Rule-Based AI Assignment: Dorm Meal Recommender

# Part 1: Project Ideas

1. Pet Symptom Checker  
 - What it does: Asks users about their pet's symptoms and provides basic advice.  
 - How it works: Uses keywords like “vomiting”, “lethargy”, or “scratching” and suggests possible minor issues or when to contact a vet.

2. Daily Motivation Bot  
 - What it does: Gives motivational quotes or advice based on user mood.  
 - How it works: Rules based on keywords like “sad”, “stressed”, “happy” to deliver predefined quotes or affirmations.

3. Dorm Meal Recommender  
 - What it does: Suggests meal ideas based on what ingredients you have in your dorm.  
 - How it works: Uses rules like IF input contains “eggs” and “bread” THEN suggest “French Toast”.

Selected Idea: Dorm Meal Recommender  
Justification: I chose the Dorm Meal Recommender because it’s a fun, practical tool that solves a relatable problem—what to cook with limited ingredients. It’s easy to build rules around ingredients and expand over time, and it fits well with using conditionals and keyword logic.

# Part 2: Rules and Logic

IF user inputs "eggs" AND "bread" → recommend “French Toast”

IF user inputs "rice" AND "beans" → recommend “Rice and Beans Bowl”

IF user inputs "ramen" AND "cheese" → recommend “Cheesy Ramen”

IF user inputs "tortilla" AND "cheese" → recommend “Quesadilla”

IF no known combo is found → suggest “Try a snack or get takeout”

# Part 3: Test Inputs and Results

Input: eggs, bread → Output: You can make French Toast!

Input: rice, beans → Output: How about a Rice and Beans Bowl?

Input: lettuce, mustard → Output: Sorry, I don't have a recipe for those ingredients. Try a snack or get takeout.

# Part 4: Reflection

This rule-based system is a simple meal recommender that suggests recipes based on ingredients entered by the user. It operates using predefined rules that check for specific combinations of ingredient keywords. If a match is found, it returns a corresponding meal suggestion. If no match is found, it provides a default response suggesting takeout or a snack.  
  
The process of working with the AI assistant was helpful, especially during the brainstorming and rule design stages. It gave me ideas I hadn’t thought of, like Cheesy Ramen, which made the system more fun and relatable. Writing the rules in IF-THEN format helped me see how AI used to work before machine learning. Every response depended entirely on how clearly I defined the logic.  
  
One challenge I faced was figuring out how to write clean conditional logic in Python that could handle multiple user inputs in a flexible way. I needed help from the AI to strip and lowercase the input for consistency, so ingredients like “Eggs” and “eggs” would be treated the same. The AI also helped me understand how to test my program with different inputs and refine the logic as needed.  
  
Overall, this assignment helped me better understand the foundations of AI—before machine learning took over. I also gained confidence in using conditionals, string manipulation, and how to break down a basic AI behavior into manageable rules.