ANALYSIS OF RESTAURANT CUSTOMER SALES USING TABLEAU

SUBMITTED BY

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SUBMITTED TO

SHILPA MISS

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INTRODUCTION

This dataset represents restaurant transaction data capturing customer orders placed between January 2022 and December 2023. It contains 17,534 records and provides detailed information about individual orders, making it suitable for analyzing customer purchasing behavior, menu performance, and payment preferences.

Each record includes key attributes such as Order ID, Customer ID, food category, item name, price, quantity ordered, order total, order date, and payment method. The dataset covers multiple menu categories including main dishes, side dishes, and drinks, allowing for category-wise and item-level analysis.

Overall, this dataset is valuable for performing descriptive analysis, trend analysis, customer insights, and operational decision-making in the restaurant business. It can be effectively used for data cleaning, visualization, and business intelligence tasks using tools such as Excel, Python, Tableau, or Power BI.

DATA DESCRIPTION

Order ID	Customer ID	Category	Item	Price	Quantity	Order Total	Order Date	Payment Metho
ORD_705844	CUST_092	Side Dishes	Side Salad	3	1	3	12/21/2023	Credit Card
ORD_338528	CUST_021	Side Dishes	Mashed Potatoes	4	3	12	5/19/2023	Digital Wallet
ORD_443849	CUST_029	Main Dishes	Grilled Chicken	15	4	60	9/27/2023	Credit Card
ORD_630508	CUST_075	Drinks			2	5	8/9/2022	Credit Card
ORD_648269	CUST_031	Main Dishes	Pasta Alfredo	12	4	48	5/15/2022	Cash
ORD_381680	CUST_031	Main Dishes	Salmon	18	5	90	7/20/2022	Digital Wallet
ORD_270994	CUST_071	Side Dishes	Garlic Bread	4	5	20	8/19/2022	Credit Card
ORD_146656	CUST_077	Main Dishes		15	3	45	2/15/2023	Cash
ORD_428611	CUST_083	Desserts		6	2	12	12/16/2023	Cash
ORD_743636	CUST_085	Main Dishes	Vegetarian Platter	14	5	70	8/7/2022	
ORD_117003	CUST_021	Desserts	Brownie	6	2	12	12/9/2023	Credit Card
ORD_726419	CUST_025	Main Dishes	Salmon	18	5	90	10/30/2023	Cash
ORD_754176	CUST_047	Main Dishes	Salmon	18	1	18	4/11/2023	Cash
ORD_330351	CUST_057	Starters	Sweet Potato Fries	5	4	20	8/18/2023	Credit Card
ORD_458560	CUST_017	Side Dishes	Mashed Potatoes	4	3	12	6/8/2022	Cash
ORD_639569	CUST_024	Drinks	Lemonade	3	2	6	8/28/2022	Cash
ORD_736695	CUST_067	Main Dishes	Grilled Chicken	15	3	45	5/1/2022	Digital Wallet
ORD_283207	CUST_090	Side Dishes	Side Salad	3	2	6	9/1/2023	Digital Wallet
ORD_337802	CUST_034	Desserts		4	5	20	11/13/2022	Credit Card
ORD_744179	CUST_009	Desserts	Brownie	6	3	18	6/8/2023	Credit Card
ORD_845047	CUST_052	Main Dishes	Vegetarian Platter	14	4	56	2/21/2023	Digital Wallet
ORD_862247	CUST_071	Side Dishes	Side Salad	3	4	12	2/1/2023	Credit Card
ORD_356735	CUST_055	Main Dishes	Salmon	18	4	72	5/9/2023	Credit Card

The dataset used for this Tableau analysis consists of 17,534 restaurant order records collected between January 2022 and December 2023. Each row in the dataset represents a single customer transaction, capturing details related to orders, menu items, pricing, and payment methods.

The dataset includes both dimension and measure fields, enabling comprehensive visual analysis in Tableau. Key dimensions such as Order ID, Customer ID, Category, Item Name, Order Date, and Payment Method allow for filtering, grouping, and trend analysis. Measure fields such as Price, Quantity, and Total Amount support quantitative analysis including comparisons, distributions, and time-based performance evaluation.

COLUMN NAME	DESCRIPTION	DATA TYPE
ORDER ID	Unique ID of Orders	ORDER
CUSTOMER ID	Unique ID of Customers	ORDER
CATEGORY	Types of categories	ORDER
ITEM	Names of items	ORDER
PRICE	Price of items	FLOAT
QUANTITY	Amount of quantity	FLOAT
ORDER TOTAL	Total number of orders	ORDER
ORDER DATE	Date of taking order	ORDER
PAYMENT METHOD	Type of payment	ORDER

