Coffee Shop Sales Analysis

By : Almaidah
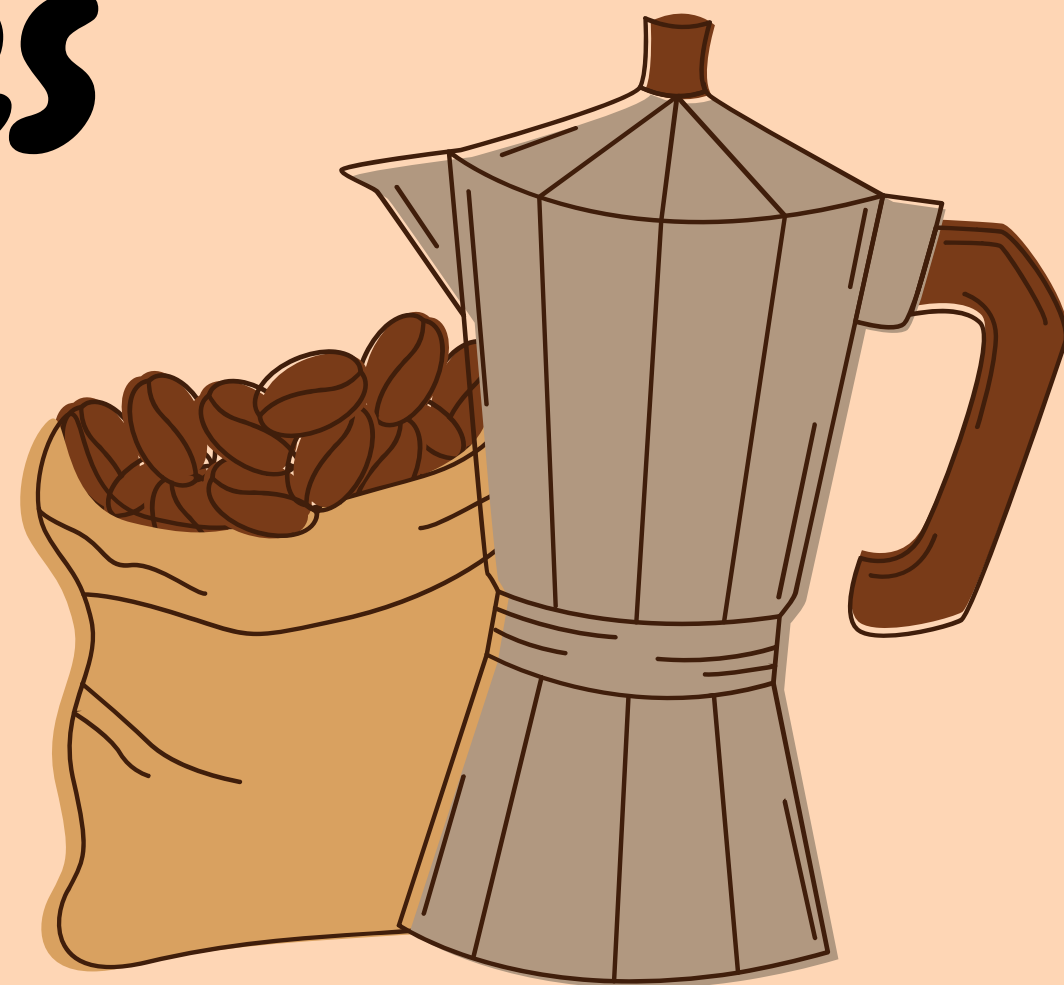
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Introduction

