Step 1: Analysis

The Problem:
The staff of an animal shelter need a more efficient way to feed all of the cats and dogs at the specific times. The feeder will fix this through automatically feeding the pets at certain times. This will mean the only thing the staff need to do is fill up the food when it is empty, which can be done non particular times.

Inputs and outputs:

- Time input: So, the program has the times the food should be dispensed
- Real-time clock input: So, the program has the time
- Food gram input: So, the pets get fed the correct amount of food
- Food level sensor: So, the dispenser tracks the amount of food in it
- Weight input: To calculate the weight of food in the feeder
- Alert output: To alert the pet owner if there is no food or if food hasn't been eaten
- Motor output: To dispense food to the pet

Assumptions and Limitations:

- The loads of food that enter the bowl will remain the same
- There will only be one kind of pet food in the feeder