

Coffee Shop Sales Analysis

Introduction

Thanks to WS Cube YouTube for the Excel project. This is my first project and the first of many to build a portfolio as a Data Analyst. This project's main objective is clearly understanding sales and customer behavior over time. Below are the problems this analysis solved:

1. Total revenue generated from coffee sales
2. Average transaction/bill and order per customer
3. Customer traffic/footfall in each store
4. Top product that made the most sales over time
5. Which weekdays have the highest and lowest sales? Are there any suggestions for improving the day with the lowest sales?
6. Sales performance based on product size and category

Project Process

1. **Data Collection**
2. **Data Cleaning**
3. **Data Visualization**
4. **Data Reporting**

So, let's dive into the Coffee Shop Sales Analysis.

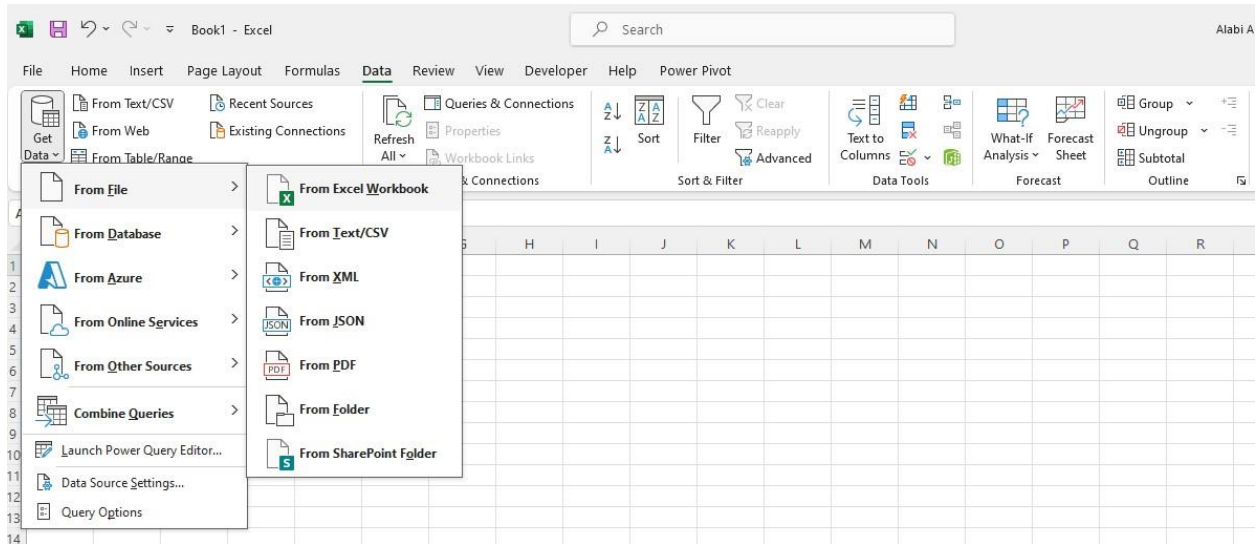
DATA COLLECTION

The data for this project was obtained from the WS Cube YouTube Excel Project. Click [here](#) to get the data

