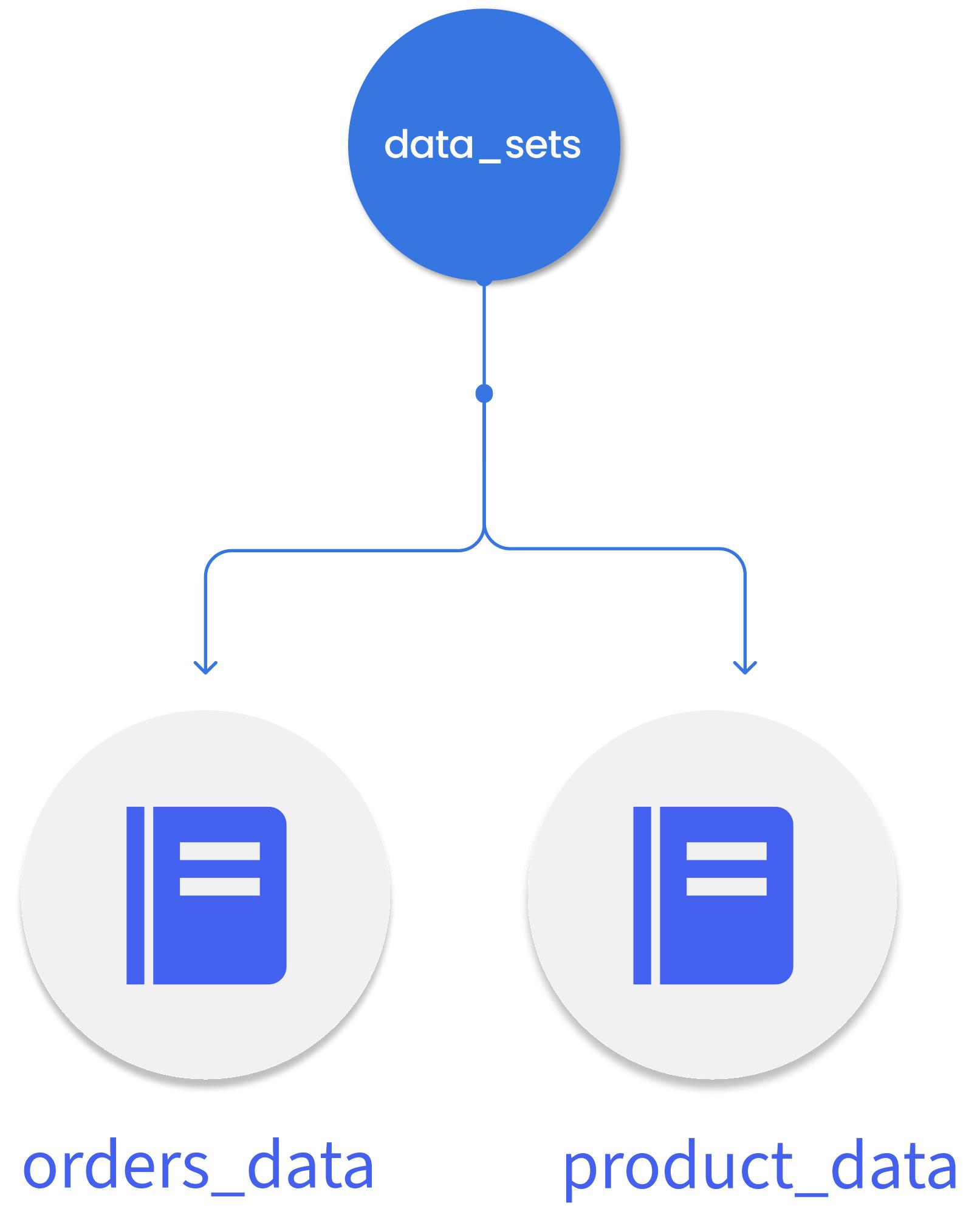


Problem Statement

- For this case study, I was provided with two data sets for a leading food ordering app.
- With the help of the data, I was asked to find some actionable insights, areas of improvement, and areas of opportunity to minimise the order cancellation while ensuring the user satisfaction.
- Also, provide the method of analysis and steps applied to the data to get the insights and mention the insights gathered.

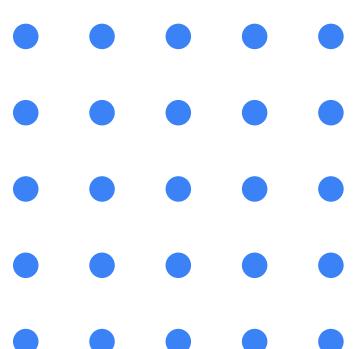
• • •
• • •
• • •
• • •
• • •



Questions

While reading the problem statement & analyzing the datasets, I outlined some questions to help me understand the objective.