Overview

The data is taken from the Maven Analytics project, which contains 10 columns and 149,118 rows. The project begins with a thorough examination of the coffee shop dataset to ensure data quality and add relevant date and time calculations. Next, the focus shifts to using Excel PivotTables to analyze trends based on time and product. Finally, the findings are visualized with interactive Pivot Charts to derive actionable insights and provide valuable recommendations for the coffee shop
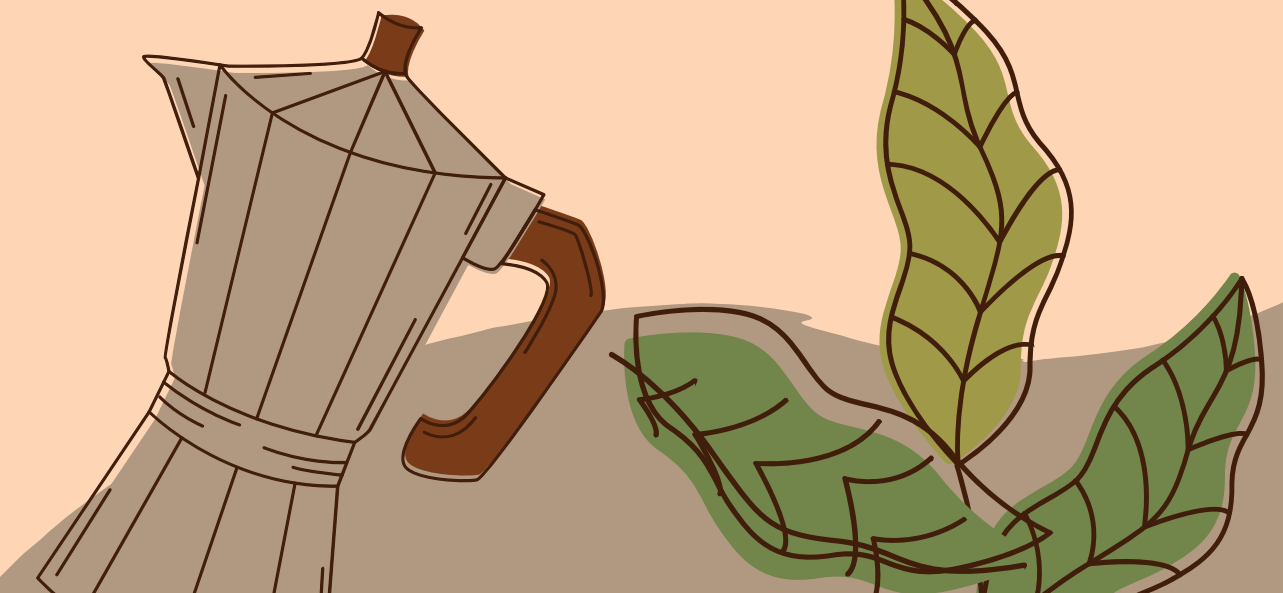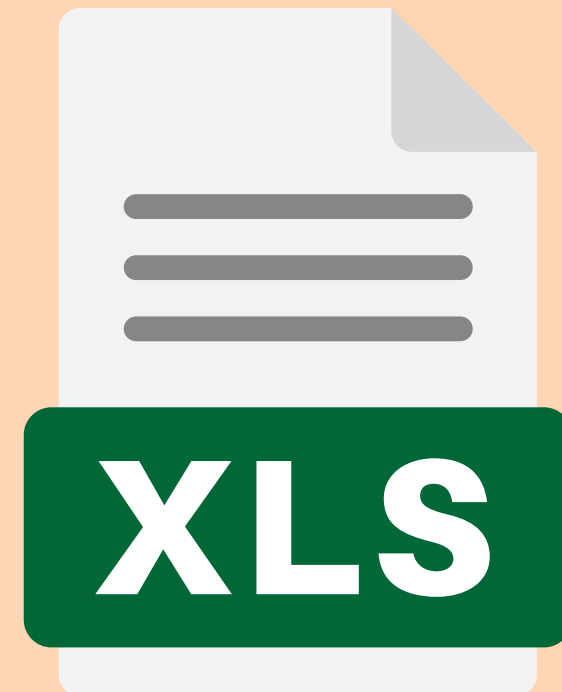
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Data Description

