# PROBLEM
STATEMENT

For this case study, I was provided with 2 data sets for a leading **food ordering platform**. With the help of the data, I was asked to find some **actionable insights**, **areas of improvement**, and **areas of opportunity** for these restaurants. Also, provide the method of analysis and steps applied to the data to get the insights and mention the insights gathered to draw a conclusion to **reduce cancellation rates**

Data sets------- >
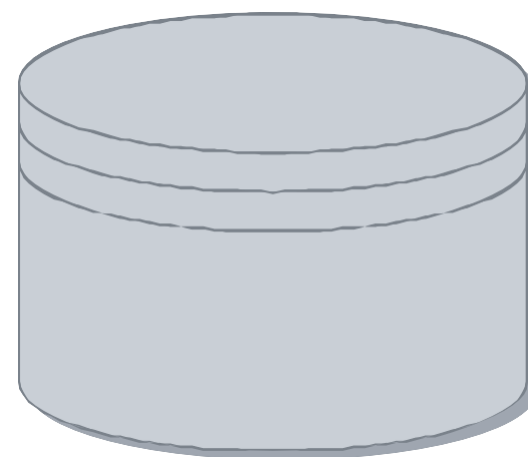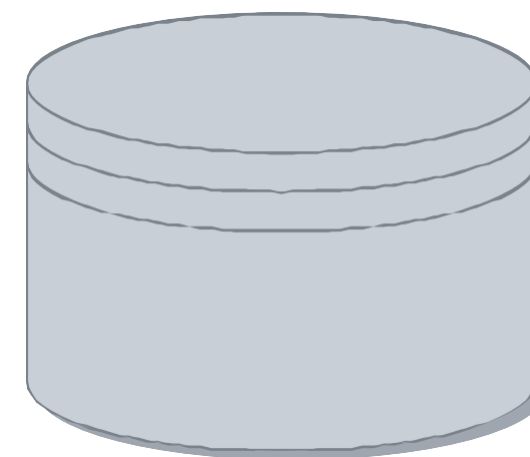
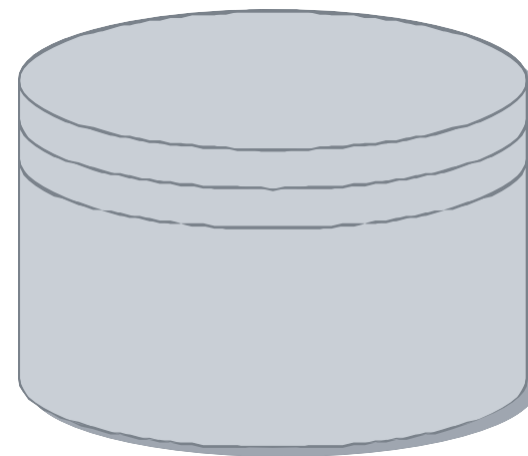PRODUCT_DETAILS   CANCELLED_ORDERS
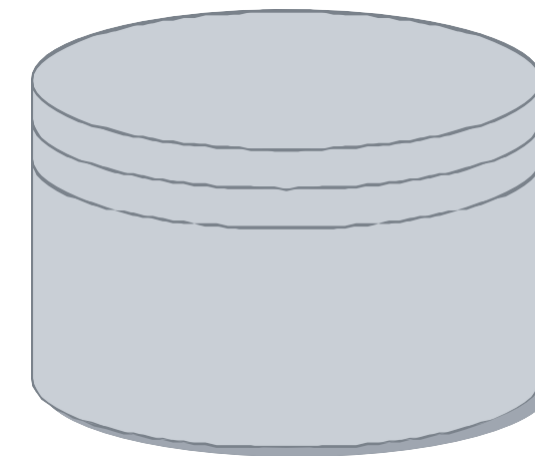
QUESTIONS

- I THOUGHT ABOUT HOW TO USE SPECIFIC PARAMETERS TO DRAW A CONCLUSION ?
- DEPENDENCE OF VARIOUS FACTORS ON THE CANCELLATION RATE.

