analyze why Lower Manhattan consistently underperforms. Is it location, competition, or a different customer base? Implement targeted strategies to boost revenue and transactions at this branch.
3. **Leverage Morning Peak:** Since 6-10 am is the busiest time, consider strategies to maximize revenue during this period, such as:
 - a. Promoting breakfast combos or special offers
 - b. Ensuring adequate staffing and quick service
4. **Smooth out daily transactions in Lower Manhattan Branch:** Consider making promotion or discount in the quiet days for Lower Manhattan

Product Strategy

1. **Promote Top Sellers:** Continue to focus on promoting Coffee, Tea, and Bakery items, as they are the most popular. Consider expanding the offerings within these categories.
2. **Evaluate Underperforming Categories:** Analyze why some underperforming products have low sales. Consider:
 - a. Repositioning or rebranding these products
 - b. Changing the pricing strategy
 - c. Discontinuing them if they are not profitable
3. **Optimize Product Mix:** Since the top 15 products in each branch (Astoria, Hell's Kitchen, and Lower Manhattan) drive the majority of sales, ensure these items are always well-stocked and prominently displayed.

Branch-Specific Strategies

1. **Astoria:** Capitalize on high activity on Monday, Wednesday, Thursday, and Friday.
2. **Hell's Kitchen:** Focus on maintaining momentum on Tuesday, Thursday, Friday, and Sunday.
3. **Lower Manhattan:** Develop strategies to increase customer traffic on Tuesdays, Wednesdays, Saturdays, and Sundays, which are currently quieter.

Thank You

