**Capstone project proposal**

***Background information:***There is a meal delivery company that operates in multiple cities. It has various fulfillment centers in these cities for dispatching food orders to their customers. The client needs help with demand forecasting for upcoming weeks for these centers to plan for the raw materials stocking accordingly. The replenishment of the majority of raw materials is done on a 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 dataset, the task is to predict the demand for the next 10 weeks (Weeks: 146-155) for the center-food combinations in the test set.

Dataset source:  
[Food Demand Forecasting | Kaggle](https://www.kaggle.com/datasets/kannanaikkal/food-demand-forecasting)

***Problem statement:***Food demand forecasting (predicting number of orders for different customers by different meal options across various centers based on historical > 140 weeks data) for a food delivery company for next 10 weeks

***Context:***There is a meal delivery company that operates in multiple cities. It has various fulfillment centers in these cities for dispatching food orders to their customers. The client needs help with demand forecasting for upcoming weeks for these centers to plan for the raw materials stocking accordingly. The replenishment of the majority of raw materials is done on a weekly basis and since the raw material is perishable, the procurement planning is of utmost importance.

***Criteria for success:***Delivering a model with > 90% accuracy to forecast the food demand for next 10 weeks by different meal options across various centers

***Scope of solution space:***

1. Data wrangling and exploratory data analysis to understand the distribution and patterns of the historic (training set) data

2. Train the model with the majority of the historic data using supervised learning algorithms (linear regression, random forest regression etc.)

3. Test the accuracy of the model on the remaining portion (~ 20%) of the historic data

4. Predict the demand for the next 10 business weeks

***Constraints within solution space:***

Model accuracy (in forecasting the food demand) > 90%. A lesser accurate model could potentially result in improper planning of raw material procurement

***Stakeholders to provide key insight:***N/A

***Key data sources:***[Food Demand Forecasting | Kaggle](https://www.kaggle.com/datasets/kannanaikkal/food-demand-forecasting)