Data Cleaning

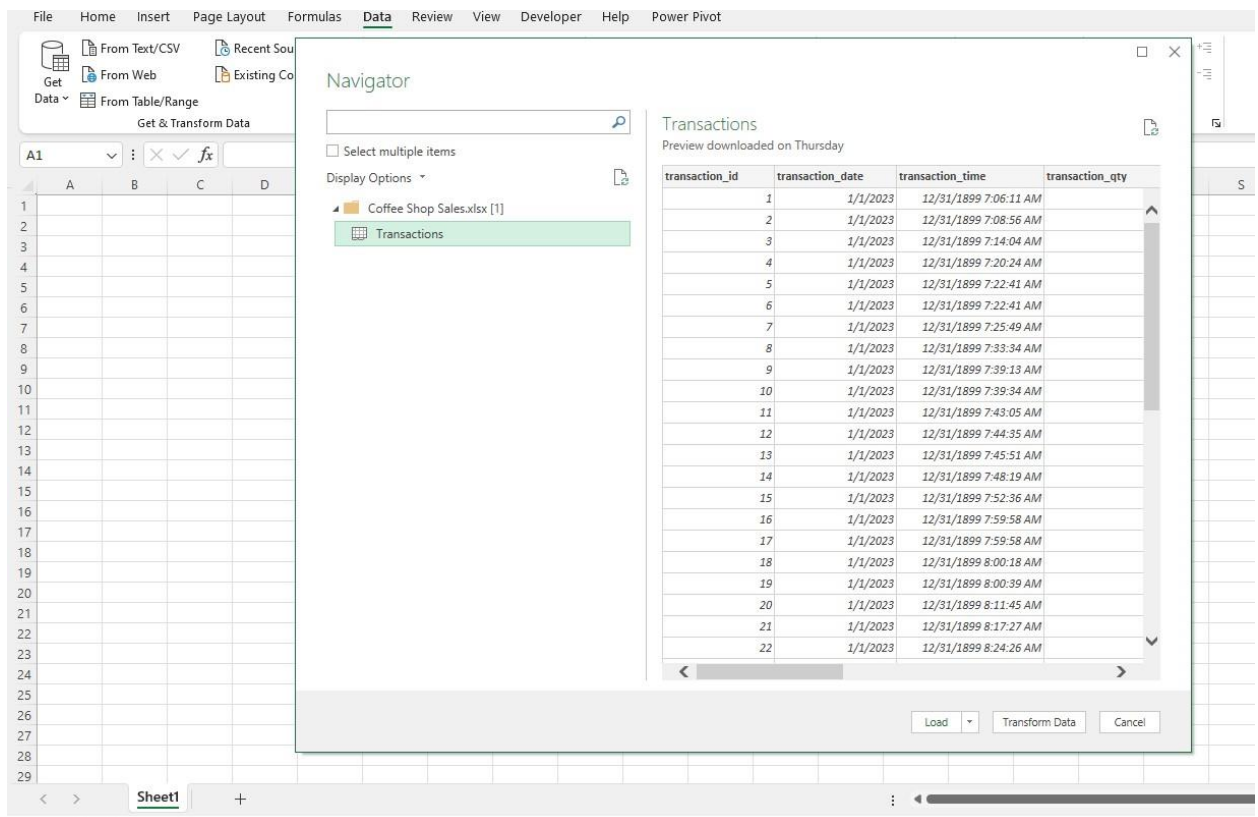
Tools Used: Power Query

1. **Open a new blank workbook in MS Excel.**
2. **Load Data:**
 - Go to the Data ribbon and click Get Data > From File > Workbook.



3. Import and Transform Data:

- In Power Query, change the data type of the `transaction_time` column to Time.



Transactions - Power Query Editor

File Home Transform Add Column View

Close & Load Refresh Preview Manage Query Properties Advanced Editor Choose Columns Remove Columns Keep Rows Remove Rows Sort Split Column Group By Data Type: Whole Number Use First Row as Headers Replace Values Merge Queries Append Queries Combine Files Manage Parameters Data source settings New Source Recent Sources

Queries [1] Transactions

Table.TransformColumnTypes(#"Promoted Headers",{{"transaction_id", Int64.Type}, {"transaction_date", type date}, {"transaction_time", type time}, {"transaction_qty", Int64.Type}, {"store_id", Int64.Type}, {"store_location", type text}})

	transaction_id	transaction_date	transaction_time	transaction_qty	store_id	store_location
1	1	1/1/2023	12/31/1899 7:06:11 AM	2	5	Lower Manhattan
2	2	1/1/2023	12/31/1899 7:08:56 AM	2	5	Lower Manhattan
3	3	1/1/2023	12/31/1899 7:14:04 AM	2	5	Lower Manhattan
4	4	1/1/2023	12/31/1899 7:20:24 AM	1	5	Lower Manhattan
5	5	1/1/2023	12/31/1899 7:22:41 AM	2	5	Lower Manhattan
6	6	1/1/2023	12/31/1899 7:22:41 AM	1	5	Lower Manhattan
7	7	1/1/2023	12/31/1899 7:25:49 AM	1	5	Lower Manhattan
8	8	1/1/2023	12/31/1899 7:33:34 AM	2	5	Lower Manhattan
9	9	1/1/2023	12/31/1899 7:39:13 AM	1	5	Lower Manhattan
10	10	1/1/2023	12/31/1899 7:39:34 AM	2	5	Lower Manhattan
11	11	1/1/2023	12/31/1899 7:43:05 AM	1	5	Lower Manhattan
12	12	1/1/2023	12/31/1899 7:44:35 AM	2	5	Lower Manhattan
13	13	1/1/2023	12/31/1899 7:45:51 AM	1	5	Lower Manhattan
14	14	1/1/2023	12/31/1899 7:48:19 AM	1	5	Lower Manhattan
15	15	1/1/2023	12/31/1899 7:52:36 AM	2	5	Lower Manhattan
16	16	1/1/2023	12/31/1899 7:59:58 AM	2	5	Lower Manhattan
17	17	1/1/2023	12/31/1899 7:59:58 AM	1	5	Lower Manhattan
18	18	1/1/2023	12/31/1899 8:00:18 AM	1	8	Hell's Kitchen
19	19	1/1/2023	12/31/1899 8:00:39 AM	2	8	Hell's Kitchen
20	20	1/1/2023	12/31/1899 8:11:45 AM	1	8	Hell's Kitchen
21	21	1/1/2023	12/31/1899 8:17:27 AM	2	8	Hell's Kitchen
22	22	1/1/2023	12/31/1899 8:24:26 AM	2	5	Lower Manhattan
23	23	1/1/2023	12/31/1899 8:24:26 AM	1	5	Lower Manhattan
24	24	1/1/2023	12/31/1899 8:29:38 AM	1	8	Hell's Kitchen
25	25	1/1/2023	12/31/1899 8:31:23 AM	1	8	Hell's Kitchen
26	26	1/1/2023	12/31/1899 8:33:08 AM	1	5	Lower Manhattan
27	27	1/1/2023	12/31/1899 8:33:08 AM	1	5	Lower Manhattan
28	28	1/1/2023	12/31/1899 8:35:03 AM	2	5	Lower Manhattan
29	29	1/1/2023	12/31/1899 8:35:03 AM	1	5	Lower Manhattan
30	30	1/1/2023	12/31/1899 8:41:57 AM	2	8	Hell's Kitchen