Data Preparation

transaction_id	transaction_date	transaction_time	transaction_qty	store_id	store_location	product_id	unit_price	product_category	product_type	product_detail	revenue
1	01/01/2023	07:06:11	2	5	Lower Manhattan	32	3	Coffee	Gourmet brewed coffee	Ethiopia Rg	6
2	01/01/2023	07:08:56	2	5	Lower Manhattan	57	3,1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg	6,2
3	01/01/2023	07:14:04	2	5	Lower Manhattan	59	4,5	Drinking Chocolate	Hot chocolate	Dark chocolate Lg	9
4	01/01/2023	07:20:24	1	5	Lower Manhattan	22	2	Coffee	Drip coffee	Our Old Time Diner Blend Sm	2
5	01/01/2023	07:22:41	2	5	Lower Manhattan	57	3,1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg	6,2
6	01/01/2023	07:22:41	1	5	Lower Manhattan	77	3	Bakery	Scone	Oatmeal Scone	3
7	01/01/2023	07:25:49	1	5	Lower Manhattan	22	2	Coffee	Drip coffee	Our Old Time Diner Blend Sm	2
8	01/01/2023	07:33:34	2	5	Lower Manhattan	28	2	Coffee	Gourmet brewed coffee	Columbian Medium Roast Sm	4
9	01/01/2023	07:39:13	1	5	Lower Manhattan	39	4,25	Coffee	Barista Espresso	Latte Rg	4,25
10	01/01/2023	07:39:34	2	5	Lower Manhattan	58	3,5	Drinking Chocolate	Hot chocolate	Dark chocolate Rg	7
11	01/01/2023	07:43:05	1	5	Lower Manhattan	56	2,55	Tea	Brewed Chai tea	Spicy Eye Opener Chai Rg	2,55
12	01/01/2023	07:44:35	2	5	Lower Manhattan	33	3,5	Coffee	Gourmet brewed coffee	Ethiopia Lg	7
13	01/01/2023	07:45:51	1	5	Lower Manhattan	51	3	Tea	Brewed Black tea	Earl Grey Lg	3
14	01/01/2023	07:48:19	1	5	Lower Manhattan	57	3,1	Tea	Brewed Chai tea	Spicy Eye Opener Chai Lg	3,1
15	01/01/2023	07:52:36	2	5	Lower Manhattan	87	3	Coffee	Barista Espresso	Ouro Brasileiro shot	6
16	01/01/2023	07:59:58	2	5	Lower Manhattan	47	3	Tea	Brewed Green tea	Serenity Green Tea Lg	6
17	01/01/2023	07:59:58	1	5	Lower Manhattan	79	3,75	Bakery	Scone	Jumbo Savory Scone	3,75
18	01/01/2023	08:00:18	1	8	Hell's Kitchen	42	2,5	Tea	Brewed herbal tea	Lemon Grass Rg	2,5
19	01/01/2023	08:00:39	2	8	Hell's Kitchen	59	4,5	Drinking Chocolate	Hot chocolate	Dark chocolate Lg	9
20	01/01/2023	08:11:45	1	8	Hell's Kitchen	61	4,75	Drinking Chocolate	Hot chocolate	Sustainably Grown Organic Lg	4,75
21	01/01/2023	08:17:27	2	8	Hell's Kitchen	33	3,5	Coffee	Gourmet brewed coffee	Ethiopia Lg	7
22	01/01/2023	08:24:26	2	5	Lower Manhattan	56	2,55	Tea	Brewed Chai tea	Spicy Eye Opener Chai Rg	5,1
23	01/01/2023	08:24:26	1	5	Lower Manhattan	69	3,25	Bakery	Biscotti	Hazelnut Biscotti	3,25
24	01/01/2023	08:29:38	1	8	Hell's Kitchen	56	2,55	Tea	Brewed Chai tea	Spicy Eye Opener Chai Rg	2,55
25	01/01/2023	08:31:23	1	8	Hell's Kitchen	40	3,75	Coffee	Barista Espresso	Cappuccino	3,75
26	01/01/2023	08:33:08	1	5	Lower Manhattan	43	3	Tea	Brewed herbal tea	Lemon Grass Lg	3

Data Dictionary

- transaction_id : Unique sequential ID representing an individual transaction
- transaction_date : Date of the transaction (MM/DD/YY)
- transaction_time: Timestamp of the transaction (HH:MM:SS)
- transaction_qty : Quantity of items sold
- store_id : Unique ID of the coffee shop where the transaction took place
- store_location : Location of the coffee shop where the transaction took place
- product_id : Unique ID of the product sold
- unit_price : Retail price of the product sold
- product_category : Description of the product category
- product_type : Description of the product type

Data Processing

revenue	day	month	hour	tanggal
6	Sunday	January	7	1
6,2	Sunday	January	7	1
9	Sunday	January	7	1
2	Sunday	January	7	1
6,2	Sunday	January	7	1
3	Sunday	January	7	1
2	Sunday	January	7	1
4	Sunday	January	7	1
4,25	Sunday	January	7	1
7	Sunday	January	7	1
2,55	Sunday	January	7	1
7	Sunday	January	7	1
3	Sunday	January	7	1
3,1	Sunday	January	7	1
6	Sunday	January	7	1
6	Sunday	January	7	1
3,75	Sunday	January	7	1
2,5	Sunday	January	8	1
9	Sunday	January	8	1
4,75	Sunday	January	8	1
7	Sunday	January	8	1
5,1	Sunday	January	8	1
3,25	Sunday	January	8	1
2,55	Sunday	January	8	1
3,75	Sunday	January	8	1
3	Sunday	January	8	1

Create New Commn

- revenue =unit_price * transaction_qty : Calculates revenue by multiplying the unit price by the transaction quantity.
- Day =TEXT(transaction_date, "dddd") : Extracts the day of the week from the transaction date
- Month =TEXT(transaction_date, "mmmm") : Extracts the full name of the month from the transaction date.
- Hour =TEXT(transaction_time) : Extracts the time from the transaction time in hours.
- Date =DAY(transaction_date) : Extracts the day of the month from the transaction date as a number.

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Research Question

List Questions

- Create Pivot Charts to display revenue by month as a line chart, transactions by day of the week and hour of the day as column charts, and transactions by product category as a bar chart

- Assemble the charts into a rough dashboard layout, and include space for the PivotTable showing Top 15 product types.

