Step 1: Understand and Define the Problem

Pet feeder requirements:

* Dispense food at scheduled times.
* How much food is consumed / if food has been consumed.
* Alert for issues.

Inputs:

* Feeding times and current time.
* The amount of food will be dispensed each time.
* Scale sensor for the container of the feeder

Outputs:

* Motor for dispense door.
* Send an alert.
* Send data about the amount of the remaining food
* Send data about the amount of food consumed
* The amount of food will be dispensed at the following scheduled time.

Assumptions / Limitations:

* Hardware related problems such as motor for dispensing food failed.
* The feeder must be connected to Wi-Fi to send alerts.
* Separate containers are needed if there is more than one type of food.

System:

Takes input from clock, scale sensors then compare and gives appropriate responses. Responses can be motor open the gate and dispense food or sending alert to the users.