Data sets------- >
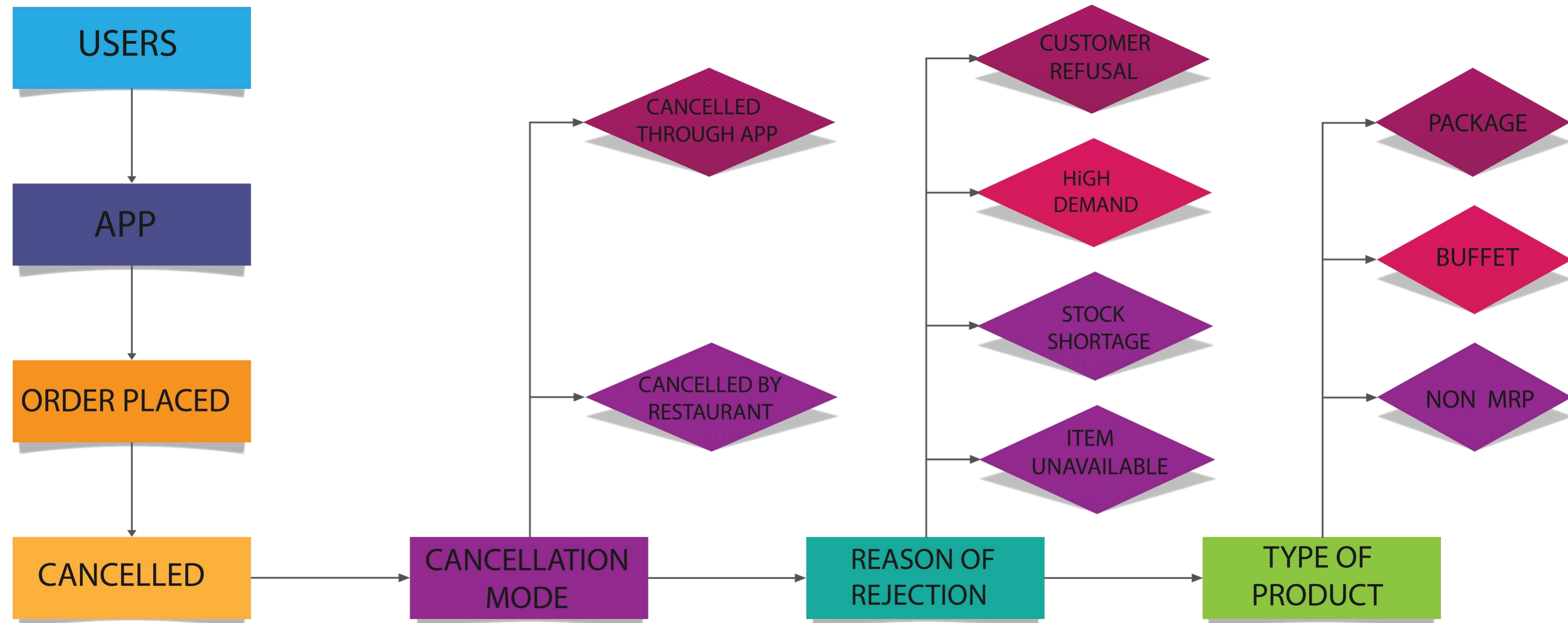
PRODUCT_DETAILS

CANCELLED_ORDERS

SETTING UP DATABASE

- Excel workbook exported to 2 .csv files
  - Imported .csv to MYSQL workbench

2 Data sets ------->

»¿Order Date	Order Time	Restaurant ID	Order ID	Quantities Ordered	Cancellation Mode	Reason of Rejection
023-07-06	12:09:55 PM	1135	291028054	2	Cancelled by Restaurant	Customer Refusal
023-07-06	12:20:54 PM	1117	291035864	1	Cancelled by Restaurant	Stock Shortage
023-07-06	12:21:41 PM	1002	291036417	1	Order cancelled through app	Customer Refusal
023-07-06	12:23:01 PM	1162	291037285	1	Order cancelled through app	Customer Refusal
023-07-06	12:30:04 PM	1214	291042883	1	Order cancelled through app	Customer Refusal

Product ID	Product Name	Product Price	Quantity Ordered	Total Value	Is Packaged Item?	Is Buffet Item?
68759	Veg Soft Noodles	165	1	165	No	No
68829	Watermelon Juice	49	1	49	No	No
68838	Pomegranate Juice	99	2	198	No	No
68838	Pomegranate Juice	99	2	198	No	No
69028	Chicken Club Sandwich	185	1	185	No	No