- Add a slicer for store location, and connect it to all of the PivotTables on the sheet

- Adjust formatting, alignment and polish to finalize the dashboard (TIP: hide the raw PivotTables and remove the worksheet gridlines)

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Pivot Table Analysis

revenue by month as a line chart

Month	Sum of revenue
January	$ 81.678
February	$ 76.145
March	$ 98.835
April	$ 118.941
May	$ 156.728
June	$ 166.486

Total Revenue per Month

Inshigt

From the line chart, it can be seen that revenue tended to increase in the last month. Although there was a decline in February, revenue picked up again in the following months. This positive trend indicates that our marketing strategies successfully overcame the challenges at the beginning of the year. If this trend continues, there is hope that revenue will keep rising in the next quarter
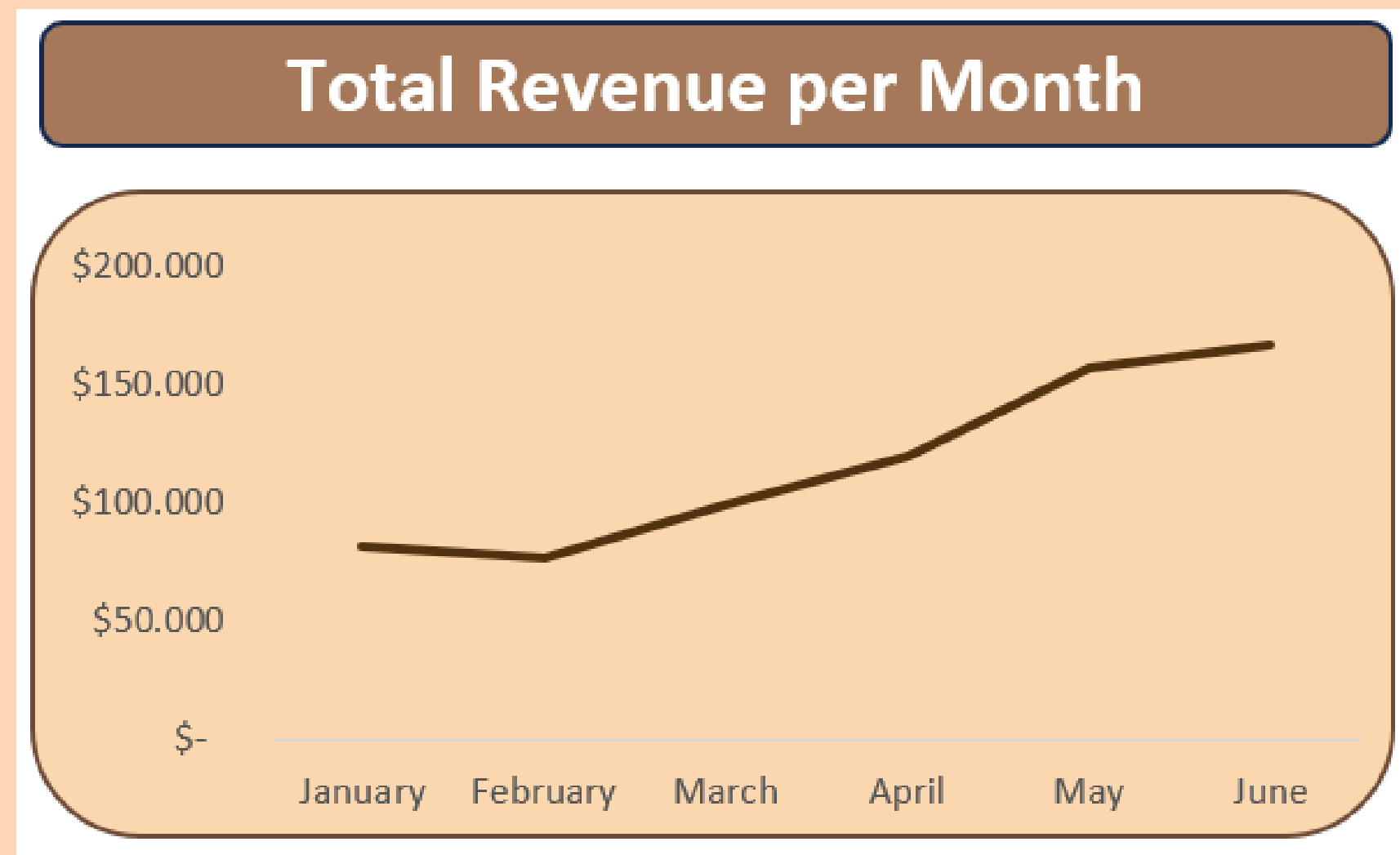
Transaction Day of Week

Day	Transaction
Sunday	30.182
Monday	31.231
Tuesday	30.449
Wednesday	30.625
Thursday	31.162
Friday	31.207
Saturday	29.614

