

# Workflow Overview

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

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## 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)*

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## 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)*

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### 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)*

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### 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)*

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## 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)*