Step by Step – Word Code(Step 4)

Automatic Pet Feeder: Step-by-Step Operational Algorithm

Step 1: Initialize System

- Set up clock, servo motor, food-level sensor, and bowl weight sensor.
- *Comment:* Ensures the feeder can track time, dispense food, detect if the hopper has food, and monitor bowl weight.

Step 2: Check Feeding Time / Manual Request

- current_time = get_current_time()
- If current_time == 8:00 AM OR current_time == 6:00 PM OR manual_feed_pressed == True:
  → Proceed to Step 3
- Else: wait (loop back to Step 2)
- *Comment:* Feeding occurs at scheduled times or when manually requested; otherwise, the system stays idle.

Step 3: Check Food Availability

- If food_available == True:
  → Proceed to Step 4
- Else: send "Refill Food" alert and loop back to Step 2
- *Comment:* Prevents dispensing when the hopper is empty and alerts the user to refill.

Step 4: Dispense Food & Record Baseline Weight

- rotate_servo(3 seconds)
- bowl_weight_before = get_bowl_weight()
- *Comment:* Releases a preset portion of food and records the initial bowl weight for monitoring.

Step 5: Wait and Check Bowl Weight

- Wait 10 minutes
- bowl_weight_after = get_bowl_weight()

- bowl_weight_change = bowl_weight_before - bowl_weight_after
- *Comment:* Measures food consumption by comparing bowl weights.

Step 6: Evaluate Result & Notify

- If bowl_weight_change >= 5 g:
  → Feeding successful
- Else: send "Uneaten Food" alert
- *Comment:* 5 g is the threshold; below this, the pet likely did not eat.

Step 7: Return to Waiting State

- Loop back to Step 2 to monitor the next scheduled feeding or manual request.
- *Comment:* Keeps the feeder running continuously and ready for the next cycle.