- How should I approach the two different datasets to arrive at some meaningful insights? >
- What is the reason behind cancellation of orders? >
- Who cancels orders the most frequently between customers and restaurants? >
- Is there any specific type of food category which is getting cancelled most frequently? >

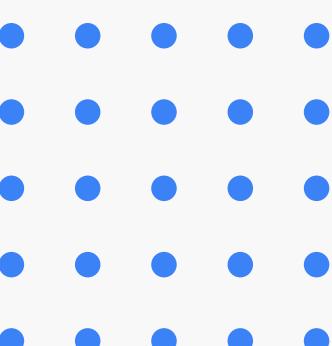


Initial Steps

Basic data transformation:

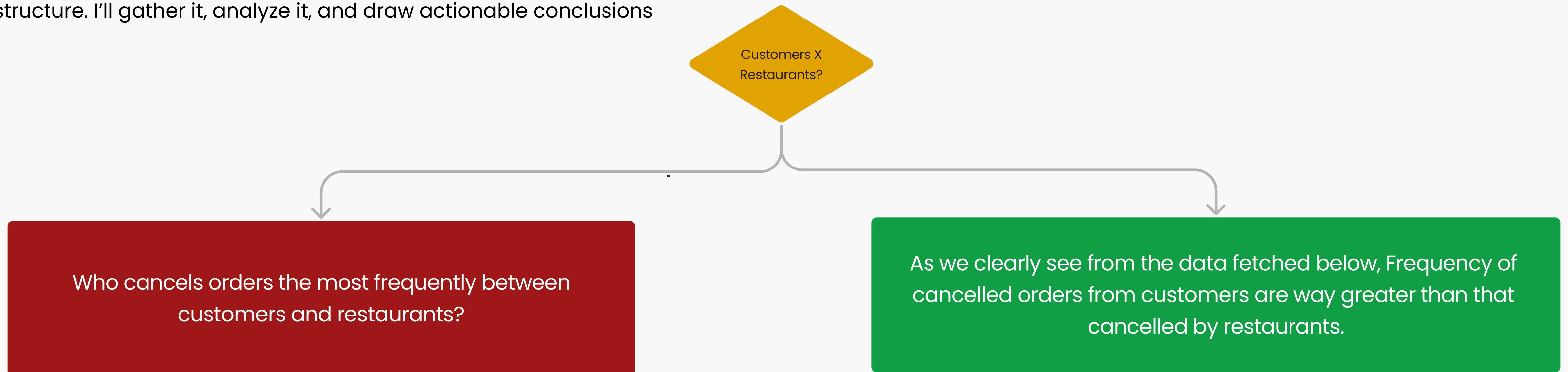
1. Excel workbook to .csv file
2. Modified column names
 - a. Replaced space to underscore for better use in MySQL
3. Import .csv to MySQLworkbench

A	B	C	D	E	F	G
Order_Date	Order_Time	Restaurant_ID	Order_ID	Quantities_Ordered	Cancellation_Mode	Reason_of_Rejection
2023-07-03	3:00:23 AM	1200	289602173	1	Order cancelled through app	Customer Refusal
2023-07-03	5:01:26 AM	1155	289603026	1	Order cancelled through app	Customer Refusal
2023-07-03	6:46:19 AM	1145	289605604	1	Order cancelled through app	Customer Refusal
2023-07-03	6:52:53 AM	1117	289605729	1	Order cancelled through app	Customer Refusal



Actionable insights

I approached this problem with the help of the top-down approach which will then filter down through a hierarchical structure. I'll gather it, analyze it, and draw actionable conclusions



```

36 • select Cancellation_Mode, count(Restaurant_ID) as Frequency from orders
37   group by Cancellation_Mode;
  
```

Result Grid | Filter Rows: _____ | Export: | Wrap Cell Content:

	Cancellation_Mode	Frequency
▶	Cancelled by Restaurant	2184
	Order cancelled through app	7893

- Now, I planned to segregate the number of cancelled orders from restaurant and group them according to the reason of rejection.
- The intuition behind this approach was to determine which group cancel orders more frequently among the restaurants.

```

41 •  select Cancellation_Mode, Reason_of_Rejection, count(Restaurant_ID) as Frequency from orders
42     group by Cancellation_Mode, Reason_of_Rejection;

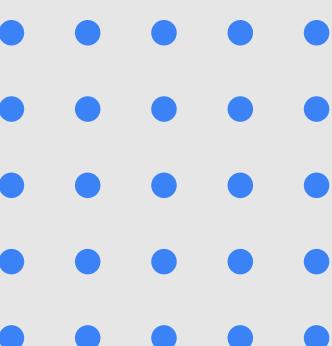
```

Result Grid | Filter Rows: _____ | Export: _____ | Wrap Cell Content: _____

Cancellation_Mode	Reason_of_Rejection	Frequency
Order cancelled through app	Customer Refusal	7893
Cancelled by Restaurant	Item Unavailable	697
Cancelled by Restaurant	Stock Shortage	858
Cancelled by Restaurant	Customer Refusal	391
Cancelled by Restaurant	Closed Premises	133
Cancelled by Restaurant	High Demand at the Restaurant	105

Stock Shortage	Maximum
Item Unavailable	
Customer Refusal	
Closed Premises	
High Demand at the Restaurant	Minimum

Order of Reason of cancelling orders by the Restaurants.



