Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID36907
Project Name	Project – DemandEst-AI powered Food Demand Forecaster
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The data set is related to a meal delivery company which operates in multiple cities. They have various fulfilment centers in these cities for dispatching meal orders to their customers. The dataset consists of historical data of demand for a product-center combination for weeks 1 to 145. With the given data and information, the task is to predict the demand for the next 10 weeks (Weeks: 146-155) for the center-meal combinations, so that these fulfilment centers stock the necessary raw materials accordingly.
2.	Idea / Solution description	The main aim of this project is to create an appropriate machine learning model to forecast the number of orders to gather raw materials for next ten weeks. To achieve this, we should know the information about of fulfilment center like area, city etc., and meal information like category of food sub category of food price of the food or discount in particular week. By using this data, we can use any classification algorithm to forecast the quantity for 10 weeks. A web application is built which is integrated with the model built.
3.	Novelty / Uniqueness	Demand forecasting helps companies in several readily apparent areas, such as production, scheduling and customer service
4.	Social Impact / Customer Satisfaction	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 info**
5.	Business Model (Revenue Model)	The replenishment of raw materials is done only on weekly basis and since the raw material is perishable, the procurement planning is of utmost importance. Therefore predicting the Demand helps in reducing the wastage of raw materials which would result in the reduced cost of operation. Increased customer satisfaction by timely fulfilling their expectations and requirements.
6.	Scalability of the Solution	A food delivery service has to deal with a lot of perishable raw materials which makes it all the more important for such a company to accurately forecast daily and weekly demand. Too much invertory in the warehouse means more risk of wastage ,and not enough could lead to out-of-stocks - and push customers to seek solutions from your competitors. In this challenge, get a taste of demand forecasting challenge using a real datasets.