

RECIPE MAKER

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INTRODUCTION

A Generative AI Recipe Maker is an intelligent tool that helps users—especially busy bachelors—create meals effortlessly. Users simply enter available ingredients and the time they have, and the AI, via a chat interface, instantly suggests personalized recipes. It generates step-by-step instructions, substitutes missing items, and adapts to dietary preferences or cooking skill levels. This interactive experience mimics chatting with a smart chef who knows your kitchen. Ideal for quick meals, the AI ensures minimal prep, smart use of leftovers, and healthy choices. It's a game-changer for anyone looking to cook with ease, save time, and avoid food waste.



DATA SOURCE AND FEASIBILITY STUDY

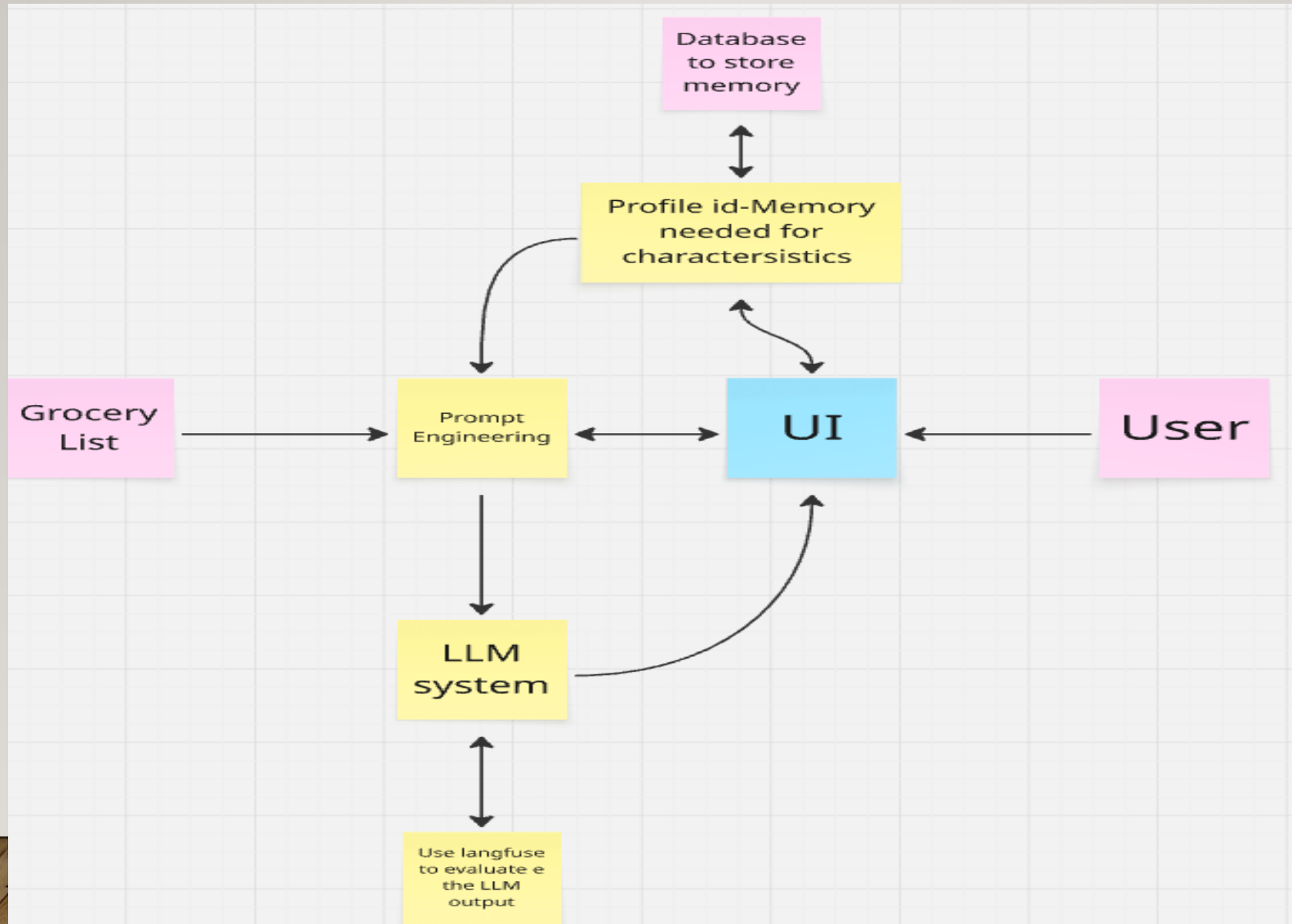
Data Sources:

- **Recipe Datasets:** Kaggle Recipe Datasets, RecipeIM+, Food.com API
- **Ingredient Lists:** USDA FoodData Central, open-source ingredient libraries
- **Cooking Instructions:** Web scraped data from AllRecipes, Tasty, Yummly (filtered & cleaned)

Feasibility Study:

- Ample open-source data for training and fine-tuning models
- Transformer-based LLMs (like GPT or Gemini) capable of generating coherent, step-wise recipes
- Multimodal capabilities can be added later for image-to-recipe generation
- High potential for user engagement and utility in real-world scenarios

ARCHITECTURE



ALGORITHMS & EXPECTED OUTCOME

Algorithms/Models to Explore:

- GPT-based LLMs (e.g., GPT-4, LLaMA 2) for recipe generation
- Rule-based fallback for fail-safes
- FAISS for retrieval of similar recipes from database

Expected Outcome:

- Generate personalized recipes in real time
- Reduce food waste and improve user cooking habits
- High satisfaction through relevant, easy-to-make suggestions

SCOPE

Technology Stack:

- GPT-based Large Language Models (e.g., GPT-4, Gemini) for recipe generation.
- Optional rule-based logic for fallback and validation.
- UI built on Streamlit
- API calls to backend

Limitations (Current Scope):

- Text-based interaction only (no image or voice input yet).
- Recipe suggestions depend on dataset variety and coverage.
- Limited to common ingredients and cuisines.

THANK YOU