- Now, I decided to find a pattern of cancellation(if any) in the various categories of Food items - Packaged item and Buffet item.
- The intuition behind this approach was to determine which specific type of food category is frequently cancelled.

Is there any specific type which getting cancelled most frequently?

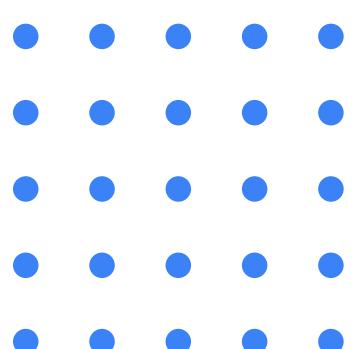
As we clearly see from the data fetched below, Frequency of buffet items being cancelled are way more than frequency of Packaged items being cancelled.

```
30 • select "Is_Packaged_Item", count(Is_Packaged_Item) as Frequency from product
31   where Is_Packaged_Item="yes";
```

Is_Packaged_Item	Frequency
Is_Packaged_Item	536

```
33 • select "Is_Buffet_Item", count(Is_Buffet_Item) as Frequency from product
34   where Is_Buffet_Item="yes";
```

Is_Buffet_Item	Frequency
Is_Buffet_Item	7754

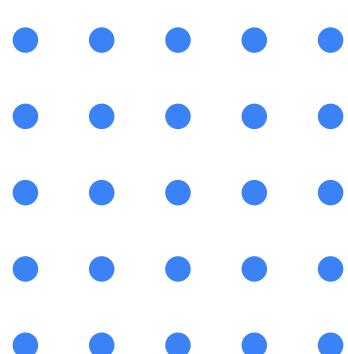


```
44 • select Restaurant_ID, count(Restaurant_ID) as Frequency from orders
45     group by Restaurant_ID;
```

Result Grid | Filter Rows: _____ | Export: Wrap Cell Content:

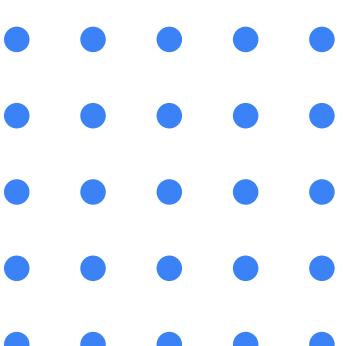
	Restaurant_ID	Frequency
▶	1002	1904
	1302	1348
	1129	722
	1200	713
	1282	489
	1145	465
	1084	442
	1135	434
	1117	393
	1284	334
	1395	221
	1074	216
	1346	182
	1094	182

I'd now wish to delve further and uncover information on that type of restaurants which accounts for the highest incidence of order cancellations and ordered them in descending order.



Till now, I was finding patterns and drawing insights from respective tables. Now I decided to draw insights using both the tables

Therefore, I decided to dig down and find out those which are accounting for maximum cancellation order in Package item food category. I did the same with Buffet item category.



```

59 • select orders.Restaurant_ID, count(product.Is_Packaged_Item)
60   AS Frequency_Packageitem_cancellation from orders, product
61 where product.Is_Packaged_Item="yes" and orders.Order_ID = product.Order_ID
62 GROUP BY orders.restaurant_id;

```

Restaurant_ID	Frequency_Packageitem_cancellation
1091	8
1002	47
1308	28
1312	1
1282	50
1129	74
1212	2
1311	2
1200	3
1084	20
1284	74
1302	87
1074	15
1124	5