Dataset Source : Kaggle

Total Rows :17534

Total Columns : 9

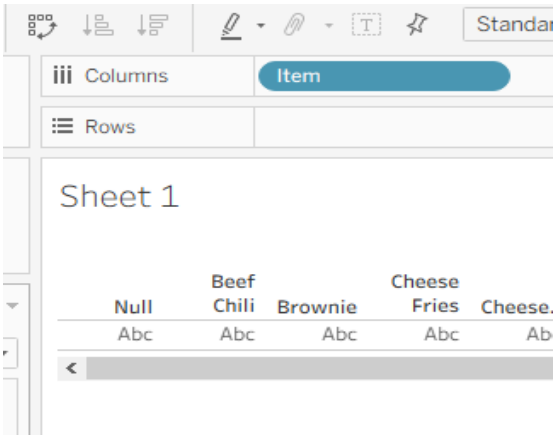
DATA CLEANING

1. Importing the dataset

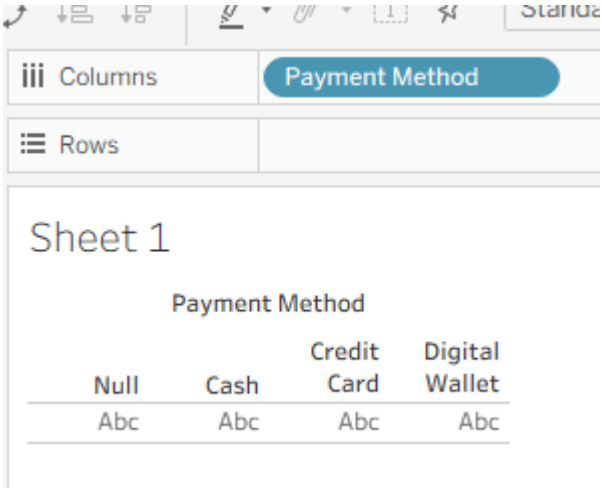
2. Handling the missing values

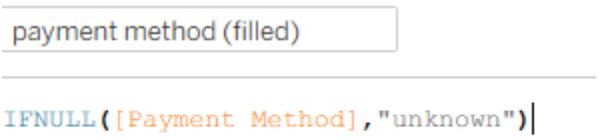
We have null values in category, item, price, quantity, payment method, order total.