Transaction by Day of Week

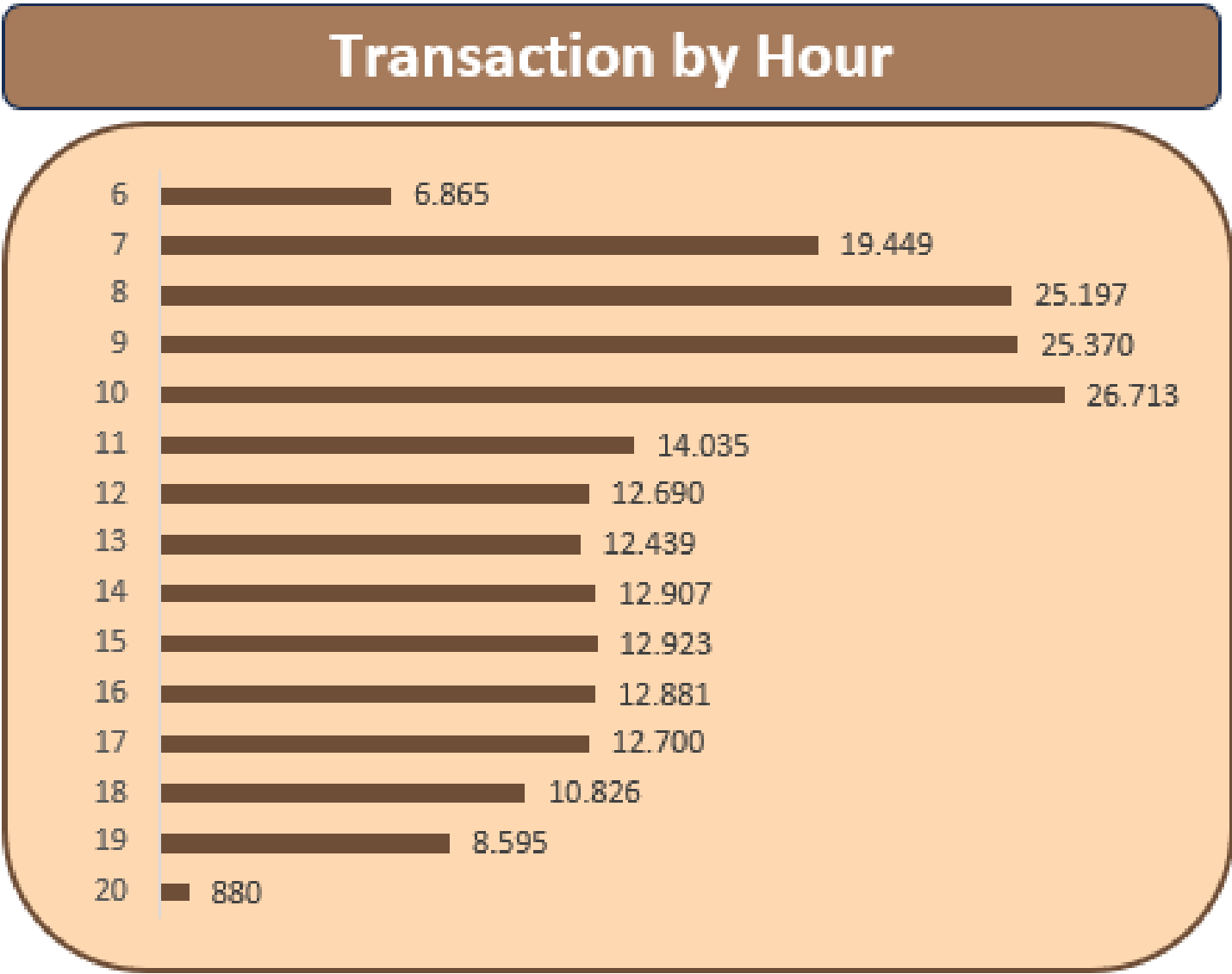| Day	Transaction
Sunday	30.182
Monday	31.231
Tuesday	30.449
Wednesday	30.625
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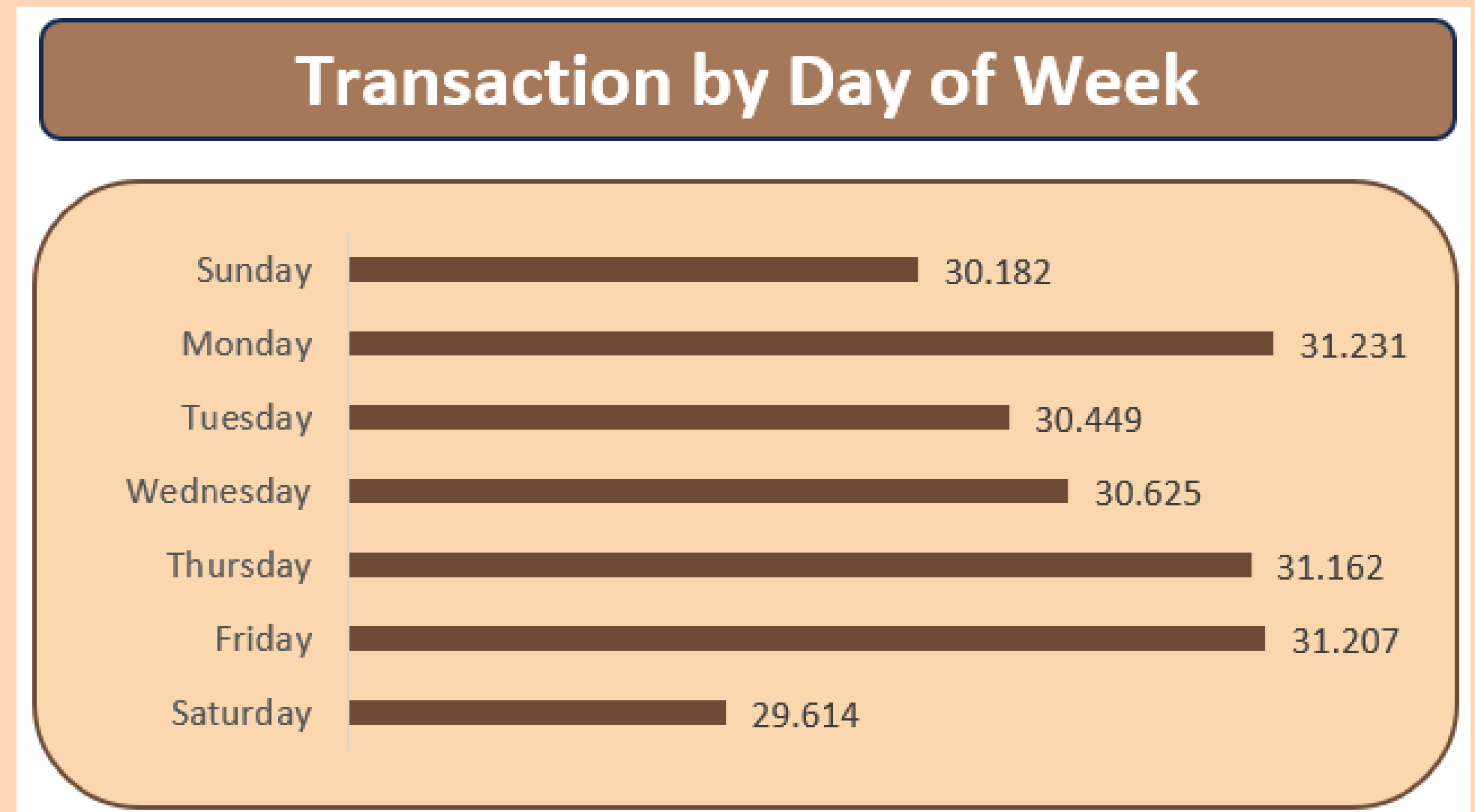
Inshigt