Query Settings

PROPERTIES

Name: Transactions

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Split Column Group By

Data Type: Any

Decimal Number

Currency

Whole Number

Percentage

Date/Time

Date

Time

Date/Time/Timezone

Duration

Text

True/False

Binary

Transactions_Sheet,

transaction_date	transaction_time
1/1/2023	12/31/1899 7:06:11 AM
1/1/2023	12/31/1899 7:08:56 AM
1/1/2023	12/31/1899 7:14:04 AM
1/1/2023	12/31/1899 7:20:24 AM
1/1/2023	12/31/1899 7:22:41 AM
1/1/2023	12/31/1899 7:22:41 AM
1/1/2023	12/31/1899 7:25:49 AM
1/1/2023	12/31/1899 7:33:34 AM
1/1/2023	12/31/1899 7:39:13 AM
1/1/2023	12/31/1899 7:39:34 AM
1/1/2023	12/31/1899 7:43:05 AM

Data Type: Time

Group By

Use First Row as Headers

Replace Values

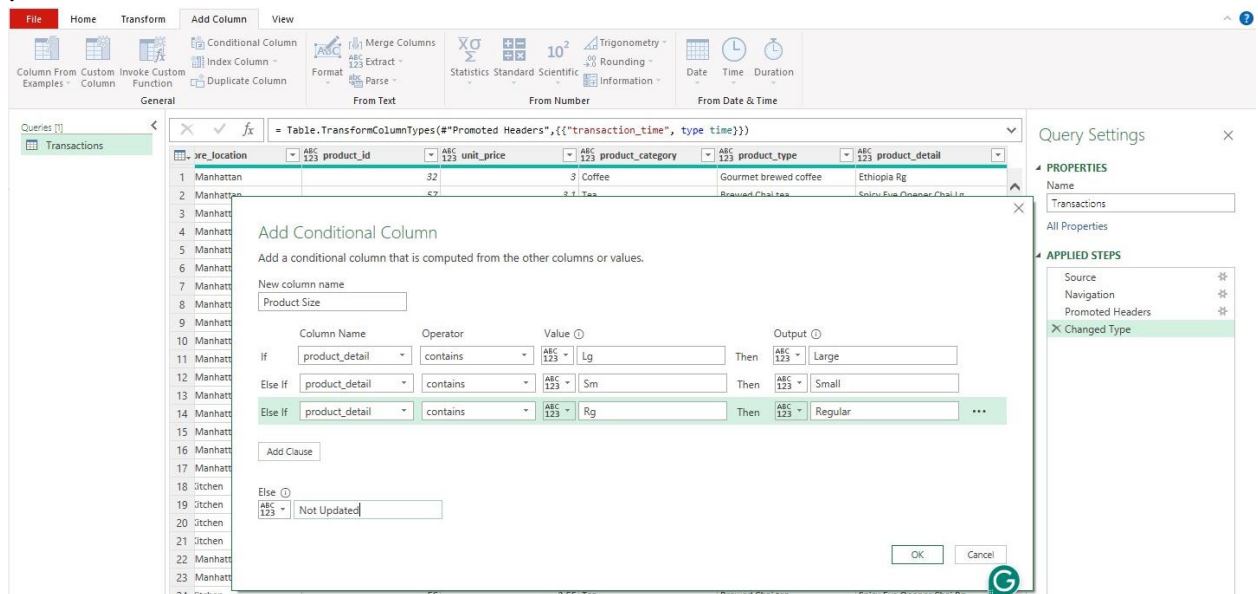
Transform

transaction_time
7:06:11 AM
7:08:56 AM
7:14:04 AM
7:20:24 AM
7:22:41 AM
7:22:41 AM
7:25:49 AM
7:33:34 AM
7:39:13 AM
7:39:34 AM

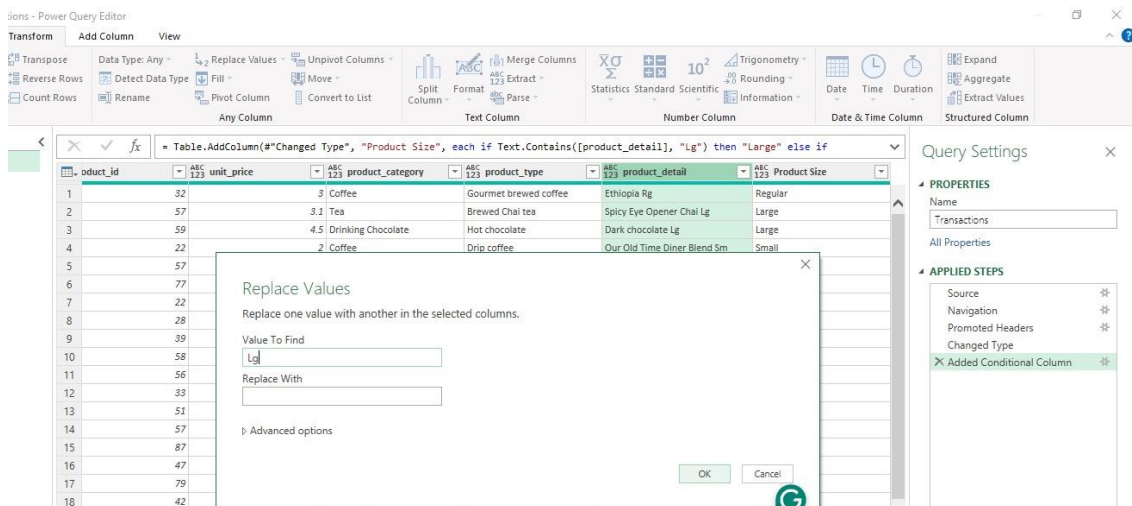
4. Product Detail Column:

- The product_detail column contains acronyms such as “Lg,” “Sm,” and “Rg,” indicating product size (Large, Small, Regular).

- Create a new column separating the product size and details.
 - Go to Add Column > Conditional Column.
 - Create a column named Product Size using logical if conditions.



- Replace acronyms in the Product_Detail column with blank spaces:
- Go to Transform > Replace Values.



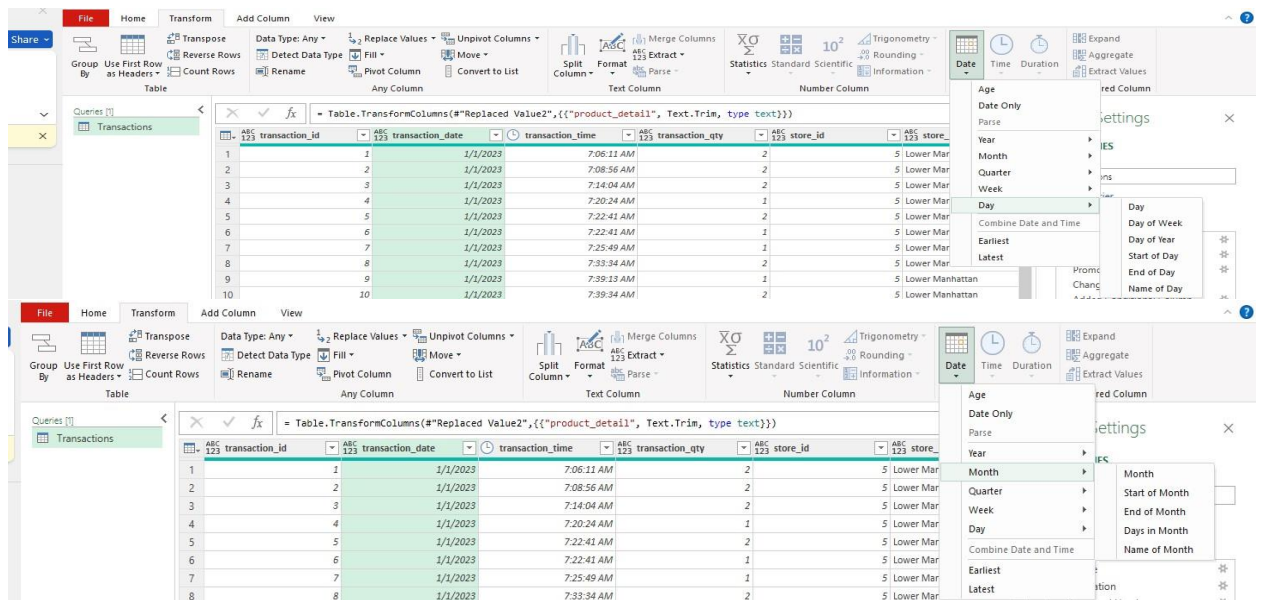
NOTE: Replacing the acronyms with blank spaces will only increase the length of the text in the “Product_detail” column. Therefore,

- Use the Trim function to remove unnecessary spaces:

- Go to Add Column > Format > Trim.
- Verify the changes using Transform > Extract > Length.

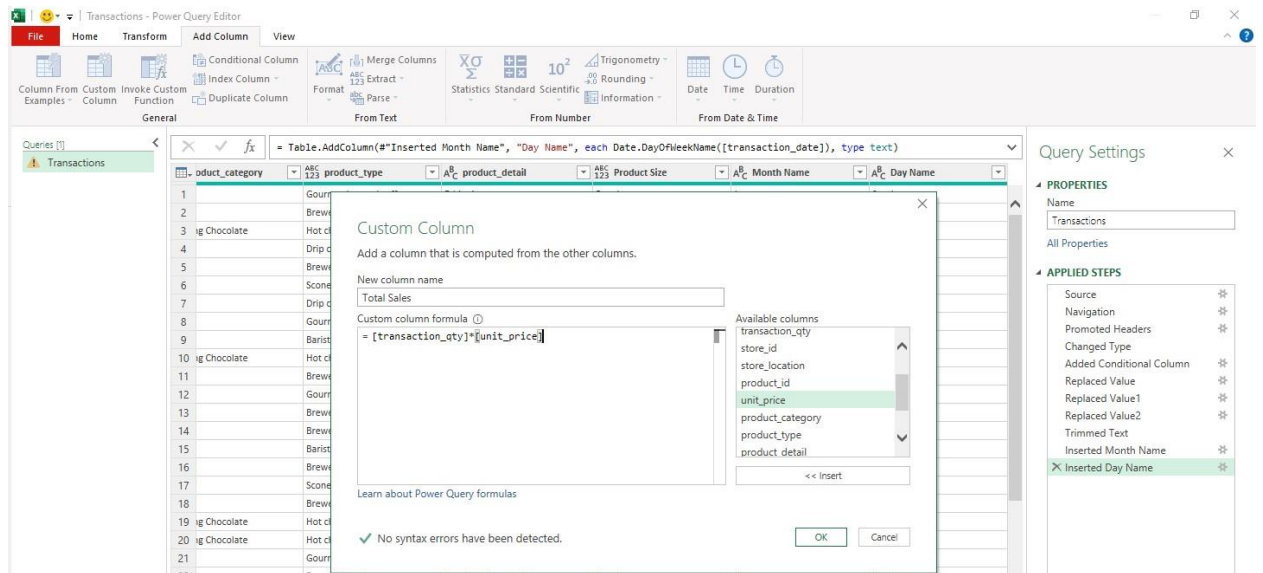
5. Date Columns:

- Add columns for month and day names for analysis:
 - Go to Add Column > Date > Month Name.
 - Repeat for Day Name.



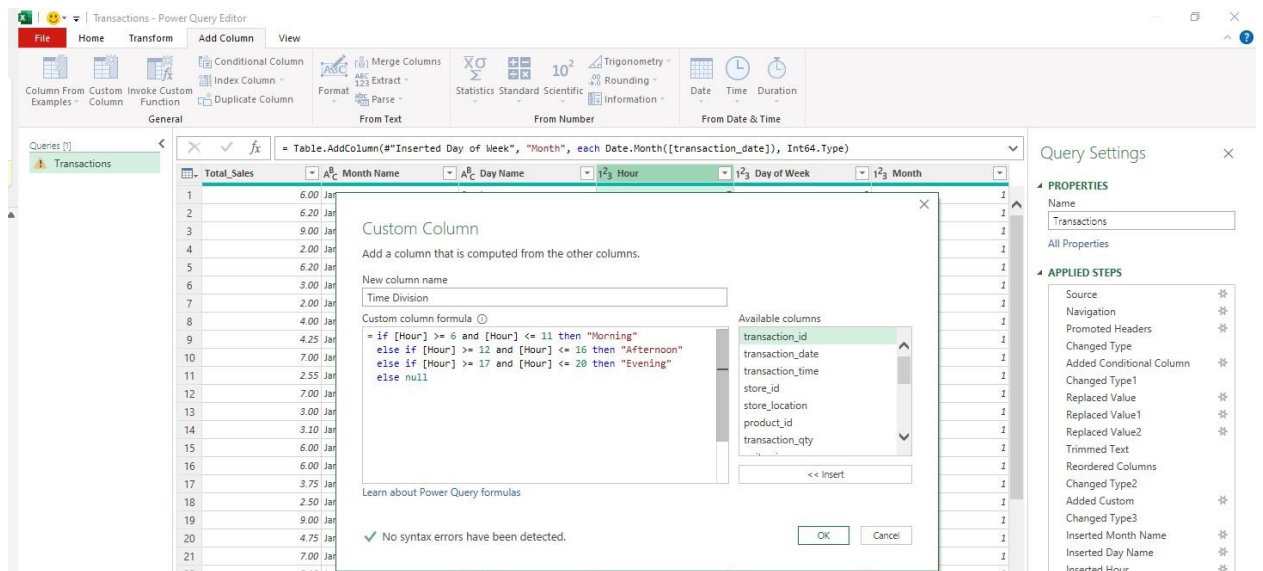
6. Total Sales Column:

- Create a new column for total sales:
 - Go to Add Column > Custom Column.
- Format the Total Sales column to Currency.



