UNIVERSITY OF CANBERRA

INTRODUCTION TO INFORMATION TECHNOLOGY (4478/8936)

Assignment 1: The Solving Problem Process.

Step 5: Test and Refine the Solution (Debug and Verify)

Case	Input	Output	Result
Pet eats food	Time=8:00, Food bin=Yes	Servo motor disposes food	Working fine
Pet does not eat	Time=8:00, Food bin= Yes, Bowl weight unchanged after 60 Minutes	Servo motor disposes food. Alert Food not eaten	Machine alerts staff
Food bin empty	Time=8:00, Food bin= No	Alert No Food available in the bin	Machine alert staff for fill the bin
Outside feeding time	Time=14:00 Food bin= Yes	No action	Machine knows non feeding time
Bowl capacity	Time=17:00, Food bin= Yes, Bowl already at 500 g	Prevent disposing or alert staff	Avoid overfilling

Discussion of logic

- The feeder successfully handles all normal scenarios:

    o Dispensing food at correct times.

    o Detecting if food was eaten.

    o Alerting staff if food not eaten or food bin empty.

- Edge case testing (like bowl already being full) shows an improvement opportunity.

Refinements / Improvements

1. Retry mechanism: If food not eaten, wait another 30 minutes and check again before sending an alert. In case the pets are sleeping

2. Custom feeding schedule: Allow staff to set feeding times instead of fixed 08:00 and 17:00.

3. Multiple pets handling: Add logic for distinguishing between cats and dogs if needed.

4. Safety check: Prevent dispensing food if bowl is already full like avoid overfeeding.