Step 4

Implementing the Solution

Defining the variables and the constants

Variables

- Real_Time
- Food_Level
- Bowl_Weight

Constants

- Feeding_Time1
- Feeding_Time2

Translating the logic into simple, easy to understand liner steps.

1. Start the System

2. Read Real_Time

#Read current time from the Real Time Clock

3. Is Real_Time equal to Feeding_Time1 OR Feeding_Time2?
   a) If Real_Time equal to Feeding_Time1 OR Feeding_Time2, proceed to Step 4.
   b) If Real_Time is NOT equal to Feeding_Time1 OR Feeding_Time2, go back to Step 2.

#Check if the time is any of one of the scheduled feeding times.

4. Read Food Level Sensor

#Measures how much food (kibble) is available in the food storage container

5. Is Food_Level more than OR equal to 500g?
    a) If Food_Level is NOT more than OR equal to 500g, turn ON the Buzzer for 5 seconds AND output an alert into the display log, “Please fill the food storage container”

    a.i) After printing the alert, wait for 5 minutes before going back to Step 4. *

    b) If Food_Level is more than OR equal to 500g, proceed to Step 5.

* Waiting for 5 minutes is necessary so that the system doesn’t display “Please fill the food storage container” continuously and returns to reading the sensor.

6. Rotate Servo Motor AND Dispense 200g of food

#Food is dispensed into the food bowl to be eaten.

7. Wait 10 minutes

8. Is Bowl_Weight = +/- 200g?
    a) If Bowl_Weight = +/- 200g, then turn ON the Buzzer for 5 seconds and AND output an alert into the display log, “Pet may not have eaten, please check the food bowl.”

    a.i) After printing the alert, wait for 5 minutes before going back to Step 1. *

    b) If Bowl_Weight is NOT +/- 200g, then proceed to step 9.

* Waiting for 5 minutes is necessary so that the system doesn’t display “Pet may not have eaten, please check the food bowl.” continuously and returns to reading the sensor, as pet is not eating.

Step 8 lets us figure out if the dog is actively eating, and if it is not the system can go back to reading the sensor.

9. Wait 10 minutes

10. Is Bowl_Weight more than OR equal to 30g?
    a) If Bowl_Weight = more than OR equal to 30g, then turn ON the Buzzer for 5 seconds and AND output an alert into the display log, “Feeding Incomplete, please remove food from the bowl for the next feed.”

    a.i) After printing the alert, wait for 5 minutes before going back to Step 1. *

    b) If Bowl_Weight is NOT more than OR equal t 30g, output an alert into the display log, “Feeding Complete.”

Waiting for 5 minutes is necessary so that the system doesn’t display “Feeding Incomplete, please remove food from the bowl for the next feed.” continuously and returns to reading the sensor, as pet has eaten food but has wasted it as well.

11. Wait for 5 minutes, then proceed to Step 1

Waiting for 5 minutes is necessary so that the system doesn’t display “Feeding Complete.” continuously and returns to reading the sensor. Both the pet and the system have operated under perfect conditions.

12. Loop repeatedly.

#As this is happening in real time and needs continuous monitoring.