CANCELLATION FLOW

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┌─────────────┐
│    USERS    │
└─────────────┘
       │
       ▼
┌─────────────┐
│     APP     │
└─────────────┘
       │
       ▼
┌─────────────┐
│ ORDER PLACED│
└─────────────┘
       │
       ▼
┌─────────────┐
│  CANCELLED  │
└─────────────┘
```

CANCELLED THROUGH APP

CANCELLED BY RESTAURANT

CUSTOMER REFUSAL

HiGH DEMAND

STOCK SHORTAGE

ITEM UNAVAILABLE

PACKAGE

BUFFET

NON MRP

CANCELLATION MODE

REASON OF REJECTION

TYPE OF PRODUCT

APPROACH 1

- Initially, considering product types for analysis was considered. However, utilizing the 'DISTINCT' function revealed over 50 unique items, indicating potential vagueness in the analysis based solely on types. Thus, a more comprehensive approach was adopted.

- Order cancellations might often be linked to a common factor like ETA (Estimated Time of Arrival). Unfortunately, due to limited data access, this aspect couldn't be explored in this analysis and A/B testing could have been performed between two platforms.

APPROACH 2

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INTUITION-

SO , FIRST WE WILL ANALYSE THE DIFFERENT CATEGORIES UNDER 1 COLUMN AND TRY TO PLOT THEIR TAKE ON THE CANCELLATION RATE SO THAT WE CAN CONCLUDE A BETTER DECISION

