

Project Design Phase-I
Proposed Solution

Date	07 November 2022
Team ID	PNT2022TMID46533
Project Name	Project - DemandEst - AI powered Food Demand Forecaster
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Building an appropriate machine learning model to forecast the number of orders to gather raw materials for the next ten weeks.
2.	Idea / Solution description	XGBoost works toward optimizing/minimizing the loss functions for the forecasts . The tree ensemble is formulated and the CART module is trained with the associated variables. The tree equation is developed and the CART weights are allotted to sub-trees. The forecast results are obtained by combining the finalized weights for every sub-tree and then verified with the help of K-additive functions.
3.	Novelty / Uniqueness	We will be using XGBoost which is an efficient implementation of gradient boosting that can be used for regression predictive modeling. XGBoost, an implementation of gradient boosted decision trees, uses decision tree methods to supply high performance with very less computation time, leading to better performances.
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none">- Reduces wastage of food and raw materials- Improvement in sales of the business- Analysing and understanding the demand for raw materials.
5.	Business Model (Revenue Model)	<ul style="list-style-type: none">- Data analytics- Statistic- Future prediction
6.	Scalability of the Solution	The model is scalable from the architecture and dataset training perspective. We can train a huge amount of data consisting of demand in different countries and make predictions on demand for the raw materials.