**Assignment 1: The Solving Problem Process**

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## **Step 1: Understand and Define the Problem (Analyze)**

A local animal shelter is looking for an inexpensive and programmable automated pet feeder that can dispense food for cats and dogs during feeding time, monitor whether the food is eaten or how much food was consumed, and to alert the staff for problems like no food was dispensed or food was not consumed. This automated feeder has limited memory, serves one type of pet food with corresponding weight per meal like 200g for dogs and 120g for cats, assuming that the cats and dogs are separated and feeding times is twice a day, which are 8am and 6pm. It is also assumed that food level sensor will send alert if pet food is below 300g. The objective is to implement a solution using low-cost components like servo motor and sensors.

**INPUT**

- Feeding Time

- Food level sensor

- Pet food bowl weight sensor

- Food weight per meal

- Initial food weight in bowl

- Current food weight in bowl

**PROCESS**

- Check if it is feeding time

- Check if food level is okay

- Check if food bowl is empty

- Check if the pet has eaten

- Dispense food

- Create message to be sent

- Wait 10 mins.

**OUTPUT**

- Rotate motor

- Send alert

Figure . Automated Pet Feeder Diagram