APPROACH 2

- First, we calculated the cancellation rate of all.
  categories based on reason of calculation

Reason of Rejection	num_cancellations
Stock Shortage	858
Item Unavailable	697
Customer Refusal	391
Closed Premises	133
High Demand at the Restaurant	105

'num_cancellations'

■ Stock Shortage   ■ Item Unavailable
■ Customer Refusal   ■ Closed Premises
■ High Demand at the Restaurant
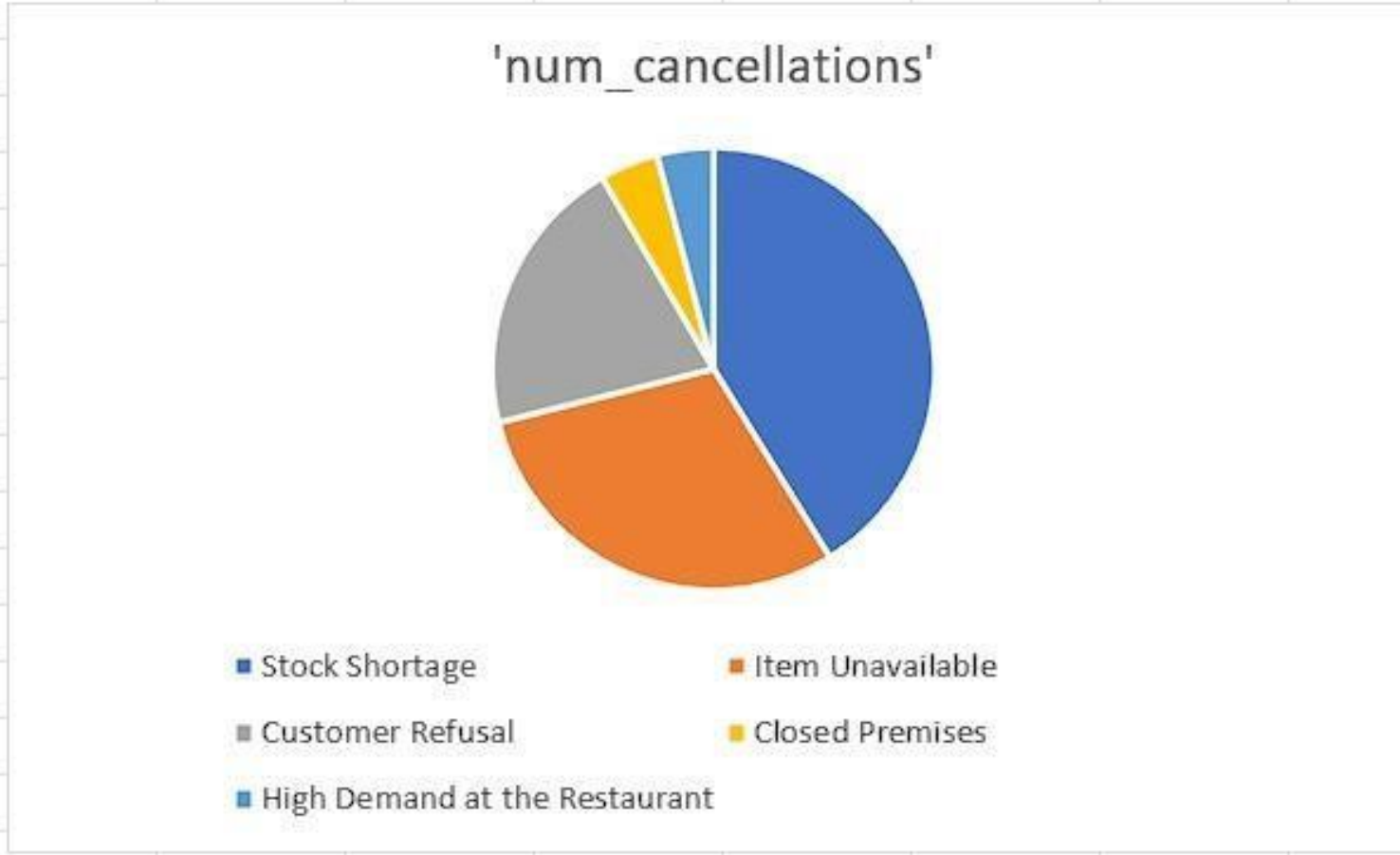
APPROACH 2

- Then we calculated the cancellation rate
  by restaurant and customer

CANCELLATION RATE BY RESTAURANT

	total_orders	total_cancellations	cancellation_rate
▶	10077	2184	21.67

CANCELLATION RATE BY CUSTOMER

	total_orders	total_cancellations	cancellation_rate
▶	10077	7893	78.33

APPROACH 2

- THE BELOW DATA SHOWS THE CANCELLATION BY RESTAURANT FOR DIFFERENT TYPE OF FOOD.

IsPackaged	IsBuffet	total_orders	total_cancellations	cancellation_rate
No	No	3208	1973	61.50
Yes	Yes	435	64	14.71
No	Yes	6531	521	7.98

APPROACH 2

- THEN I CALCULATED THE MAXIMUM ORDER CANCELLATION RATE IN REFERENCE TO RFID.
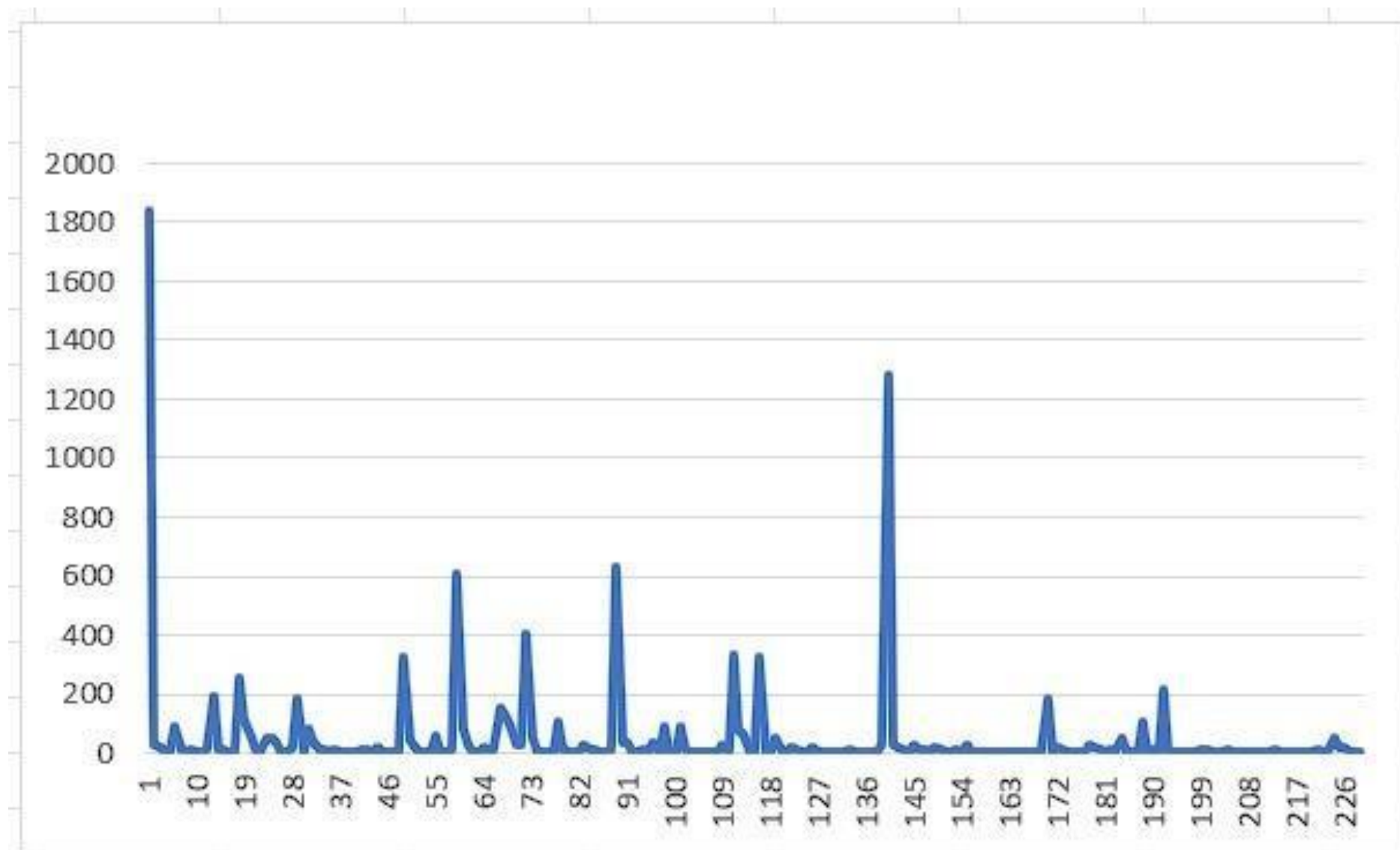
AREAS OF
IMPROVEMENT

