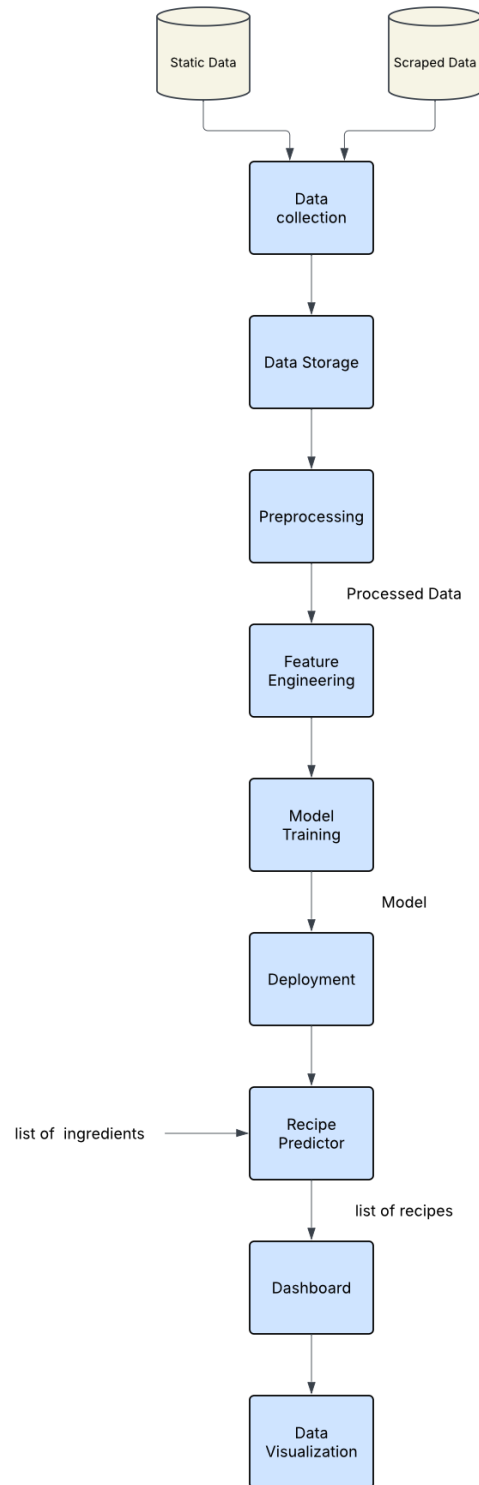


# Project Process Diagram

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**Project Name:** PantryPalette: Your Ingredient-Inspired Recipe Guide

## PantryPalette Process Flow:



**Here is how it maps to our project:**

**1. Data Collection**

- Gather diverse recipe datasets for training and recommendation.
- Sources: Static Data, Scraped Data

**2. Recipe Data Storage**

- Stores collected recipes for future retrieval and analysis.

**3. Preprocessing**

- Tokenization – Breaking ingredient text into structured components.
- Standardization – Normalizing ingredient formats (e.g., “½ cup” → “0.5 cup”).
- Cleaning – Removing inconsistencies and duplicates.

**4. Feature Engineering**

- TF-IDF Vectorization – Converts ingredients into numerical vectors for matching.
- Cosine Similarity – Compares ingredient lists to rank relevant recipes.

**5. Model Training**

- Fine-tunes the recommendation system to improve accuracy and relevance.

**6. Deployment**

- Uses Docker & Streamlit to deploy the model for user interaction.

**7. Recipe Predictor**

- User inputs ingredients -> The system retrieves, ranks, and suggests recipes.

**8. Model Monitoring Dashboard**

- Power BI tracks prediction performance, data drift, and user engagement.
- Identifies areas for model retraining and optimization.

**9. Data Visualization**

- Tableau provides trend analysis, insights, and analytics to understand recommendation trends & user behavior.