❖ ITEM

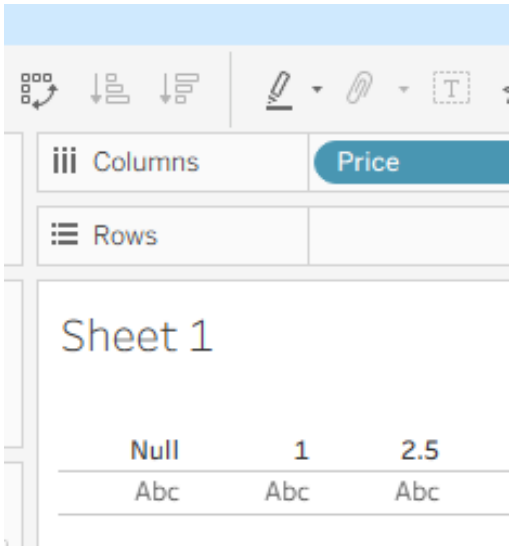


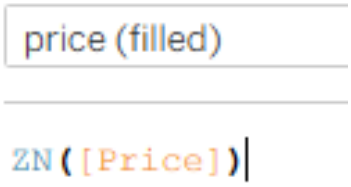
❖ PAYMENT METHOD



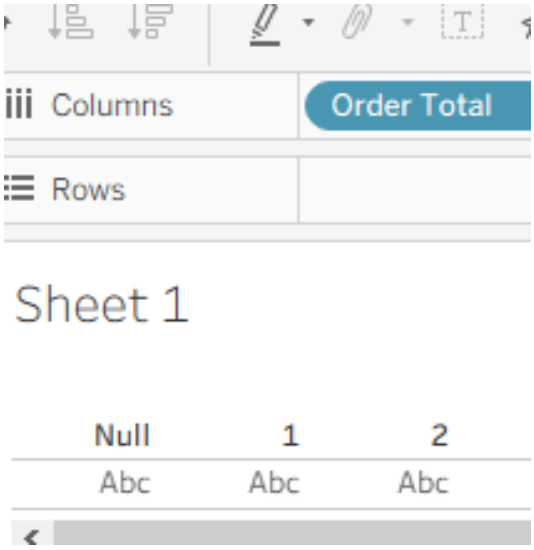


❖ **PRICE**

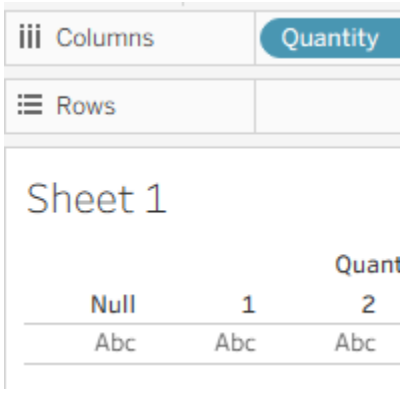




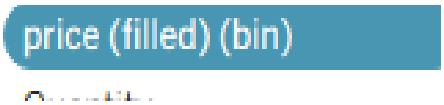
❖ **ORDER TOTAL**



❖ **QUANTITY**

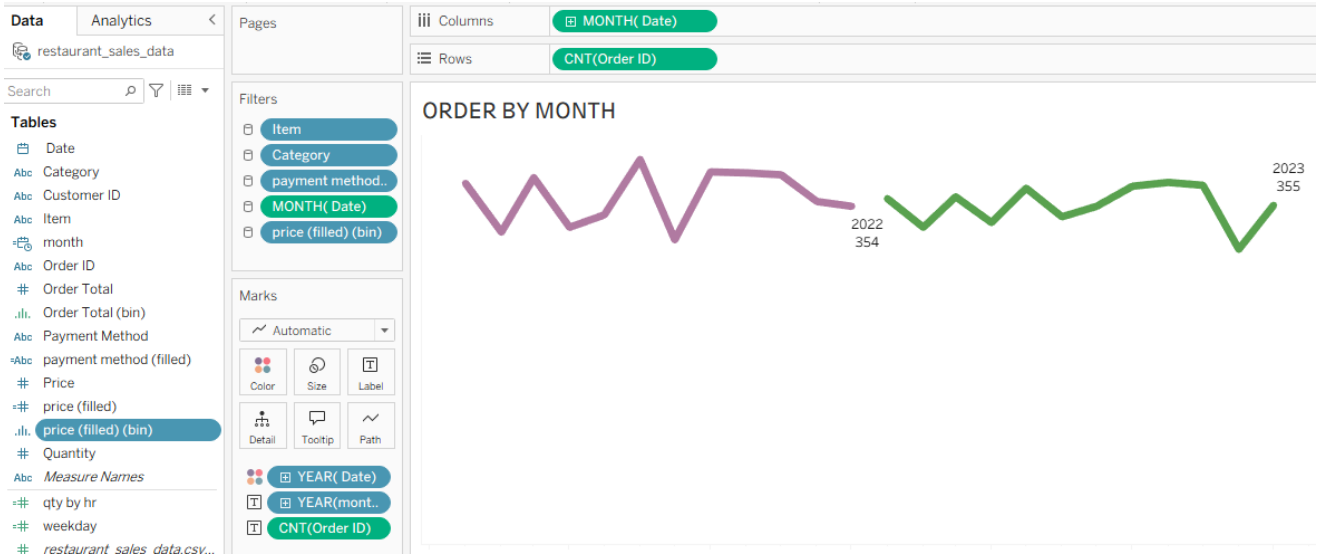


❖ ADDED A NEW CALCULATED FIELD NAMED PRICE BIN FOR MAKING THE PRICE DISTRIBUTION



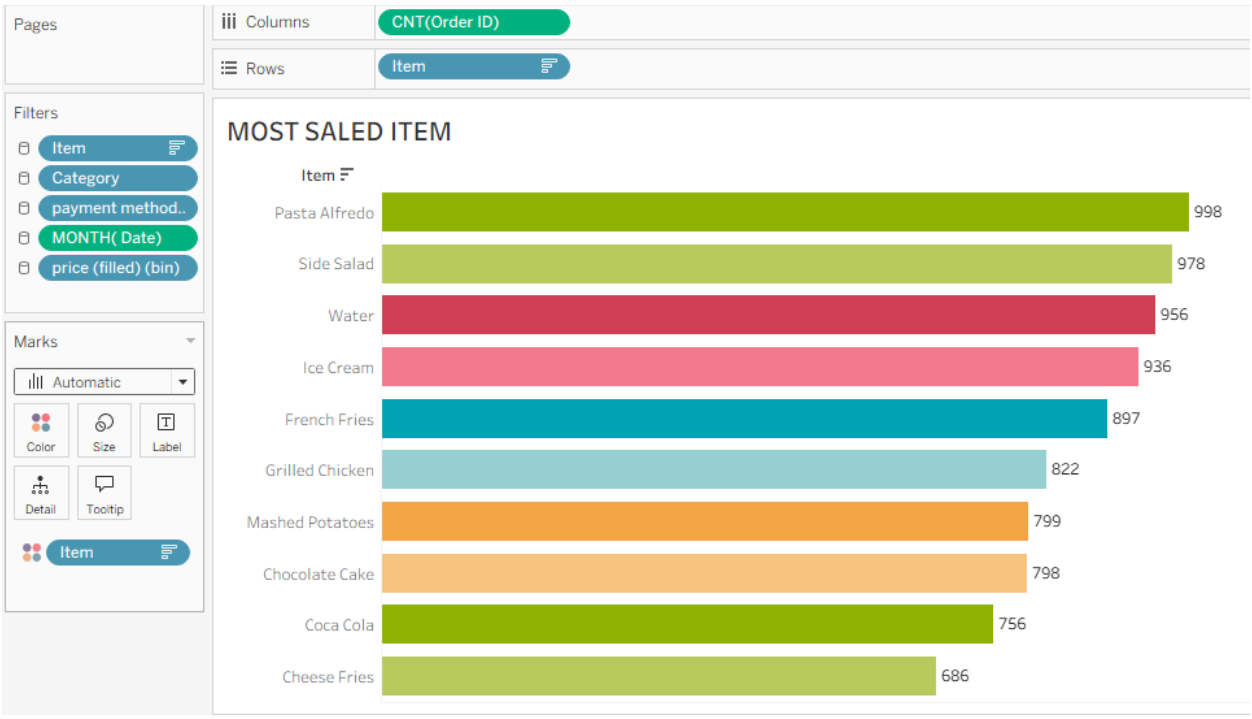
DATA VISUALISATION

1. Which month has the highest number of orders?



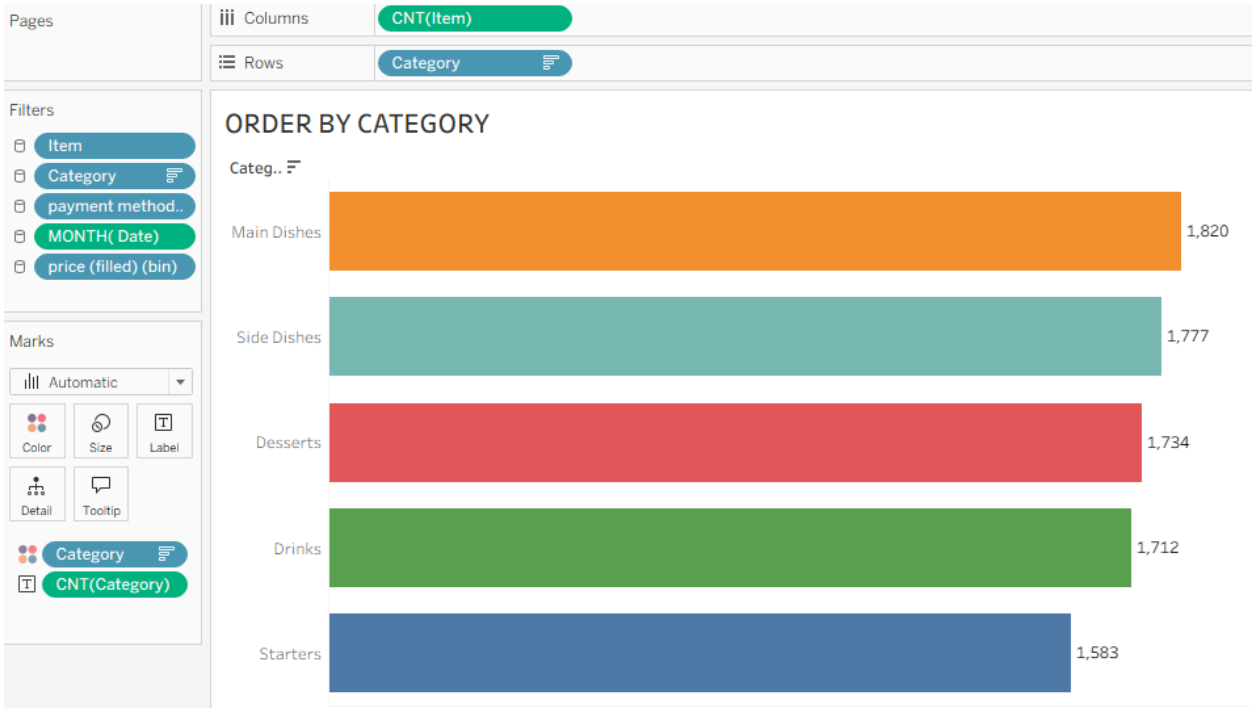
The line graph shows monthly order counts by month, comparing 2022 (purple) and 2023 (green). Orders fluctuate across months in both years, suggesting seasonality rather than a steady upward or downward trend. Overall, 2023 appears slightly more stable with a modest improvement toward the end of the year, finishing marginally higher than 2022, which shows sharper month-to-month swings.