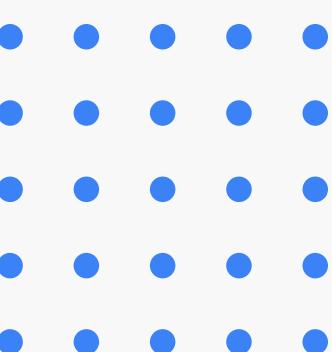
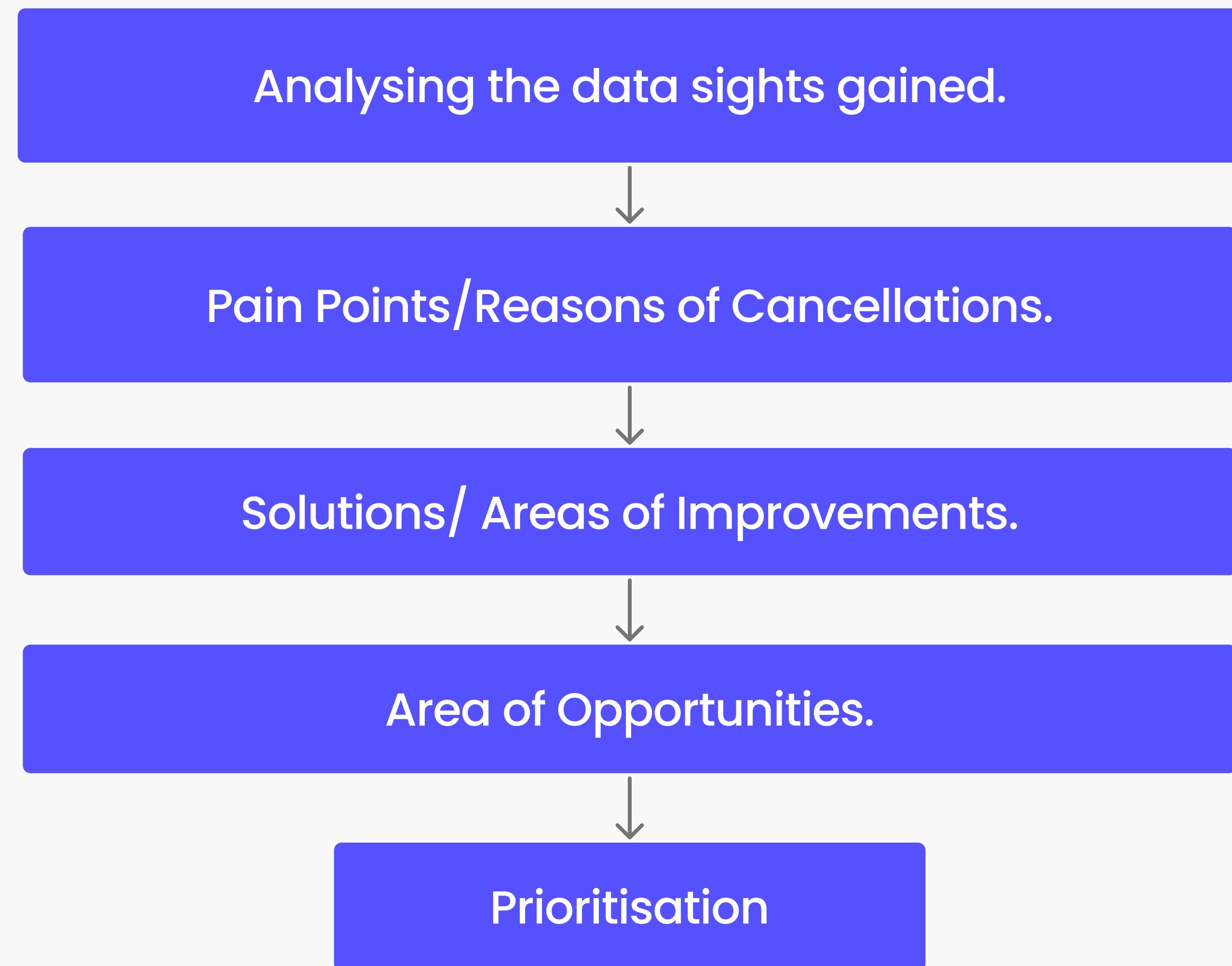
```

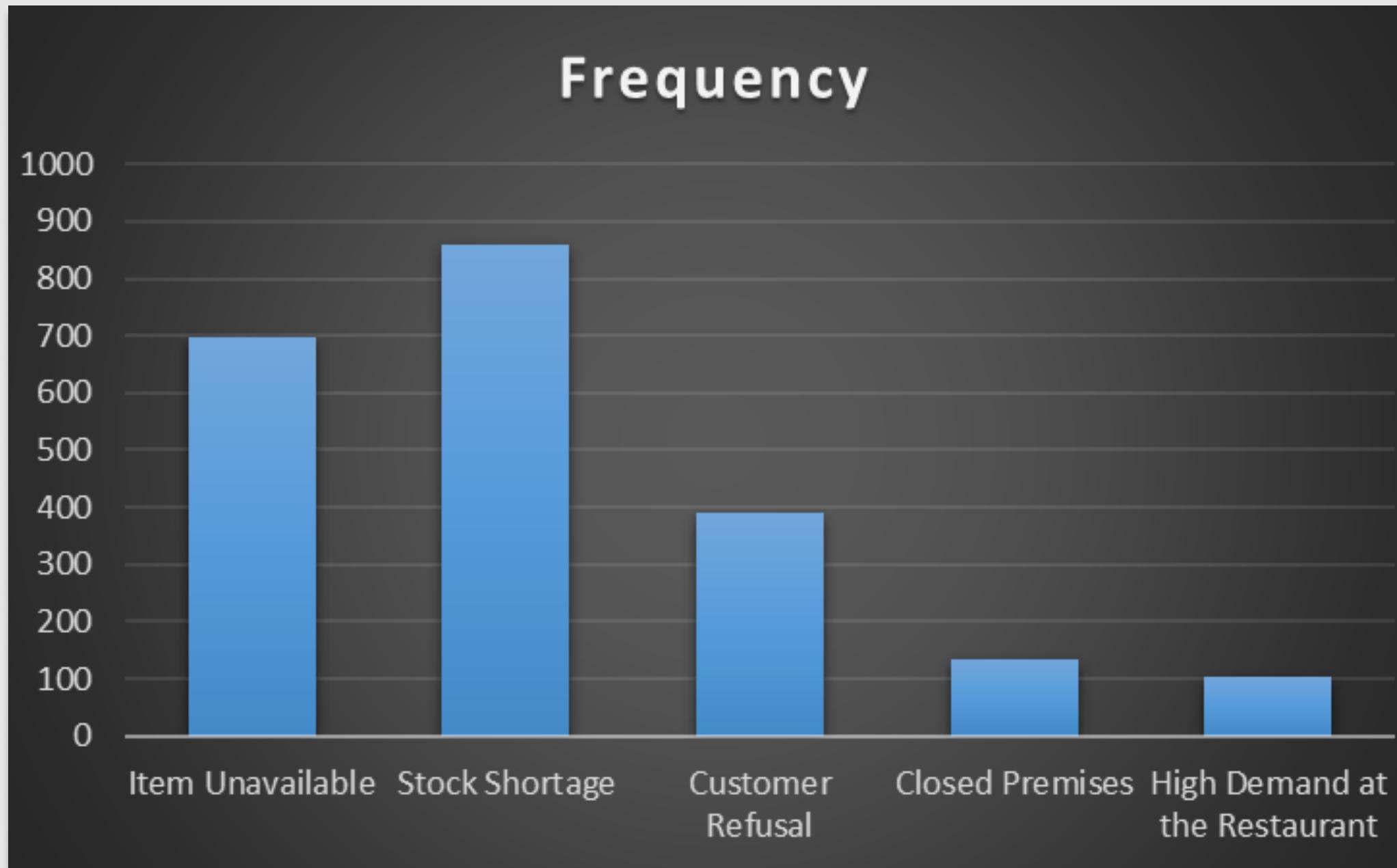
64 • select orders.Restaurant_ID, count(product.Is_Buffet_Item)
65   AS Frequency_Buffetitem_cancellation from orders, product
66 where product.Is_Buffet_Item="yes" and orders.Order_ID = product.Order_ID
67 GROUP BY orders.restaurant_id;

