**Forecasting the Number of Orders for Upcoming 10 Weeks for a Meal Delivery Company**

**Problem statement**

How can a meal delivery company operating in multiple cities forecast the number of orders for centers across these cities for upcoming 10 weeks by using number of orders, promotions, and meal prices of 145 weeks related data.

**Context**

A meal delivery company operates in multiple cities and has various fulfillment centers across these cities to dispatch meal orders to customers. The company aims to forecast the upcoming weeks' orders, allowing these centers to plan their raw material stocks accordingly. The majority of raw materials are replenished weekly, and due to their perishable nature, precise procurement planning is crucial. Accurate demand forecasts are also vital for staffing the centers effectively. With the provided information, the objective is to predict the demand for the upcoming 10 weeks (Weeks: 146-155) for the center-meal combinations in the test set.

**Data Source**

The data are sourced from <https://www.kaggle.com/datasets/kannanaikkal/food-demand-forecasting> and consists of four datasets: fulfilment\_center\_info.cvs, meal\_info.cvs, train.csv, and test.csv.

* fulfilment\_center\_info.csv contains a total of 5 features for 77 centers
* meal\_info.csv contains a total of 3 features for 52 meals
* train.csv is composed of a total of 9 features collected from 456k orders
* test.csv is composed of a total of 8 features collected from 32k orders

train.csv and test.csv are identical except there’s no order number column in test.csv

**Criteria for success**

* Determine the key features that lead to order meals from centers.
* Build a model based on the key features to determine the number of meals for fulfilment centers for the upcoming 10 weeks.
* Estimate the total number of orders for fulfilment centers.
* Classify high-demand orders for each center.

**Scope of solution space**

* Build a predictive model and analyze the results:
* Conduct multiple models such as Logistic Regression, Decision Tree, and etc. to train the dataset, compare the accuracy of each model on the test dataset, and pick the highest accuracy model.

**Deliverables**

The project deliverables will include Jupyter Notebooks containing each step, methods used, and codes to support the analysis of the project. In addition, the final report will be presented in the form of the slide deck and project report.

Questions:

How promotions can affect the number of orders?

How fulfilment centers are connected?

Predict the number of orders for upcoming 10 weeks for a meal delivery company operating in multiple cities. The company has various fulfillment centers across these cities to dispatch meal orders to customers. In anticipation of future demand, the company aims to forecast the upcoming weeks' orders, allowing these centers to plan their raw material stocks accordingly.

Goals:

* Estimate the total number of orders for each fulfilment center.
* Determine the number of meals for each fulfilment center for the upcoming 10 weeks.
* Classify high-demand orders for each center.

Dataset:

<https://www.kaggle.com/datasets/kannanaikkal/food-demand-forecasting>

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