# **Food Demand Forecasting**

* Your client is a meal **delivery company which operates in multiple cities**.
* They have various fulfillment centers in these cities for dispatching meal orders to their customers.
* The client wants you to help these centers with demand forecasting for **upcoming weeks** so that these centers will **plan the stock of raw materials accordingly**.
* The **replenishment of majority of raw materials is done on weekly basis** and since the raw material is perishable, the **procurement planning** is of utmost importance.
* Secondly, staffing of the centers is also one area wherein accurate demand forecasts are really helpful.
* Given the following information, the task is to **predict the demand for the next 10 weeks** (Weeks: **146-155**) for the **center-meal combinations** in the test set:
* Historical data of demand for a product-center combination (Weeks: 1 to 145)
* Product(Meal) features such as **category, sub-category, current price and discount**
* Information for fulfillment center like center area, city information etc.

**Data Dictionary**

1. **Weekly Demand data (train.csv):**

Contains the historical demand data for all centers,

test.csv contains all the following features except the target variable

|  |  |
| --- | --- |
| **Variable** | **Definition** |
| id | Unique ID |
| week | Week No |
| center\_id | Unique ID for fulfillment center |
| meal\_id | Unique ID for Meal |
| checkout\_price | Final price including discount, taxes & delivery charges |
| base\_price | Base price of the meal |
| emailer\_for\_promotion | Emailer sent for promotion of meal |
| homepage\_featured | Meal featured at homepage |
| num\_orders | (Target) Orders Count |

1. **fulfilment\_center\_info.csv:**Contains information for each fulfilment center

|  |  |
| --- | --- |
| **Variable** | **Definition** |
| center\_id | Unique ID for fulfillment center |
| city\_code | Unique code for city |
| region\_code | Unique code for region |
| center\_type | Anonymized center type |
| op\_area | Area of operation (in km^2) |

1. **meal\_info.csv:**Contains information for each meal being served

|  |  |
| --- | --- |
| **Variable** | **Definition** |
| meal\_id | Unique ID for the meal |
| category | Type of meal (beverages/snacks/soups….) |
| cuisine | Meal cuisine (Indian/Italian/…) |

**Evaluation Metric**

The evaluation metric for this competition is ***100\*RMSLE*** where RMSLE is Root of [Mean Squared Logarithmic Error](https://scikit-learn.org/stable/modules/generated/sklearn.metrics.mean_squared_log_error.html) across all entries in the test set.

**Public and Private Split**

Test data is further randomly divided into Public (30%) and Private (70%) data.

* Your initial responses will be checked and scored on the Public data.
* The final rankings would be based on your private score which will be published once the competition is over.

How to Make Submission

How to Set Final Submission