Project and Data

This applications project is the result of your involvement with a local bakery. The objective of this project is to provide hands-on experience in data visualization, inventory classification, and pricing strategy analysis to improve the operations of a local bakery called "Wilmington Bakers." The project will involve using the provided dataset to make data-driven decisions. Note, due to prior commitments the client couldn't get involved. As a result, the name of the bakery is changed, as well as original data from the client is simulated to preserve the time series elements and other characteristic of the various products the bakery sells.

Wilmington Bakers (WB) has earned the trust of the locals. The bakery has been selling a delicious assortment of treats, breads, cookies, and cakes for several decades. The firm wants to make informed managerial decisions using data analytics. Particularly in pricing optimization for the top seller, dynamic dashboard updates with new data, and inventory management.

The simulated dataset provided includes detailed point of sales (P.O.S.) data spanning from January 1, 2021, to April 30, 2024, covering various categories of products.

Data Details

The dataset used in this project includes the following columns:

- **Date**: The date of the transaction.
- **Time**: The time of the transaction.
- **Category**: The main category of the item (e.g., Bread, Cakes).
- **Sub-Category**: The specific type of item (e.g., Sourdough, Eclair).
- **Price**: The selling price of the item in dollars.
- **Sales Volume**: The number of units sold on that day.

Price Optimization:

To study the price sensitivity of Eclairs, WB did a price sensitivity study in April of 2024 by varying the price from 4.3 to 6 randomly.

Assume the market size is 150 Eclairs/day, WB has a capacity to produce a maximum of 500 Eclairs/day, WB wants to limit the price per unit of Eclairs to a maximum of $6/day. It costs $1.75 for WB to make an Éclair. WB also wants to sell at least 50 Eclaris/day. What is the optimal price WB should charge the customers for each Éclair sold?

ABC Analysis:

Conduct ABC analysis using profit as the criterion. Classify using the following scheme. 0-65% A, 66-80% B, 81-100% C.

Dashboard:

Develop a dynamic dashboard that shows salient features in the data that the manager should know. Have the provision to display the rank of the item and other relevant statistics.

Display Items:

Based on your analysis suggest a scheme for the display of items that will catch the attention of the customers. Assume a display case with 4 rows. Each row can hold 6 trays.

Note: The above are the minimum expectations. Generally, analyst are creative and think outside the box, and their project statement and output have a wider scope than I envisaged.

Data

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