7. Time division Column:

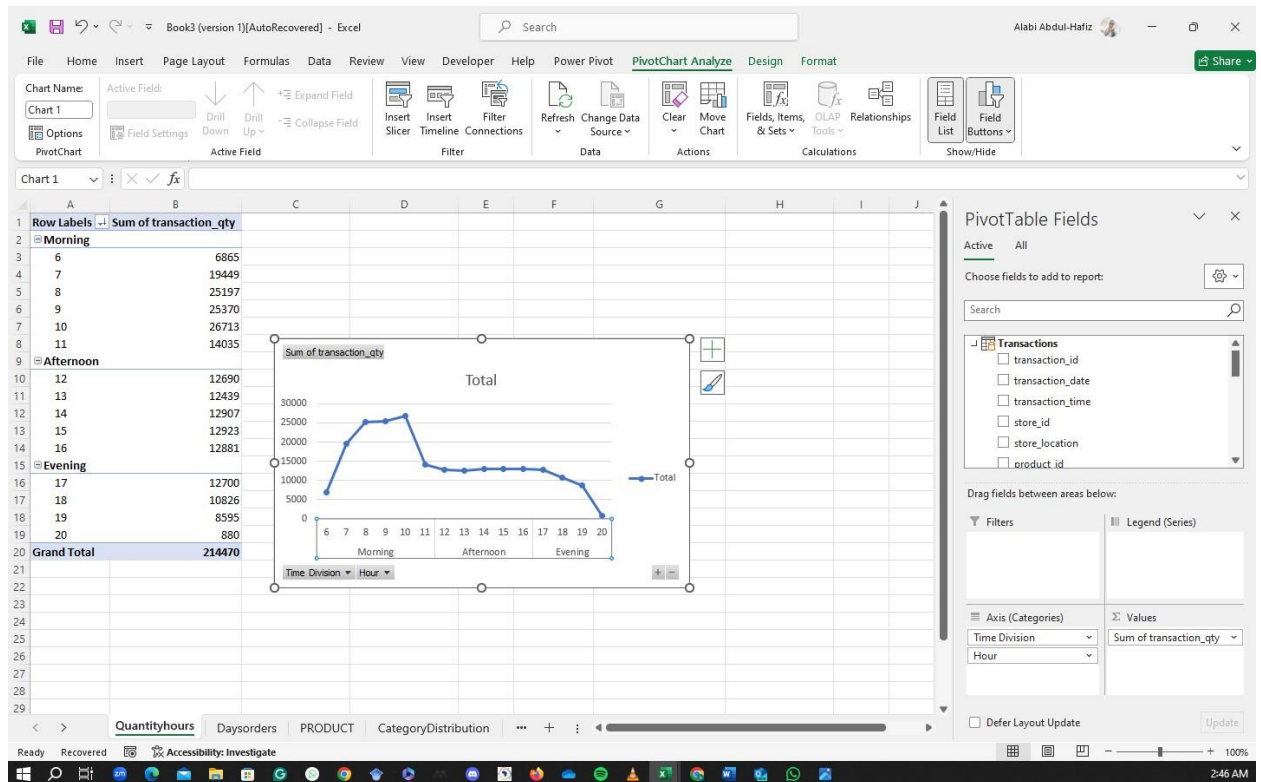
- Create a new column for total sales:
 - Go to Add Column > Custom Column.



DATA VISUALIZATION

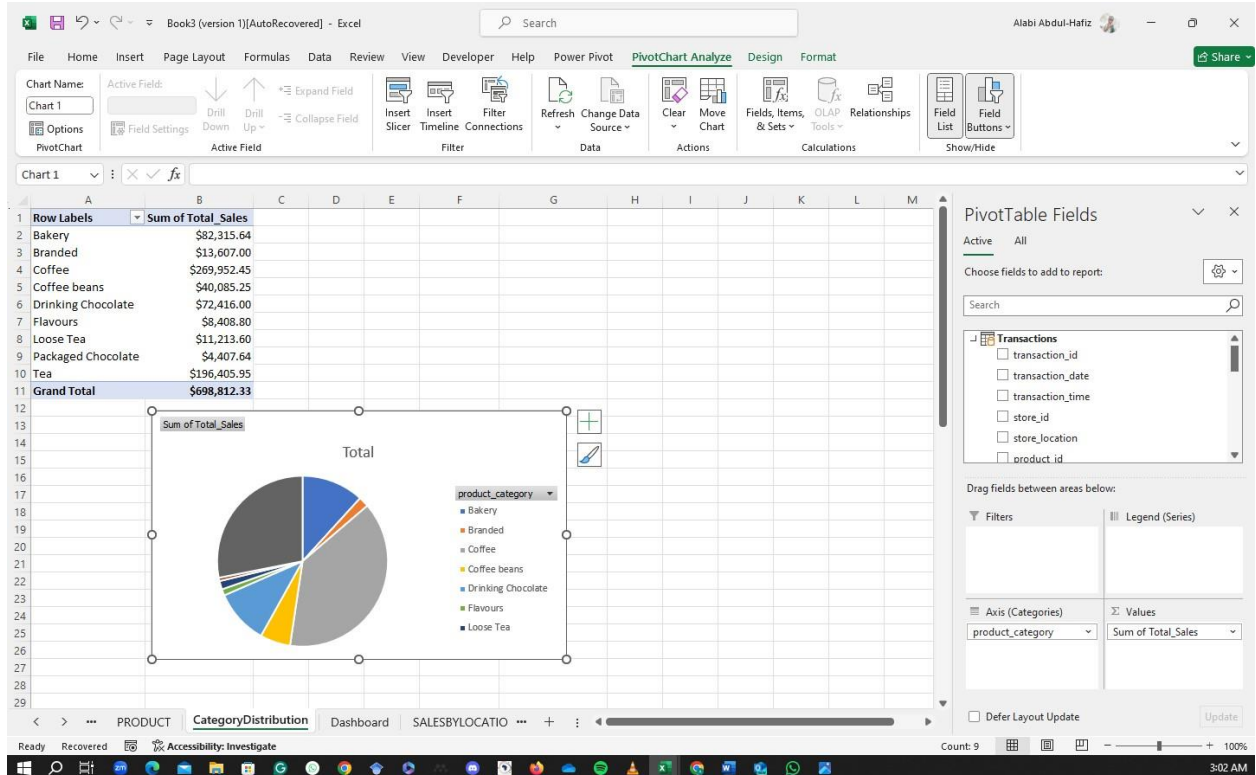
1. Quantity of Orders by Hour

- Create a pivot table with `time_division` and `hours` in the row field and `transaction_qty` in the values field.



