

Workflow Overview

The **AI-Generated Recipe Assistant** follows a **5-step workflow** from user input to recipe generation and display.

1. User Input

- The user enters:
 - Available ingredients
 - Preferred cuisine
 - Dietary restrictions (e.g., vegetarian, vegan, gluten-free)

Example:

Input: "Eggs, bread, cheese"

Preference: "Vegetarian, quick breakfast"

- **Image:**
(Placeholder: Screenshot of the input form or fridge photo upload)

2. Data Processing

- Input is **cleaned and tokenized**
(e.g., separating ingredients, removing extra spaces).
- The processed data is sent to the **backend server** for recipe generation.
- **Image:**
(Placeholder: Diagram showing data flow from frontend to backend)

3. Model Inference

- The backend uses an **LLM (e.g., GPT model)** or a **custom fine-tuned model**.
- The model:
 - Suggests suitable recipes
 - Identifies missing or complementary ingredients
 - Generates **step-by-step cooking instructions**
- **Image:**
(Placeholder: Illustration of ML model taking ingredients and generating a recipe)

4. Response Formatting

- Model output is converted into a **readable recipe format**:
 - Recipe title
 - Ingredients list
 - Cooking steps
 - Nutritional info (optional)

Example Output:

Recipe: Cheese Egg Toast

Ingredients:

- 2 eggs
- 2 slices bread
- 50g cheese

- Salt, pepper

Steps:

1. Beat eggs with salt and pepper
2. Toast the bread
3. Cook eggs on a pan until fluffy
4. Layer eggs and cheese on toast
5. Serve hot

- **Image:**

(Placeholder: Screenshot of the formatted recipe on the frontend)

5. Display on Frontend

- The formatted recipe is sent back to the **React frontend** via API.
- The frontend displays:
 - Recipe details
 - Option to **save** or **generate another recipe**
 - Ratings and sharing options
- **Image:**
(Placeholder: Screenshot of final recipe displayed to the user)