**Into The Belly**

# Project Title and Team Members:

**Project Title:** Into the Belly

**Team Members:**

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**GitHub Link:** [**https://github.com/nehabaddam/SDAI-Project.git**](https://github.com/nehabaddam/SDAI-Project.git)

# Goal and Objectives:

# Abstract:

“Into the belly” aims to reduce food wastage across the world, it is an application that will connect food suppliers to the food businesses like restaurants, hotels, etc., by predicting the amount of raw material that must be ordered every month based on the previous consumption data.

# Motivation:

The main purpose of the “Into the Belly” application is to reduce food wastage across the world. “Into the belly” will be a web application that will connect food suppliers to businesses (restaurants/Super Markets/Grocery Stores/Catering Businesses), to predict the amount of food required based on the previous month’s sales. This reduces the waste of food that would otherwise be discarded.

# Significance:

**Why “Into the Belly”?**

Around one-third of the world’s food or 1.3 billion tons per year is lost to waste, 1,000 tons of food every minute. People usually think that it is okay to waste food as it is biodegradable and does not harm the environment, but food waste releases an estimated 3.3 billion tons of CO2 every year i.e., about 1,000 tons of CO2 per minute. Over eight million people worldwide suffer from hunger and malnutrition, while tons of food is going into the dump. We need to recognize this global issue and play our role to curb it. “Into the Belly” emerged from mere thought to reduce food wastage and regulate the food before it goes into the trash.

# Objectives:

Supermarkets, shops, and households comprise 35% of food waste. Most of the food thrown away at the consumption level are fit for eating. If this food is regulated using the “Into the Belly” application, that would be a win-win situation for the foof businesses (Who will save money without buying extra raw material and reduce the food that was going to dump).

# Features:

“Into the Belly” proposes to focus primarily on the waste from the food businesses. This application would be a bridge to prevent food wastage and save money. Once the food business opens the website, the dashboard shows what inputs should be given, say previous sales data of the items that were sold and the raw material list. The user can enter the data or just upload an excel file with data. The algorithm uses **Recurrent Neural Network** to predict an output, which is the amount of raw material that the restaurant needs to buy this month.

# References:

1. [Starter Food Demand Prediction:](https://www.kaggle.com/datasets/gauravsahani/food-demand-prediction-dataset) Demand forecasting is a key component of every growing online business. Without proper demand forecasting processes in place, it can be nearly impossible to have the right amount of stock on hand at any given time. 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.
2. [Food Stock Requirement Prediction for Restaurants:](https://medium.com/thebusinesswizards/food-stock-requirement-prediction-for-restaurants-5d7afe4f350) Prediction of demand and management of raw materials remains an unsolved problem for the restaurant industry. To keep up with the competition, restaurants continuously have to innovate and come up with new food items on their menu card. This results in stocking and a higher wastage of perishable raw materials. The objective of this article is to come up with metrics to better predict the demand for various menu items and hence reduce raw material wastage.
3. [Demand Prediction](https://github.com/SaiPrasath-S/DemandPrediction): Demand Forecasting is a process by which an individual or entity predicts how much the consumer or customer would be willing to buy the product or use the service. Without Proper Demand forecasting, it becomes impossible for any business to function. Improper Demand forecasting. would result in heavy loss. In the case of the food industry, it is most important that the demand needs to be in bull’s eye since the food materials get perished easily and have a fixed time frame to be used. So, the daily and weekly demand needs to be precise to avoid wastage which would otherwise increase the operating cost.