Requirement Analysis Phase-II
Data Flow Diagram & User Stories

Date	10-02-2026
Team ID	LTVIP2026TMIDS65437
Project Name	Flavour Fusion: -Ai-Driven Recipe Blogging
Maximum Marks	4 Marks

Data Flow Diagrams:

Data Flow Diagram (DFD): - A Data Flow Diagram (DFD) for an AI-Driven Recipe Blogging system, such as "Flavour Fusion," illustrates how food imagery and user preferences are transformed into recipes, step-by-step instructions, and blog content.

Based on AI-driven culinary applications, the data flow primarily involves three phases:

1. Input Processing

2. AI Analysis & Generation

3. Output Storage & Display

Data Flow Diagram Components: -

A.Input Data Flow (Image/Ingredients to AI)

- Image Upload: The user uploads a photo of a dish (e.g., paneer gravy) via the web interface.
- Ingredient Input: Alternatively, the user enters text-based ingredients.
- Data Transmission: Raw image data is sent to the AI processing unit.

B. Processing Data Flow (AI Analysis)

- Image Recognition (CNN): A Convolutional Neural Network (CNN) analyzes the photo to identify ingredients and the dish type.
- Recipe Generation (RNN/LLM): A Recurrent Neural Network (RNN) or Large Language Model (LLM) takes the recognized ingredient set and generates step-by-step instructions, including preparation and cooking time.
- Validation: The generated recipe is checked for accuracy and coherence.

C. Output & Storage Data Flow (Data Repository)

- Store Recipe Data: The system stores the generated title, ingredients, and instructions in a SQL or NoSQL database.
- Store Metadata: Tags, cooking time, and difficulty levels are stored.
- Display Output: The final recipe is published to the blog UI for the user.

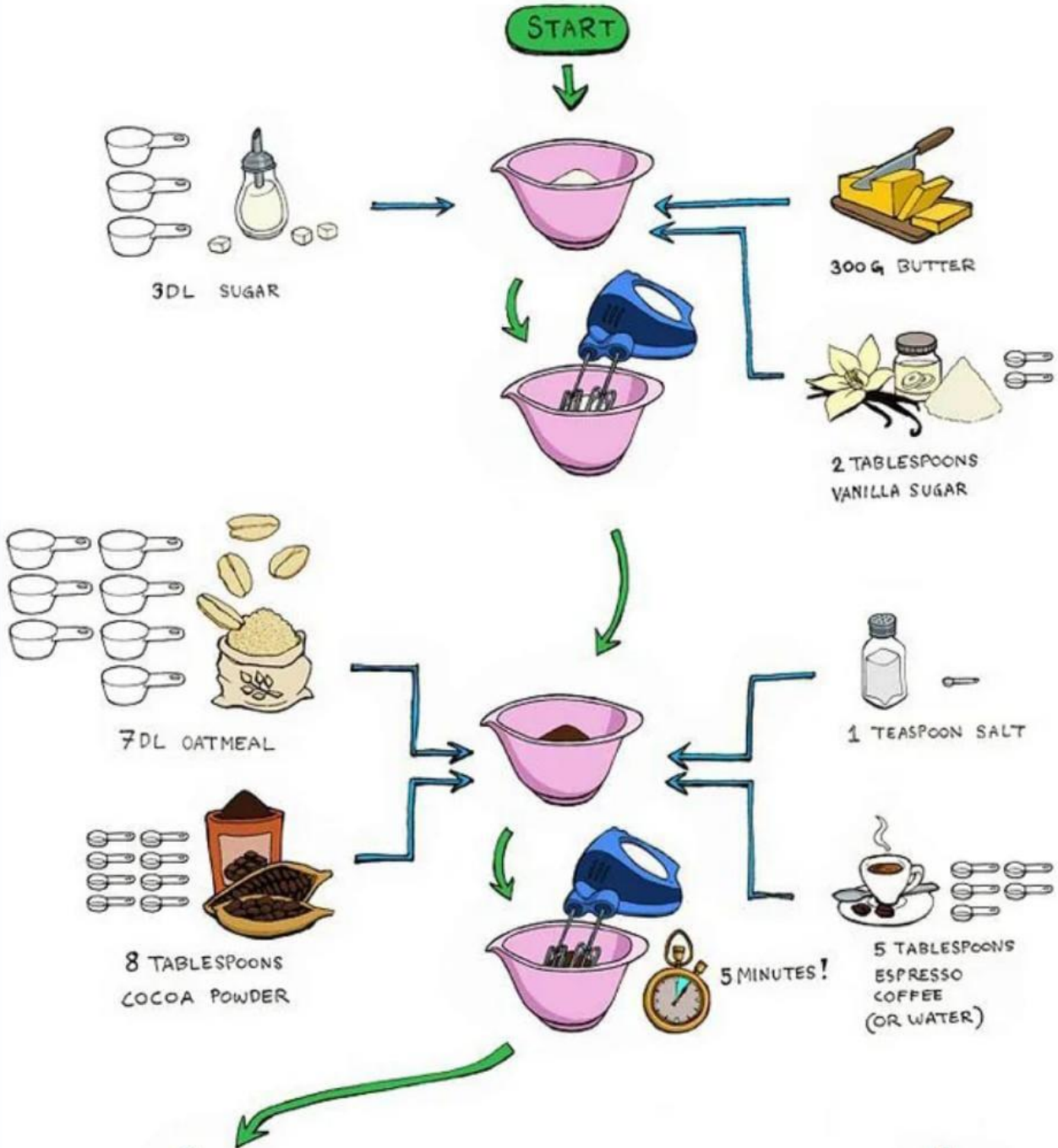
Detailed Data Flow Description (Step-by-Step)