2. Which item is the most sold overall?



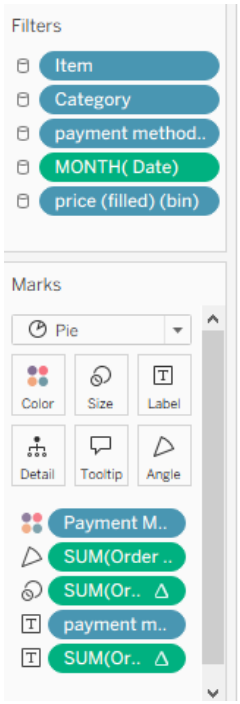
The bar chart shows the total number of orders for each item. Pasta Alfredo is the most sold item, indicating it is the most popular choice among customers. Cheese Fries has the lowest number of orders, making it the least popular item compared to the others.

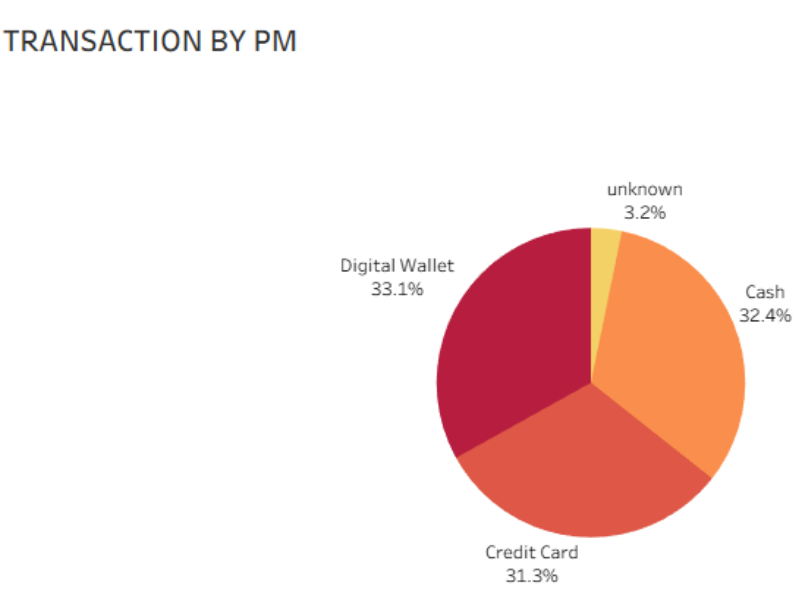
3. Which food category has the highest number of orders?



The bar chart shows the total number of orders by food category. Main Dishes have the highest number of orders, making them the most popular category. Starters have the lowest number of orders, indicating they are ordered less frequently compared to other categories.

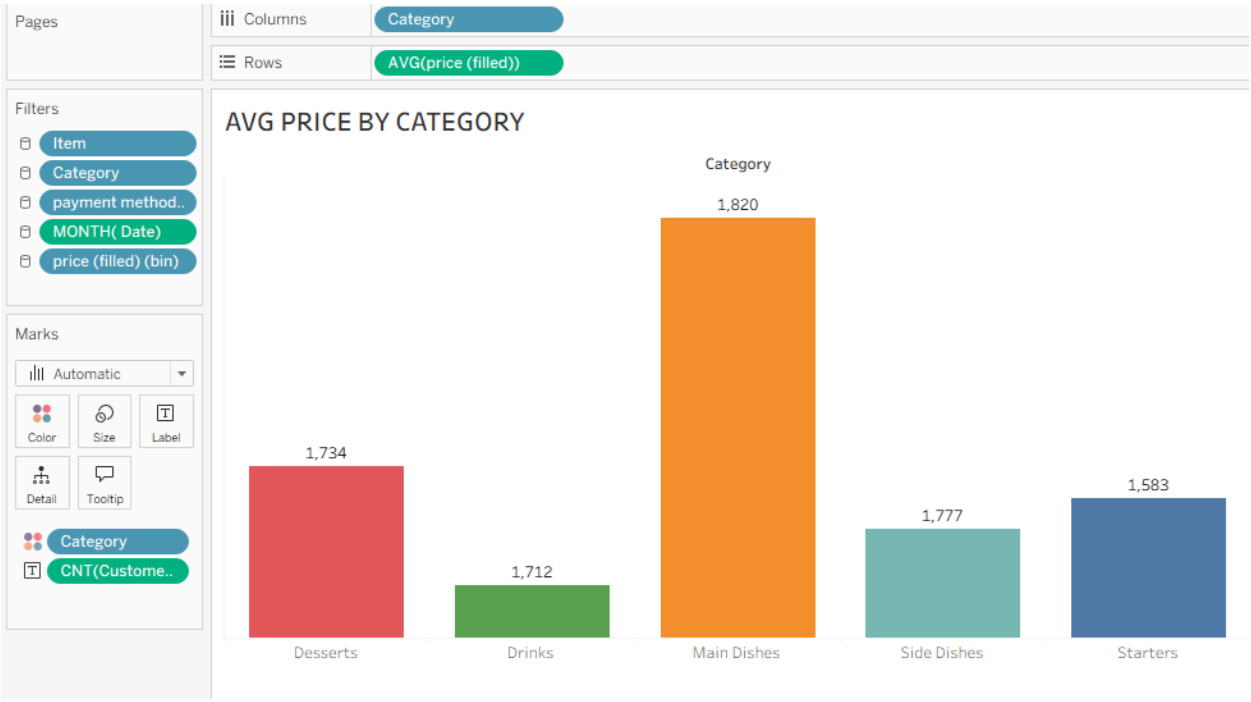
4. Which payment method is used most frequently for transactions?





