

IIT ASSIGNMENT - 1

The Problem Solving Process

STEP 5 - Test and Redefine the Solution (Debug and Verify)

Scenario 1: Pet eats as expected

The system successfully dispensed food as scheduled. Afterwards, during dispensing the bowl weight decreased within the 10 mins monitoring period, confirming that the pet had eaten. The expected result was that the system would record the feeding as successful without sending any alerts, and this perfectly supported and matched the actual output. Therefore, the logic functioned as intended, signifying that under normal and appropriate conditions the automatic feeding dispenser performs reliably.

Scenario 2: Pet does not eat

The feeder dispensed food as scheduled, but the bowl weight remained unchanged after ten minutes of monitoring. The outcome in this scenario was for the system to send an alert indicating that the food had not been consumed, and this was exactly what occurred the alert was prompted as designed. Moreover, keeping a balance of these repeated "not eating" events and checks over time could provide valuable insights and serve as an early health warning for the pet.

Scenario 3: Food bin is empty

The servo motor rotated as scheduled, but no food was actually dispensed, as shown by the constant bowl weight. The behaviour in this case should be an alert demonstrating that the food bin is empty. However, under the current design, the system would misconceptualise the situation as the pet is not eating. An improvement to address this issue would be to add a food bin measuring level sensor or logic to verify whether food actually dropped into the bowl. For example, if no change in bowl weight is detected immediately after the servo operates, the system should generate a "Food bin empty" alert. Conversely, if food is dispensed into the bowl but the weight does not decrease within ten minutes, the system should correctly classify the issue as "Pet not eating."