Github Repo link

https://github.com/AdiShanbhag/u3315922_Assignment1

Step 1: Understand and Analyze the Problem

The main requirement for this project is to design an Automated Food Dispenser for pets for a local animal shelter. The basic functionality of this system will be as follows

- Scheduled Feeding Time
- Auto-dispense food with a specific size
- Sensor to monitor Food and availability
- Monitor food consumption

The system will have certain Inputs and Outputs. For Example, the Inputs will include a food weight level detector to detect the dispensing and consumption of Food, a real-time clock to manage the schedules.
The outputs will be a display of when the food should be dispensed according to the schedule, and a motor to dispense the right amount of food. An alert system to alert the user if the food is not dispensed.

Focusing on the Operational parameters (assumptions), the feeder will dispense food between 25g to 150g, depending on the pet and their diet. The weight sensor will have to be very accurate so that there is minimal chance of error. The real-time clock will also be maintained accurately as this manages the number of times the food is being dispensed. These features together will ensure that the Automated Food Dispenser will be a pet-friendly experience.

Below is a simple block diagram to represent the flow from inputs such as a timer and a weight measure sensor, and then outputs like an alert system and motor control.