# Part 3: On Al Agent Integration

For this task of assignment, we need to work with AI which can insist in solving problems, refine logic and enhance my assignment documentation. So, I am using Microsoft Copilot as AI agent to support my work. To enhance my automated pet feeder project, I used **Microsoft Copilot** to assist with four key areas: refining my logic, generating alternative solutions, exploring real-world implementation, and improving documentation.

1. Refining Logic and Word Code

**Prompt:** "Can you review my Step 4 pseudocode and suggest improvements or identify potential issues?"

Answer: The Microsoft Copilot replied to me; there is a flaw in time comparison logic (currentTime = feedingTimes) and recommend using currentTime IN feedingTimes for accuracy. Also suggested adding a third bowl weight reading after the pet eats to properly assess consumption and recommended verifying servo motor success and handling sensor errors improve reliability.

These changes made logic more robust, realistic, and suitable for physical implementation by anticipating edge cases and improving fault tolerance.

1. Generating Alternative Solution

**Prompt:** "Can you suggest smarter or more efficient ways to improve my flowchart and algorithm?"

Answer: It proposed a sensor-triggered feeding system that activates only when the pet is detected and suggested to introduce retry logic before sending alerts, reducing false alarms.

These enhancements will make the system smarter and less wasteful, improving both user experience and operational efficiency.

1. Exploring Real-World Implementation

**Prompt:** "How can I build this system using actual hardware like Arduino or Raspberry Pi?"

Answer: It recommended to use Arduino Uno for simplicity and affordability and suggested components like load cells for weight sensing, ultrasonic sensors for bin level.

Using Microsoft Copilot throughout this project allowed me to refine both the technical and practical aspects of my auto pet feeder project. It alerted me to flaws in my thought process, e.g., comparing times inappropriately and calculating weights, and suggested smarter alternatives such as feeding based on sensors and retry options. Copilot also helped me decide on cost-effective hardware components for use in actual conditions and allowed me to write improved documentation. Overall, it enhanced my knowledge of system design, encouraged more reliable and ethical solutions, and made the development process more efficient.