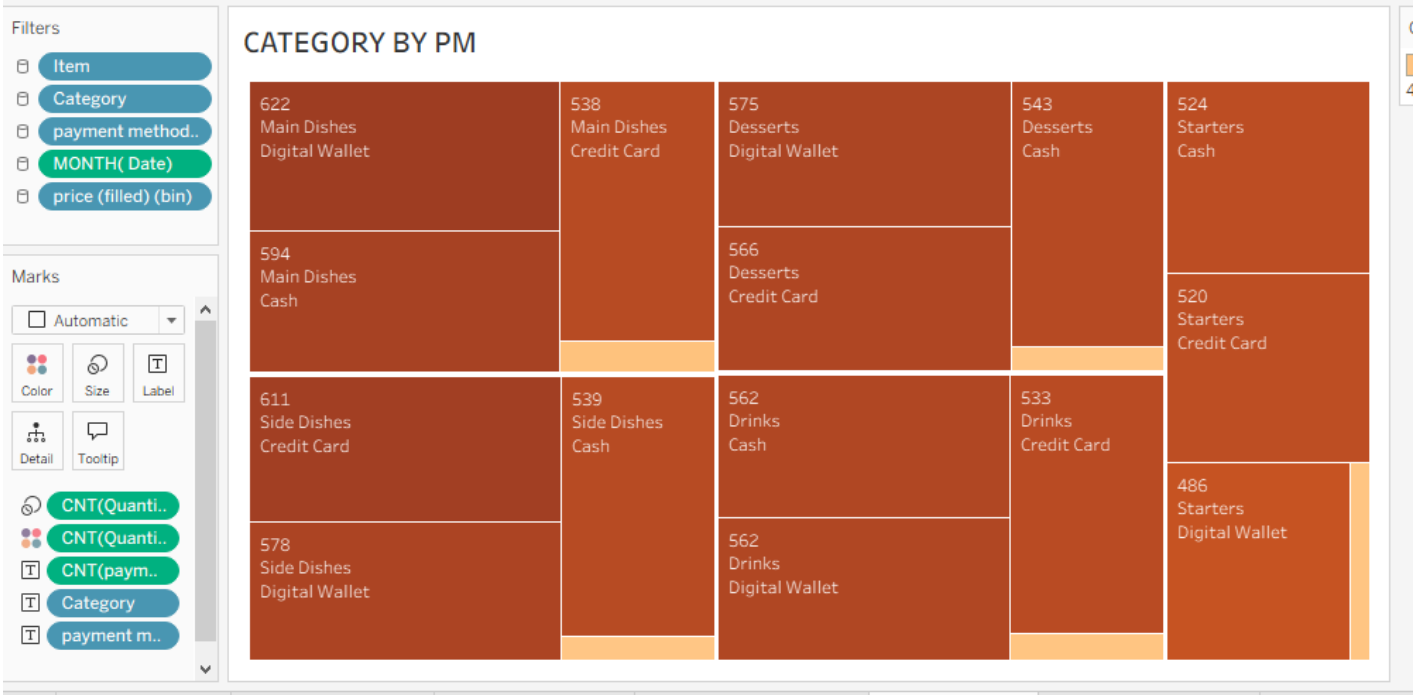
The pie chart shows the distribution of transactions by payment method. Cash and digital wallets account for the largest shares of transactions, each contributing roughly one-third of the total. Credit cards are used slightly less often, while the “unknown” payment method makes up a very small portion of transactions.

