# Problem Statement

ANALYSIS

The local animal shelter needs a low-cost pet feeder system, and it must dispense food at scheduled time.

The device must track whether the food is consumed and how much food is dispensed.

It must also issue alert if the food is not consumed within a set time, the food is not dispensed or if there is a fault in the system.

# Assumptions

1. The feeder is designed either for cats or dogs (not both simultaneously).
2. Sensors and Dispensers are accurate.
3. Each dispensing portion must not exceed more than 100 gm in bowl to ensure accurate feeding and avoid overloading the bowl.
4. Feeder depends on main power, but internal clock runs on backup battery to maintain time.
5. Memory is limited so old data maybe be overwritten automatically.
6. In case of a power outage causing a missed feeding, the systems will issue an alert when the power is restored. The missed feeding may be skipped, and the feeder will resume the normal schedule.

# Inputs

* Scheduled Times
* Current food level
* Amount of food currently in bowl
* Dispenser status (working or not)

# Output

* Alerts for faults or device not working properly.
* Alerts for low food in the container.
* Alert if the 25% of dispensed food in not consumed within 20 min after the scheduled time.
* Displaying scheduled feeding time and food level.
* Logs of feeding events.

Block Diagram for an automated pet feeder.