From the column chart, it can be seen that the highest transactions occur on Monday, Thursday, and Friday. Although there is a dip on Tuesday, transactions significantly pick up again on the following days. Despite a drop on Saturday, transactions rise again on Sunday and peak once more on Monday. This pattern indicates that Monday, Thursday, and Friday are the busiest days for transactions. Understanding this trend can help us plan better marketing strategies and optimize our offerings on these high-activity days

Transaction by Hour

Hour	Transaction
6	6.865
7	19.449
8	25.197
9	25.370
10	26.713
11	14.035
12	12.690
13	12.439
14	12.907
15	12.923
16	12.881
17	12.700
18	10.826
19	8.595
20	880

Transaction by Hour

| Hour	Transaction
6	6.865
7	19.449
8	25.197
9	25.370
10	26.713
11	14.035
12	12.690
13	12.439
14	12.907
15	12.923
16	12.881
17	12.700
18	10.826
19	8.595
20	880

Inshigt

Transactions are highest at 10 AM and lowest at 8 PM. The best time for transactions is in the morning. Understanding this trend can help us plan better marketing strategies and optimize our offerings during peak activity hours.

Transaction by Product Category

Product Category	Transaction
Packaged Chocolate	487
Branded	776
Loose Tea	1.210
Coffee beans	1.828
Flavours	10.511
Drinking Chocolate	17.457
Bakery	23.214
Tea	69.737
Coffee	89.250

Transaction by Product Category

Category	Value
Coffee	89.250
Tea	69.737
Bakery	23.214
Drinking Chocolate	17.457
Flavours	10.511
Coffee beans	1.828
Loose Tea	1.210
Branded	776
Packaged Chocolate	487