```

Restaurant_ID	Frequency_Buffetitem_cancellation
1091	17
1084	319
1129	558
1145	396
1094	198
1214	96
1002	1532
1285	56
1301	37
1074	195
1308	35
1312	4
1313	14
1234	5

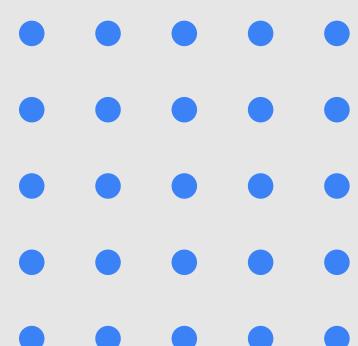
Now I'll use this framework -



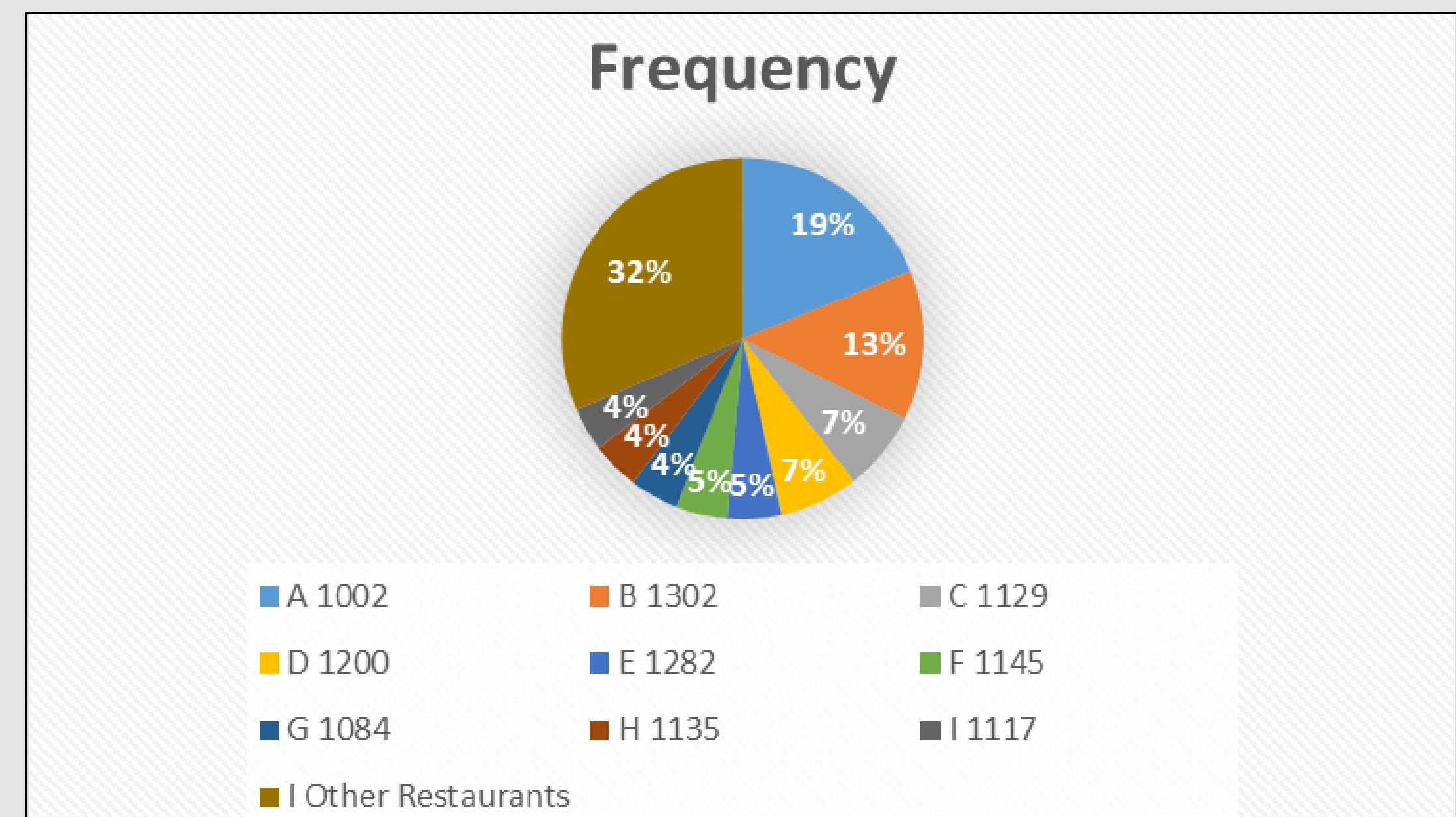


Data Insights Gained

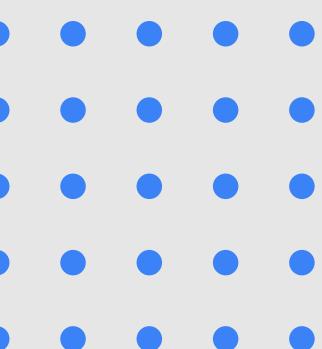
1. Customers are canceling frequently from their side instead of the restaurants.
2. Restaurants are cancelling orders majorly because of stock shortages and due to unavailability.