1. **Input:** User uploads a food image.
2. **Analysis:** The CNN model identifies the dish, ingredients, and style.
3. **Generation:** The RNN model creates a tailored recipe based on the image.
4. **Refinement:** The AI adds nutritional info, preparation time, and tips.
5. **Storage:** The complete, generated recipe is stored in the Data Store.
6. **Display:** The blog platform fetches the data and displays the formatted recipe to the user.

Key Technologies

- **CNN (Convolutional Neural Networks):** For food recognition.
- **RNN/LSTM (Recurrent Neural Networks):** For generating sequential cooking instructions.
- **Database:** Structured storage for ingredients and instructions.

This system is designed to turn visual input into a bloggable, structured, and personalized cooking experience.


START
3DL SUGAR
300G BUTTER
2 TABLESPOONS
VANILLA SUGAR
7DL OATMEAL
1 TEASPOON SALT
8 TABLESPOONS
COCOA POWDER
5 MINUTES!
5 TABLESPOONS
ESPRESSO
COFFEE
(OR WATER)

User Story Table – Flavour Fusion: -Ai-Driven Recipe Blogging

Use ID	User role (Person)	As a..... (WHO)	I Want..... (what)	So that..... (why/goal)	Acceptance criteria
US-1	Food Blogger	user	As a blogger, I want to automatically generate a detailed blog post (including recipe, description, and tags) from my cooking process.	I can save time on manual content creation and publish regularly	Generates a 300+ word blog post with structured JSON-LD recipe markup.
US-2	Culinary Adventurer	user	Combine two different cuisines (e.g., Thai + Italian) via a search prompt.	I can explore new, innovative taste experiences.	The model produces a recipe using key ingredients from both cultures with clear, step-by-step instructions
US-3	Home Cooking	user	Upload an image of leftover ingredients in my fridge.	The AI can suggest a unique fusion recipe to reduce food waste.	System recognizes 90%+ of ingredients from an image and generates a valid, coherent recipe
US-4	Content Creator	Owner	Have the AI auto-generate a blog post, including title, SEO meta-description, and image descriptions.	I can save time on manual content creation and publish regularly	The AI generates a 300+ word article that is coherent, engaging, and relevant to the generated recipe.
US-5	Aspiring Cheif	user	view a detailed, step-by-step recipe generated from a picture	I can learn to cook complex dishes without having to read long, traditional blog posts.	The generated recipe includes ingredients, cooking times, difficulty levels, and clear instructions.

US-6	Health-Conscious User	user	Request a gluten-free or vegan version of a recipe.	I can adapt my diet without losing flavor, and the AI handles the ingredient substitutions.	The AI suggests appropriate substitutions (e.g., tofu for meat) while keeping the dish within the specified dietary limits.