Inshigt

Product transactions are highest in the coffee and tea categories, while the least popular product is packaged chocolate. It is recommended to focus on stocking and promoting coffee and tea products and to consider increasing promotions or revising sales strategies for less popular products like packaged chocolate.
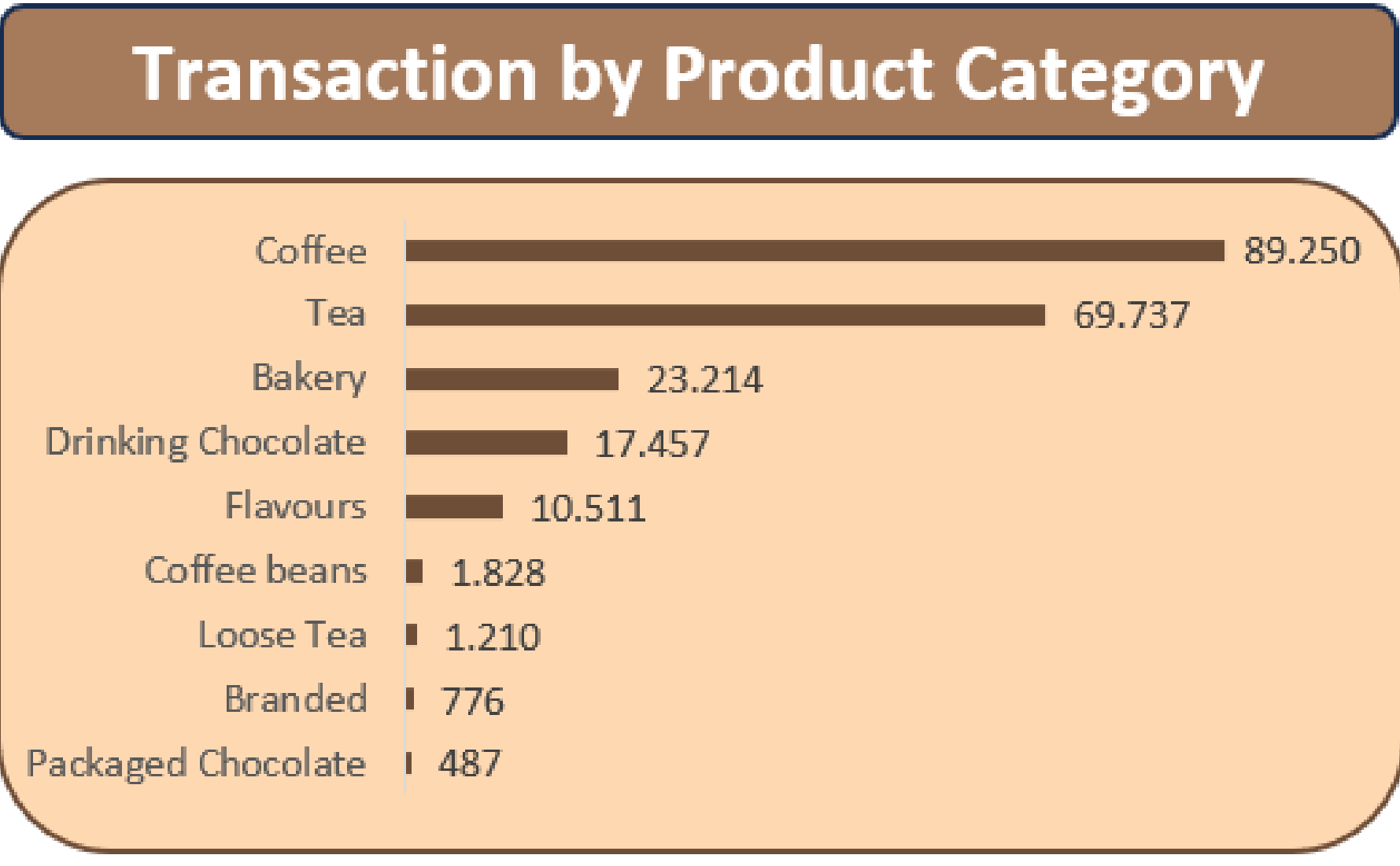
Top 15 Best-Selling

Top 15 Best-Selling Products

Product	Value
Earl Grey Rg	4.708
Dark chocolate Lg	4.668
Morning Sunrise Chai Rg	4.643
Latte	4.602
Peppermint Rg	4.564
Columbian Medium Roast Rg	4.547
Traditional Blend Chai Rg	4.512
Latte Rg	4.497
Our Old Time Diner Blend Sm	4.484
Serenity Green Tea Rg	4.477
Sustainably Grown Organic Lg	4.453
Ethiopia Sm	4.433
Our Old Time Diner Blend Rg	4.410
Spicy Eye Opener Chai Lg	4.404
Jamaican Coffee River Lg	4.395

Inshigt

The most transactions are for the product Earl Grey RG, with a total of 4,708 transactions. The highest revenue comes from the product Sustainably Grown Organic RG, amounting to $21,152, although this product ranks 11th in sales with a total of 4,453 transactions. This indicates that while Earl Grey RG has the highest number of transactions, the highest sales value is generated by Sustainably Grown Organic RG.