5. Which food category has the highest average price?



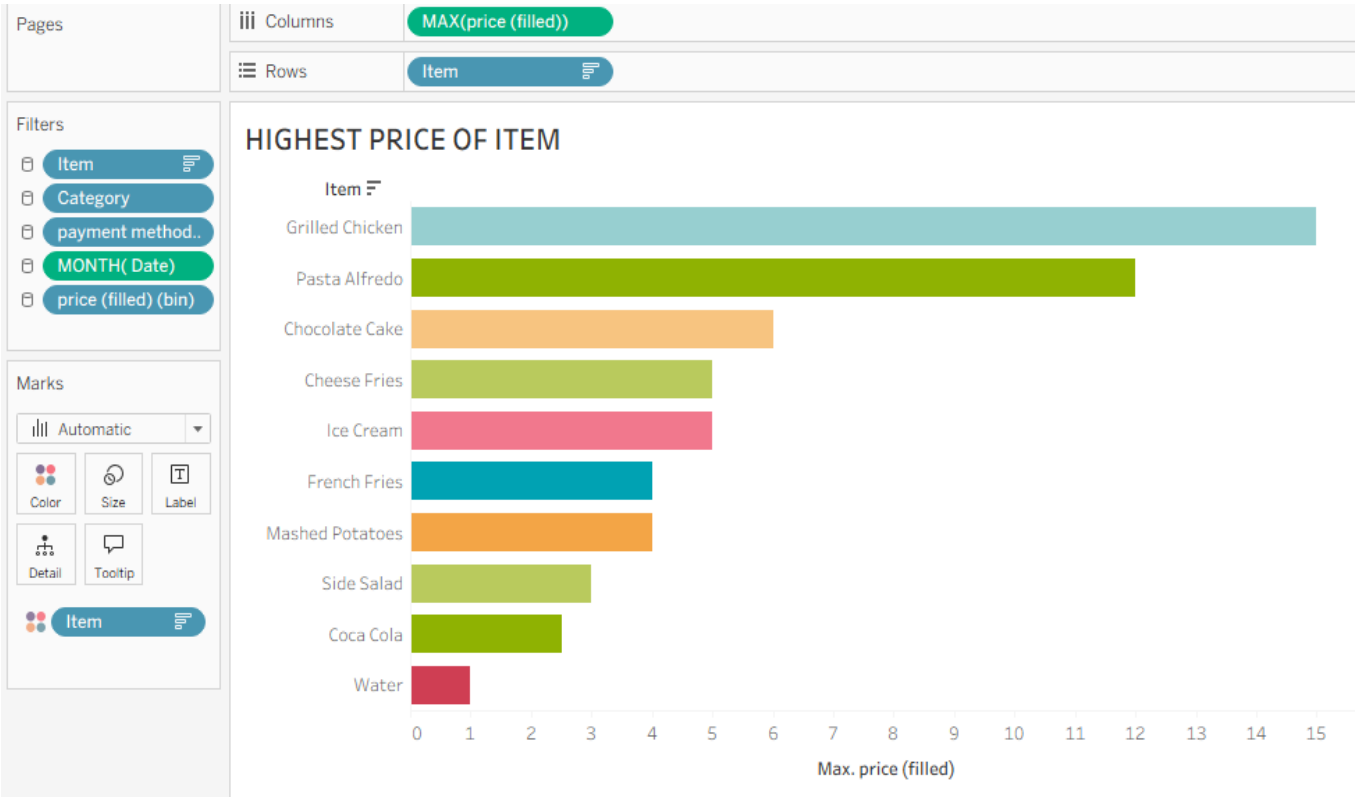
The bar chart shows the average price by food category. Main Dishes have the highest average price, indicating they are generally more expensive than other categories. Drinks have the lowest average price, while Starters, Side Dishes, and Desserts fall in between.

6. Which category and payment method combination has the highest number of transactions?



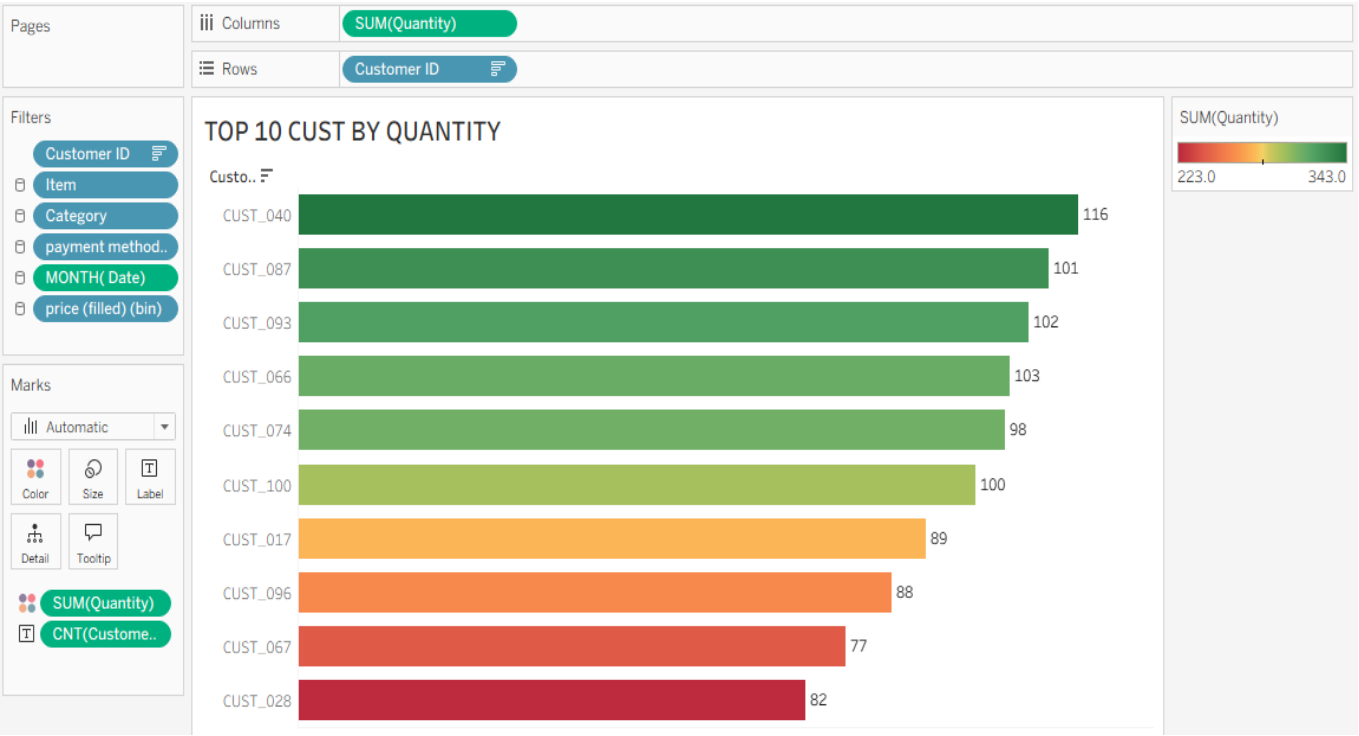
The treemap shows the number of orders by food category and payment method. Main Dishes have the highest number of transactions across all payment methods, especially through digital wallets and cash. Starters have the lowest number of transactions overall. Digital wallets and cash appear to be used more frequently than credit cards across most categories.

