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

**PantryPalette Process Flow:**

A diagram of a model

AI-generated content may be incorrect.

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

1. **Data Collection**

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

1. **Recipe Data Storage**

* Stores collected recipes for future retrieval and analysis.

1. **Preprocessing**

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

1. **Feature Engineering**

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

1. **Model Training**

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

1. **Deployment**

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

1. **Recipe Predictor**

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

1. **Model Monitoring Dashboard**

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

1. **Data Visualization**

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