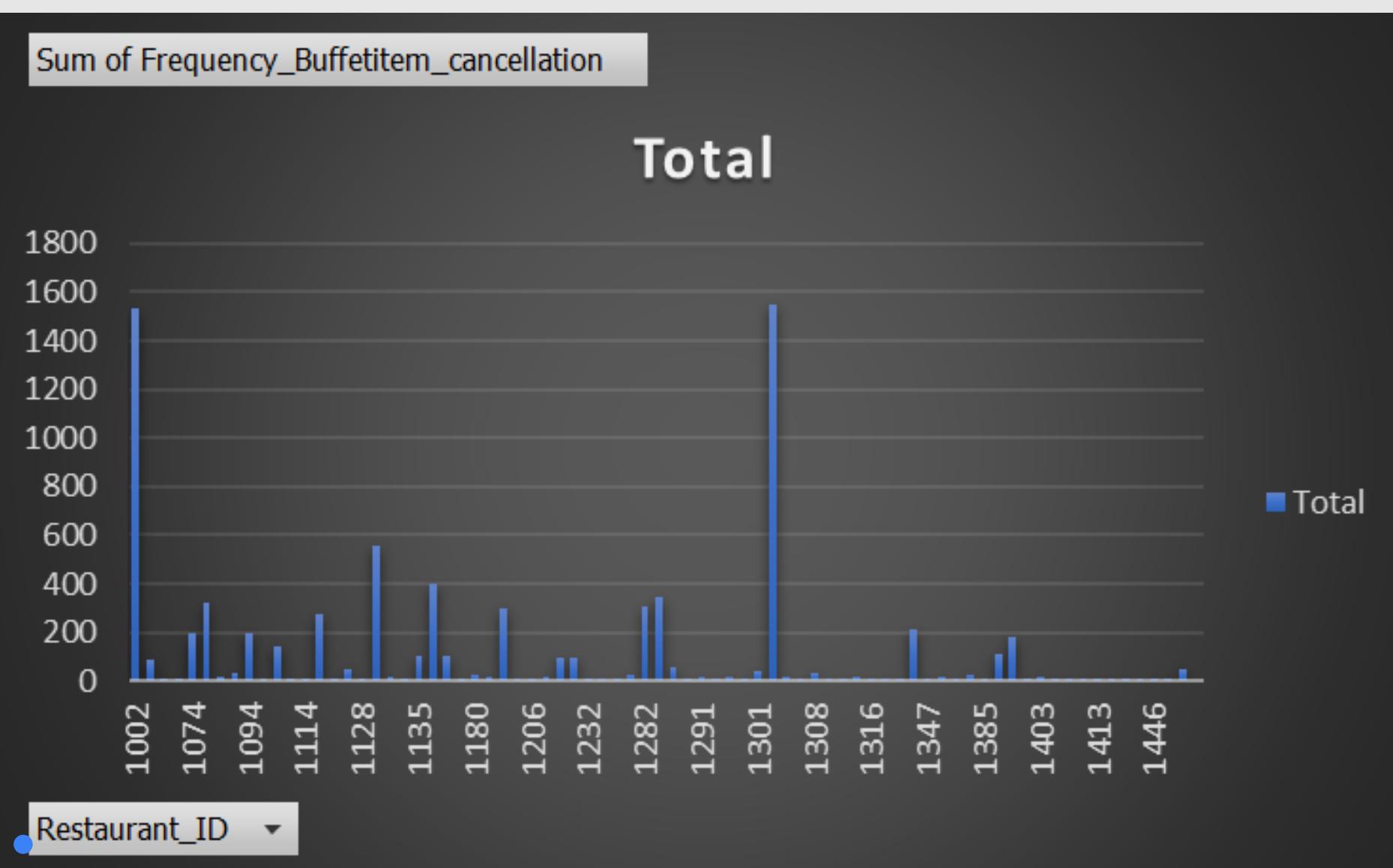
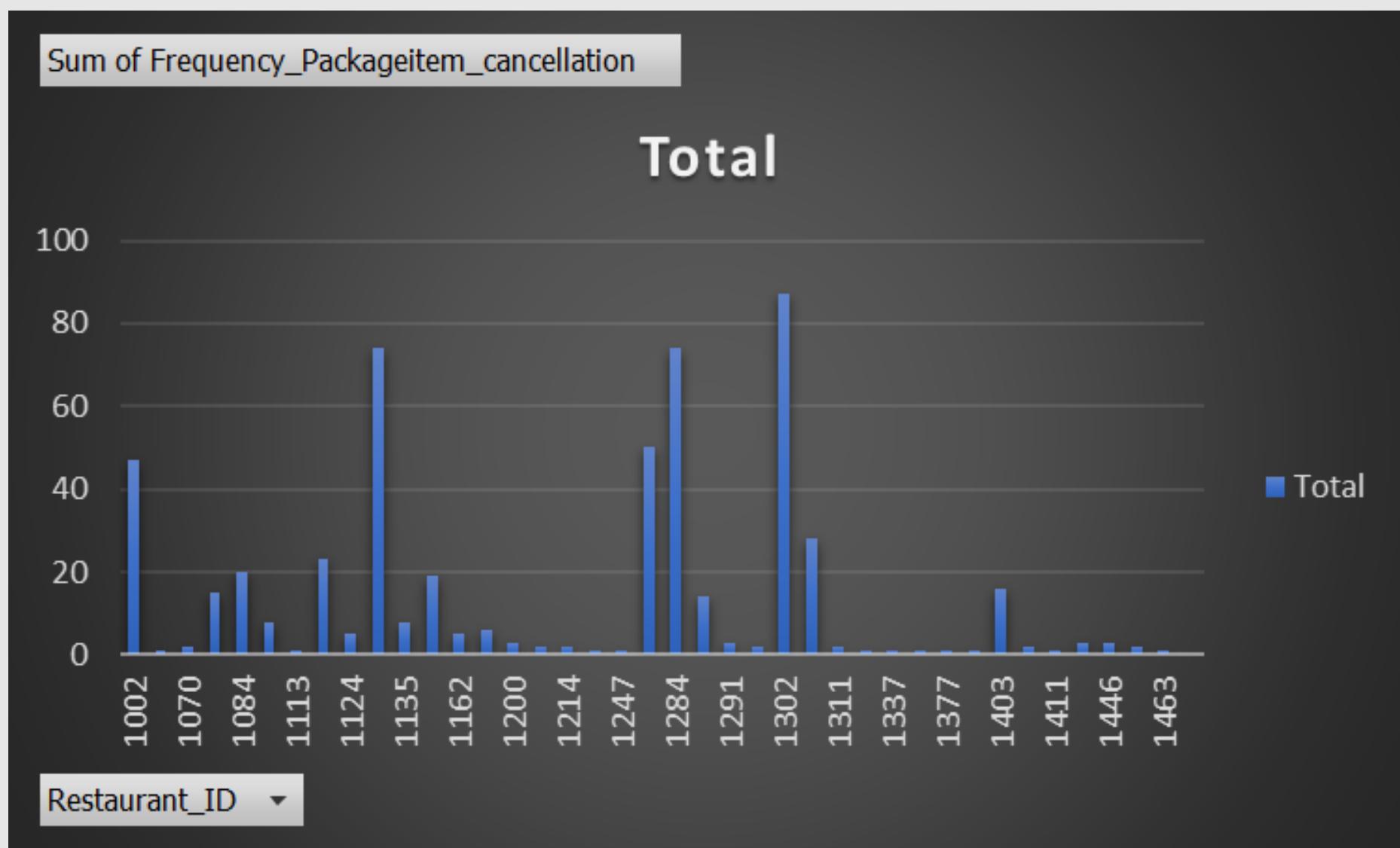


3. Customers are likelier to cancel buffet items than packaged items and non-MRP items.
4. There are specific restaurants whose orders are getting cancelled frequently compared to other restaurants.

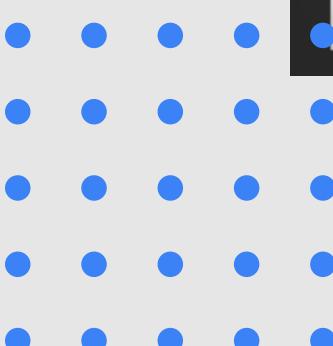


*Other Restaurants refers to all those restaurants whose frequency of cancellation is less than 393.





