Project Design (Team 6)

Team Members

Name	Role
Sarah Xia	Product Manager
Sherry Xu	Data Scientist, Product Manager Assistant
Yi Yao	Business Analyst
Cassandra Chen	Data Analyst

Business Problem:

Assists individuals in identifying and selecting healthy food options tailored to their unique dietary needs, health conditions.

The impact of food extends beyond its apparent attributes. To help individuals achieve a balanced daily nutrient intake, we plan to conduct an in-depth analysis of the nutritional density of various foods based on their ingredients. Additionally, we aim to identify optimal combinations of key nutrients (e.g., Vitamin C, Sodium) that maximize nutritional value while minimizing fat content.

Data Source:

https://www.kaggle.com/datasets/utsavdey1410/food-nutrition-dataset

Dataset Description: The Comprehensive Nutritional Food Database includes 35 features (Food, Caloric Value, Fat, Sugar, Nutrition Density…) across a wide range of food items widely available.

Analysis Plan:

EDA:

- **Data Manipulation:** Data Cleaning, Transformation, Aggregation, Feature Engineering
- **Visualization:** Histograms, Heatmap

Model selection (Training + Evaluation):

- **Unsupervised learning:** Clustering/ Segmentation: K-Means
- **Supervised learning:** Nutrition Density per Calorie prediction (Regression: Random Forest)