7. Which item has the highest recorded price?



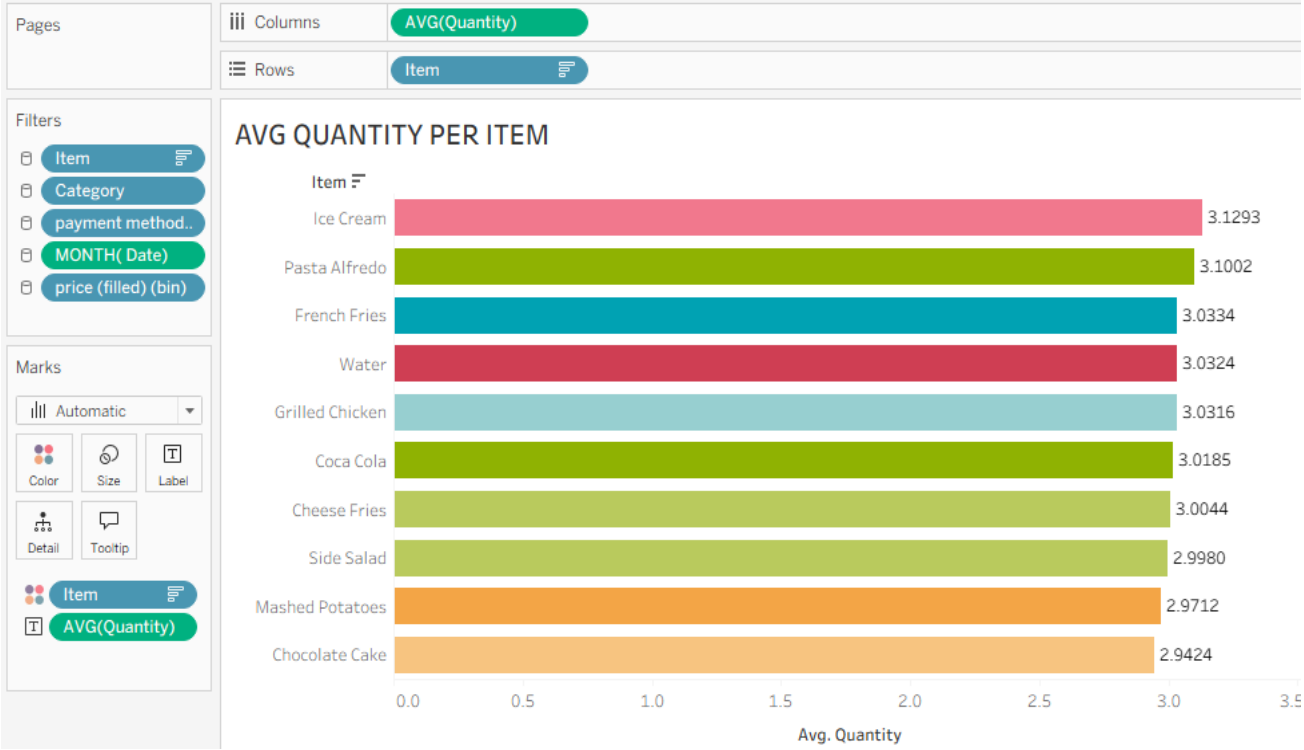
The bar chart displays the highest (maximum) price recorded for each item. Grilled Chicken has the highest maximum price among all items, making it the most expensive item at its peak price. Items like Water and Coca Cola have the lowest maximum prices, indicating they are the least expensive items.

8. Which customer has purchased the highest quantity of items?



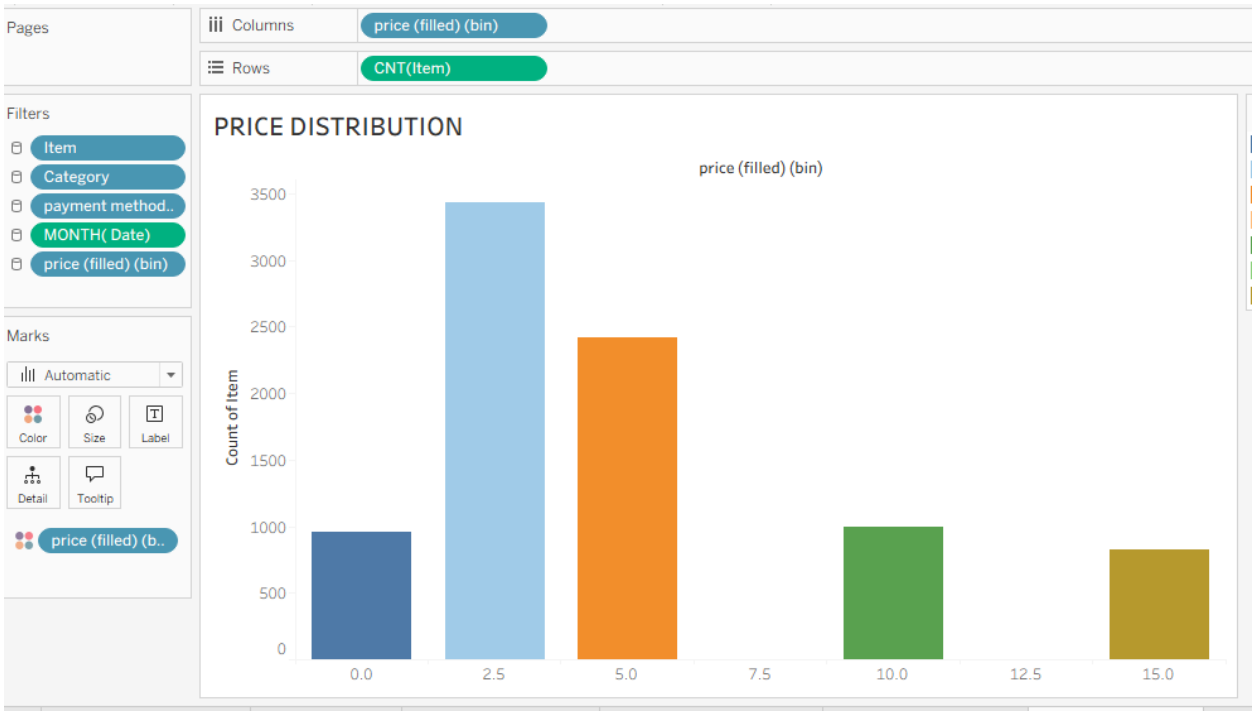
The bar chart shows the top 10 customers based on total quantity purchased. Customer CUST_040 has the highest purchase quantity, making them the most valuable customer by volume. The remaining customers have slightly lower but comparable purchase quantities, indicating fairly even buying behavior among the top customers.