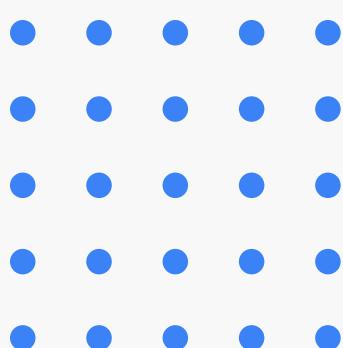
5. Customers are cancelling specific products(i.e, packaged, buffet items) frequently from specific restaurants.



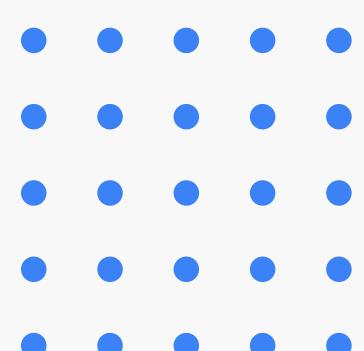
Pain Points / Reasons for Cancellation



- 1.** Restaurants may be facing Stock Shortages due to high demand during peak hours.
- 2.** Customers often cancel orders if the estimated delivery time is too long.
- 3.** Inaccurate orders, missing items, or incorrect food can lead to cancellations.

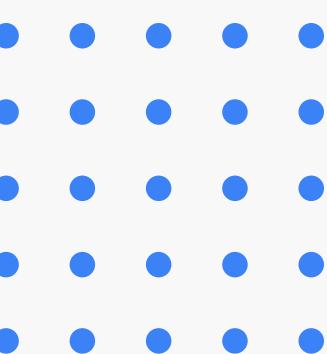


5. Technical issues on the restaurant's delivery platform app, such as slow loading times, can frustrate customers and lead to cancellations. Restaurants may deliver the wrong food items that customers didn't have ordered.
6. Customers might have found better opportunities on other platforms, which caused order cancellation.
7. Some customers change their minds after placing an order.
8. Customers may cancel if they read negative feedback before their order is delivered.



Areas of Improvement/ Solutions

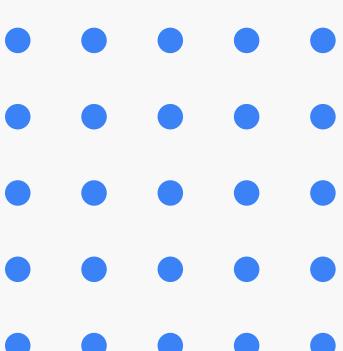
1. Enhance the management of inventory forecasts and offer information on item availability in real time as I found that Stock shortage was the major cause of Cancellation by the Restaurants.
2. Improve delivery routes, provide precise time estimates, and alert customers to delays.
3. Implement a double-check system where delivery drivers verify the order with the customer before handing it over.
4. Maintain a dependable delivery system and routinely fix the app's bugs and technical issues.
5. Have a fair cancellation policy and send out order confirmations.



Areas of Opportunity

A) RFM Analysis (Recency, Frequency, Monetary) is used to segment users and understand customers behaviors and perform user segmentation.

- 1) Recency (R): It focuses on how recently a customer has placed an order. Identify customers who frequently change their minds and cancel orders shortly after placing them. Target these customers with tailored promotions or incentives to encourage them to complete orders.
- 2) Frequency (F): Frequency determines how often a customer places orders. Segment customers based on the order frequency. High-frequency customers occasionally cancel orders might benefit from personalized recommendations or early order confirmations to reduce cancellations.
- 3) Monetary (M): Monetary analysis assesses the value of a customer's orders. Identify high-value customers who cancel orders infrequently but may be at risk of doing so.



B) Recognizing the regional food trends:

I analyzed the Product table data provided and found the most selling items.

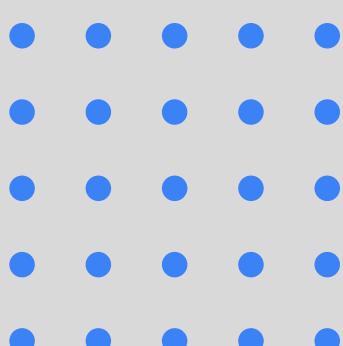
Now, for the restaurants that are not selling these products like breakfast items, veg lunch etc., this is a perfect opportunity to bring these items to the menu to increase their sales.

I tried to find the top-selling item in every restaurant. Then It provides an opportunity to brand their restaurants based on these products.

```
70 •  Select Product_Name, count(*) as Frequency from product
71      group by Product_Name;
```

Result Grid | Filter Rows: Export: | Wrap Cell Contents:

	Product_Name	Frequency
▶	Breakfast	364
	Veg Lunch	339
	Ginger Tea	145
	Masala Dosa	144
	Tea	127
	Non Veg Lunch	100
	Plain Dosa	80
	Chicken biryani	79
	Chicken Combo	60
	Non-Veg Lunch	49
	Chole Bhature	47
	Bombay Style Sandwich	45
	Samosa	44
	Ven Birvani	42



Prioritization