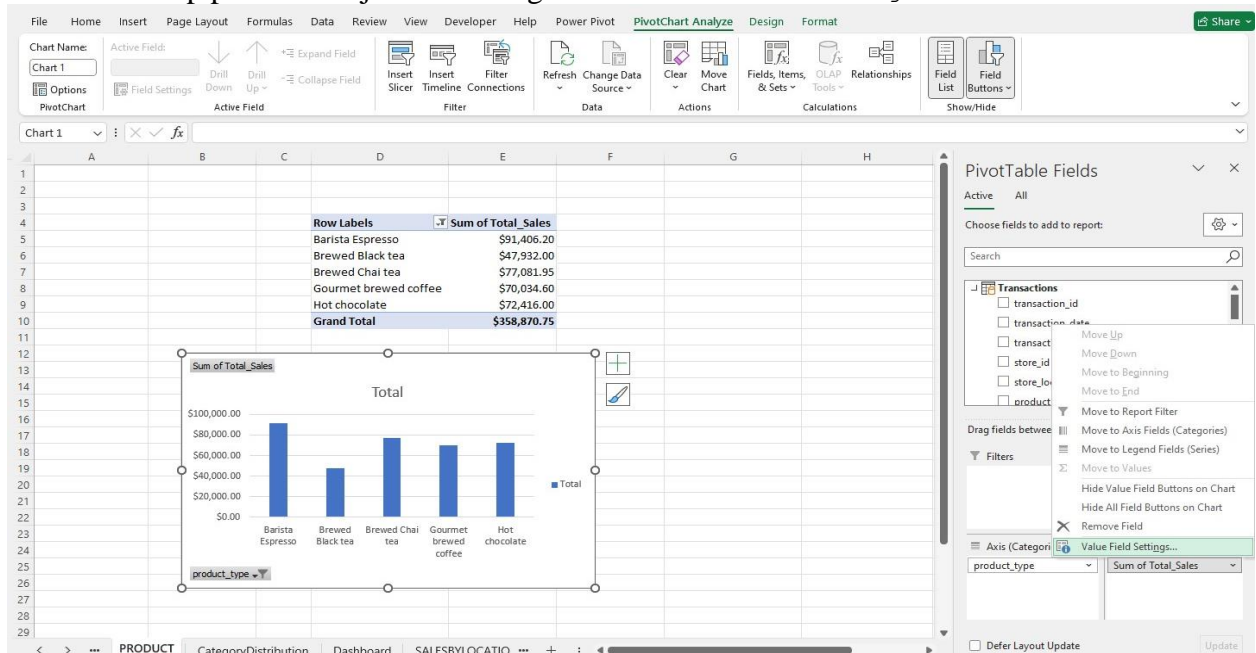
2. % Sales Distribution by Product Categories

- Create a pivot table with `product_category` in the row field and `total_sales` in the values field.