Top 15 Best-Selling Revenue

Product	Revenue
Sustainably Grown…	$21.152
Dark chocolate Lg	$21.006
Latte Rg	$19.112
Cappuccino Lg	$17.642
Morning Sunrise Chai Lg	$17.384
Latte	$17.258
Jamaican Coffee River Lg	$16.481
Sustainably Grown…	$16.234
Cappuccino	$15.998
Brazilian Lg	$15.110
Ethiopia Lg	$14.795
Dark chocolate Rg	$14.025
Spicy Eye Opener Chai Lg	$13.652
Ethiopia Rg	$13.179
Brazilian Rg	$13.155

Slicer

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With a slicer, you can select specific categories, Branch, Day, Month to display in reports or pivot tables. This tool simplifies data analysis by allowing you to quickly and intuitively view relevant subsets of data.

Branch

- Astoria
- Hell's Kitchen
- Lower Manhattan

Day

Sunday	Monday
Tuesday	Wednesday
Thursday	Friday
Saturday	

Month

January	February
March	April
May	June

Category

- Bakery
- Branded
- Coffee
- Coffee beans
- Drinking Chocolate
- Flavours
- Loose Tea
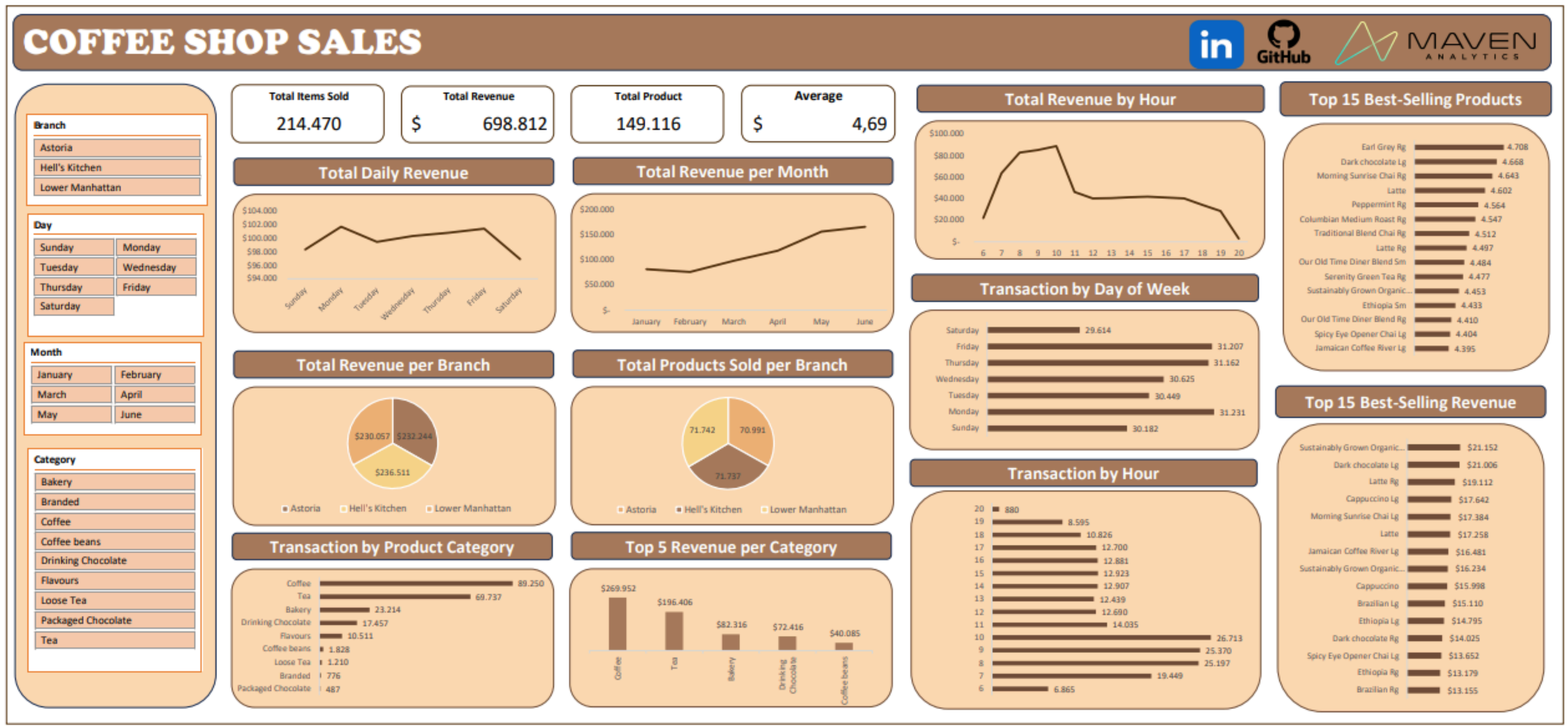- Packaged Chocolate
- Tea

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Dashboard

Dashboard Interactive

Thanks!

If you have any questions or need further information, feel free to reach out.