- FIRST OF ALL RESTAURANTS SHOULD BE GIVEN WARNING BASED ON STOCK SHORTAGE/ MAKE THE DISH UNAVAILABLE BASED ON NUMBER OF CANCELLATIONS BY THAT RESTAURANT ID.
- NOW, WHY IS THE CUSTOMER CANCELLING THE ORDER CAN BE SEEN BY HAVING AN ADDITIONAL DATA OF REVIEW AND FEEDBACK TO REDUCE THE CANCELLATION ORDER THERE , BECAUSE THAT CONSTITUTES ABOUT 78%OF DATA.

AREAS OF OPPORTUNITY

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- ETA IS A BIG OPPORTUNITY TO MAKE THE RETENTION RATE OF CUSTOMER HIGH BY REDUCING CANCELLATION RATE OF ORDERS.
- BASED ON THE TOP SELLING ITEMS , RESTAURANTS CAN BE GIVING A PREDICTING ORDER FORECAST TO STOCK ACCORDING TO THE DATA . THIS WILL SIGNIFICATLY LOWER THE CANCELLATION RATE . COULD BE ACHIEVED BY INTEGRATING ML-MODELS ON THE DATABASE.
- NOTHING BEATS THE GOOD OLD FEEDBACK/RATING SYSTEM TO ANALYZE THE DATA MORE EFFICIENTLY.
- ALL THESE CAN BE ACHIEVED BY BY ENSURING USER SATISFACTION.

MODIFICATIONS IN EXISTING CANCELLATION FLOW

- CANCELLATION FEES CAN BE APPLIED TO HIGH CANCELLATION RID'S BY THE RESTAURANT END.
- CUSTOMERS CAN BE GIVEN A TIME BOUND CANCELLATION CYCLE.
- CUSTOMERS CAN ALSO BE GIVEN THE CYCLE OF THEIR ORDER i.e FROM ORDER->PREPARING->DISPACHED->OUT FOR DELIVERY . THIS WILL BE PSHYCHOLOGICAL WAY TO CLEAR UNCERTAINITY OF ORDER.

THANK YOU!