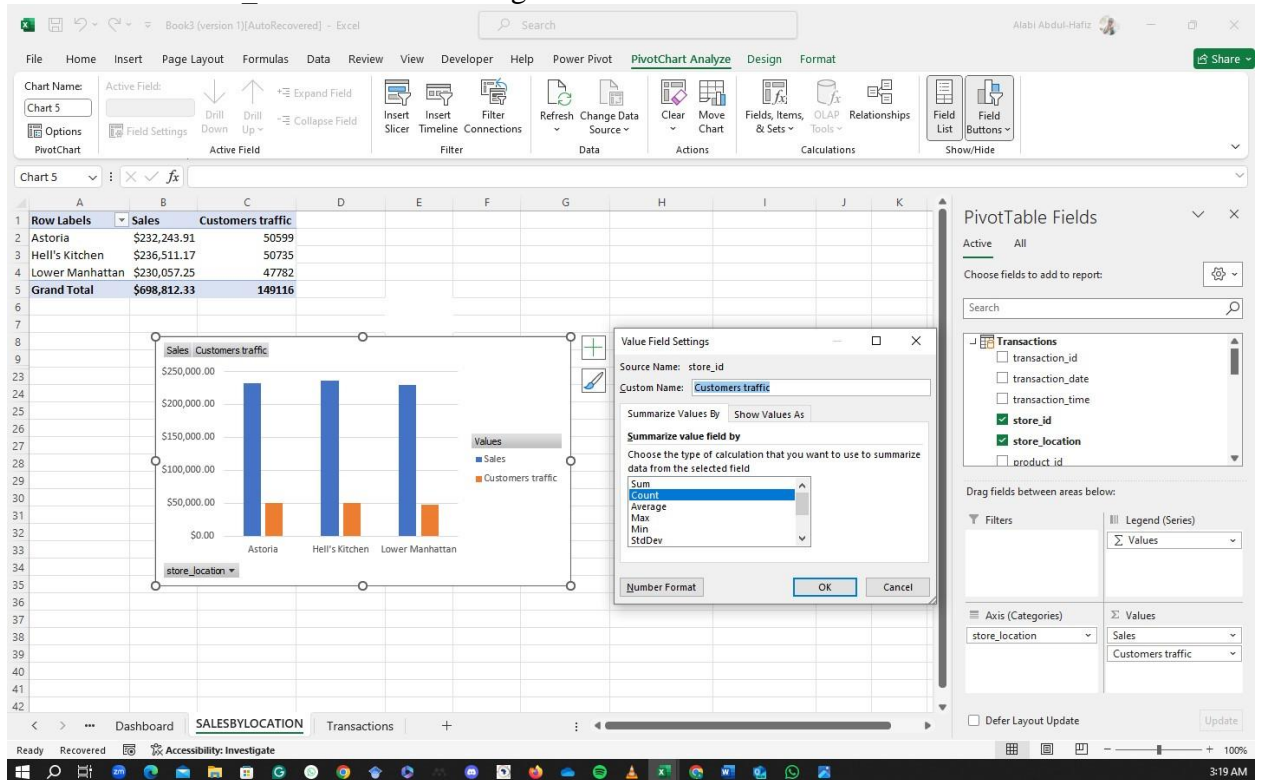
3. Top 5 product

- Create a pivot table with `product_type` in the row field and `total_sales` in the values field.
- Filter the top products to just five using the Value Field Settings



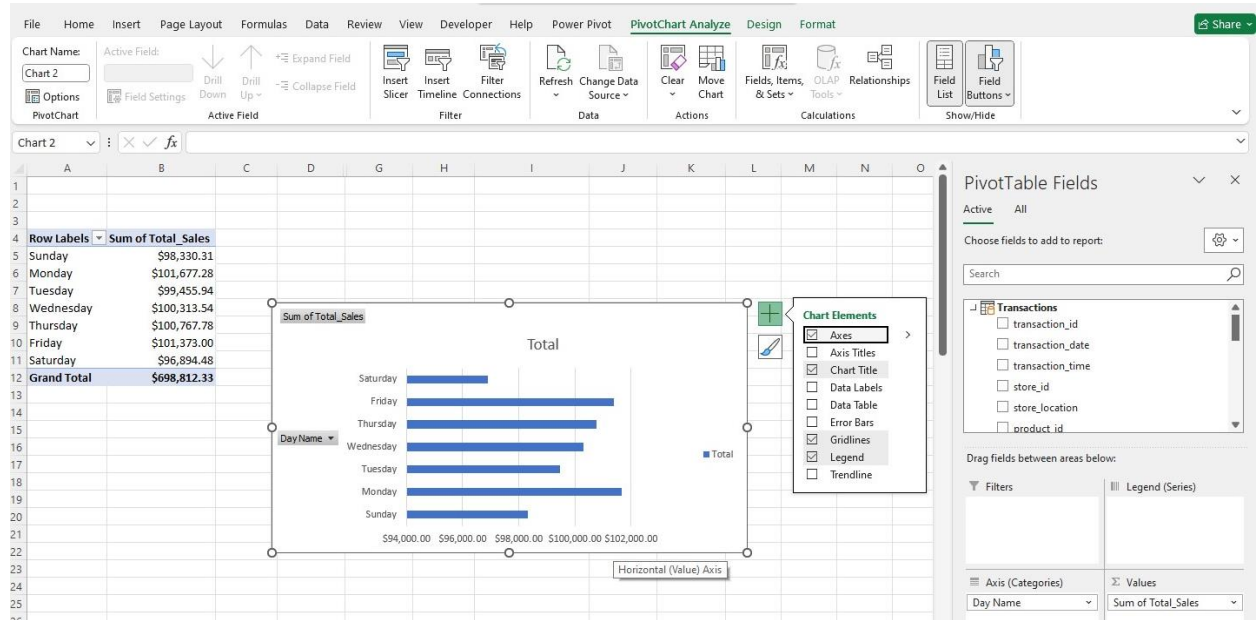
4. Sales and Customers Traffic Based on Store Locations

- Create a pivot table with `store_location` in the row field and `total_sales` and `stores_id` in the values field.
- Filter the `store_id` value field settings to Count.



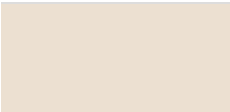




5. Orders on Weekdays

- Create a pivot table with the day name in the row field and total_sales and stores_id in the values field.



6. Dashboard

- Create a new sheet and arrange your charts to create your dashboard.
- Color recommendations:

Color	Hex	RGB
	#ece0d1	(236,224,209)
	#dbclac	(219,193,172)
	#967259	(150,114,89)
	#634832	(99,72,50)
	#38220f	(56,34,15)

DATA REPORTING

Insights and Suggestions:

1. **Peak Coffee Orders:** Coffee orders peak in the morning, especially around 9 a.m.- 10 a.m., when people are starting their workday.
2. **Top Coffee Category:** Regular coffee size is the most ordered category.
3. **Top Store Location:** Hell's Kitchen has the highest sales due to more significant customer traffic.
4. **Sales by Day:** Fridays record the highest sales (\$21,700), while Saturdays have the lowest (\$20,510). To improve Saturday sales:
 - Offer special promotions and discounts.
 - Start event marketing on Saturdays (e.g., workshops and classes).
 - Offer free samples of a new coffee drink every Saturday from 9 am to 11 am.
 - Collect and act on customer feedback to introduce new products or services that cater to customer preferences.

Thank you for following along with my project. As this is my first project and documentation, your advice and input will help me improve.