Assignment: AI Pet Food Label Decoder

Objective:
Design a simplified AI-based system that explains pet food labels in a clear, safe, and human-friendly way. This version is intentionally scoped so it can be completed within one working day.

Simplified Problem Statement:
Pet food labels often include complex ingredient names and marketing terms. Your task is to build a basic decoder that helps pet parents understand ingredient lists without providing medical or nutritional advice.

Input:
One or more of the following: Ingredient list text from a pet food label Optional basic pet info (species only – dog or cat)

Example Input:
“Ingredients: Chicken meal, corn, wheat, soy, artificial flavour.”

Output:
For each input, generate: **Ingredient Categorization** Beneficial ingredients Common fillers Additives or vague terms **Simple Explanation** Short, plain-language explanation of each category **General Suitability Note** High-level guidance (e.g., “Common in many adult dog foods”) **Safety Disclaimer** Statement that this is informational only, not veterinary advice

Required System Characteristics (Simplified):
Rule-Based Logic: Use predefined lists to classify ingredients (protein, filler, additive). **LLM or Text Generator:** Use an LLM or mock function only to generate friendly explanations. **Safety First:** No health claims, no “good/bad” judgments, and no medical recommendations.

Explainability:
The output should briefly explain why ingredients fall into a specific category using simple reasoning.

Robustness:
The system should handle: Short or incomplete ingredient lists Unknown ingredients by labelling them as “unclear”

Deliverables:
GitHub repository with runnable code Short README (1–2 pages maximum) describing: Workflow Ingredient classification logic Limitations

Evaluation Criteria:
Evaluation will focus on clarity, safety, simplicity, and clean implementation rather than completeness or advanced AI techniques.

Time Expectation:
This assignment is scoped to be completed within one day.

Note:
Simple, transparent solutions are preferred over complex or over-engineered designs.