9. Which item has the highest average quantity per order?



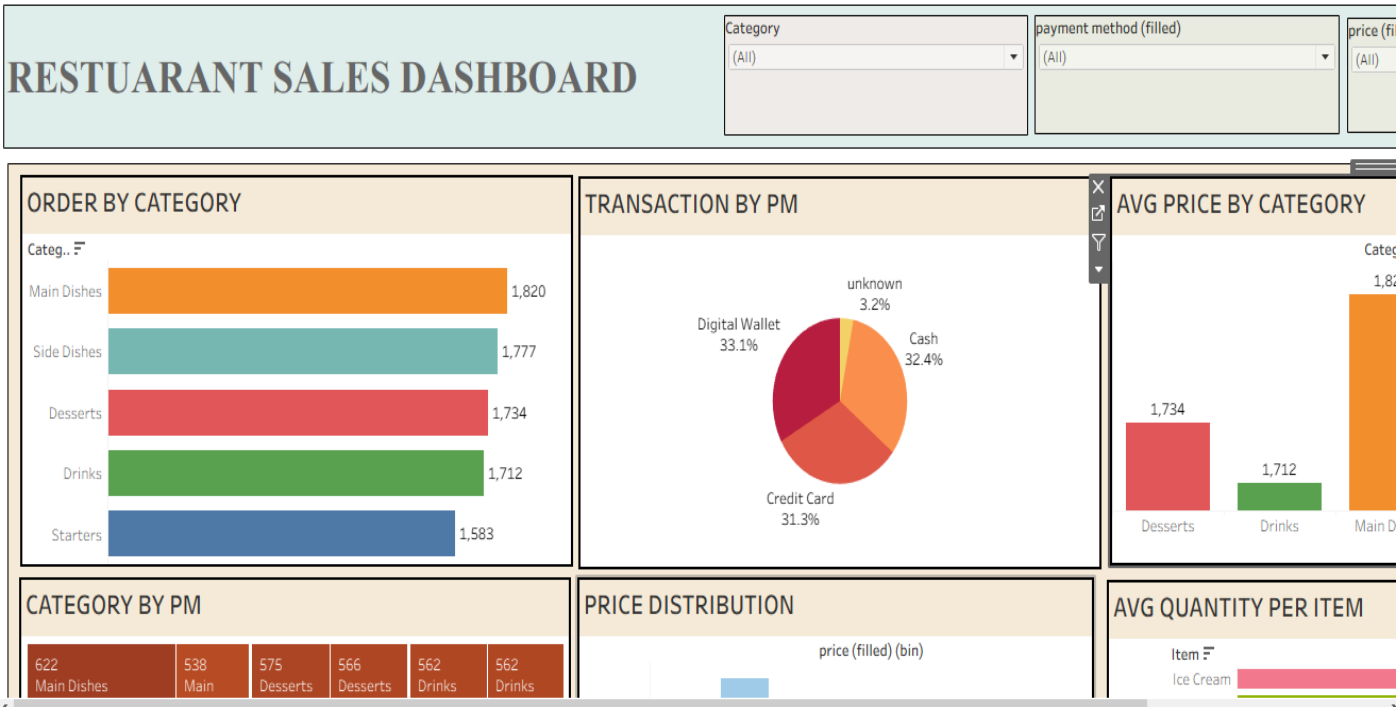
The bar chart shows the average quantity purchased per item. Ice Cream has the highest average quantity per order, indicating customers tend to buy it in larger quantities. Chocolate Cake has the lowest average quantity, meaning it is usually purchased in smaller amounts compared to other items.

10. Which price range contains the highest number of items?

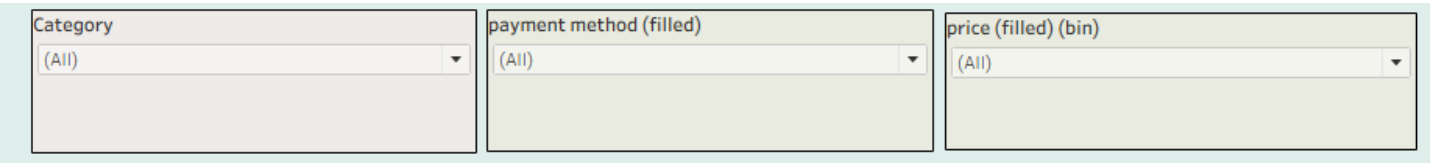


The chart shows the distribution of item prices grouped into price ranges (bins). Most items fall in the lower-to-mid price ranges, especially around the 2.5 and 5.0 price bins, indicating that the majority of products are moderately priced. Very few items fall into the higher price ranges, showing that expensive items are less common.

DASHBOARD



❖ ADDING SLICERS



CONCLUSION

The analysis of the restaurant order dataset provides valuable insights into customer purchasing behavior, menu performance, and payment preferences over the period from January 2022 to December 2023. By visualizing order trends, item categories, and transaction details in Tableau, patterns related to popular menu items, high-demand categories, and peak ordering periods can be clearly identified.

The dataset enables effective comparison of pricing, quantity ordered, and total order value, supporting data-driven decisions for menu optimization and inventory planning. Additionally, the evaluation of payment methods highlights customer preferences, which can help restaurants streamline payment options and improve the overall customer experience.

Overall, this dataset proves to be well-structured and highly suitable for business intelligence and visualization tasks in Tableau. The insights derived from this analysis can assist restaurant management in improving operational efficiency, enhancing customer satisfaction, and driving revenue growth through informed strategic decisions.