**Test and Refine the Solution:**

1. Pet eats as expected:

Load System Inputs -> When Current Time = Feeding Time -> Feeding amount

<= to current food stock -> Rotate Motor and dispense food -> After the Pet

has passed minimum consumption threshold send message to staff that the

pet has passed the minimum consumption threshold.

1. Pet does not eat:

Load System Inputs -> When Current Time = Feeding Time -> Feeding amount

<= to current food stock -> Rotate Motor and dispense food -> The Pet has

eaten <= the minimum consumption threshold -> Current time >= Maximum

time threshold -> Send an alert message to staff stating that the pet has failed the

minimum consumption threshold.

1. Food Bin is empty:

Load System Inputs -> When Current Time = Feeding Time -> Feeding amount >

current food stock -> Send an alert message to staff stating that refilling is required.

As the above four examples showcase my current algorithms works just well enough to produce the necessary outputs. However, here are some ideas for improvements:

1. Real Time Consumption Updates- Can maybe look at upgrading the algorithm to provide staff with more real time pet consumption data. Currently, the system only sends updates after the pet has passed or failed the minimum consumption threshold within the set time frame. A real-time feed of consumption levels could allow staff to take proactive action sooner.
2. Multiple Feeding Time Inputs- The system currently assumes all food dispensing occurs at a single pre-specified time, allowing the pet to consume the food at its leisure. This approach is neither entirely accurate nor efficient. Introducing multiple feeding time inputs would allow for more accurate and efficient feeding schedules.
3. Incorporate Predictive Data Analytics – Instead of relying on a pre-defined consumption input, we could rather try to create an algorithm that can analyse historical consumption patterns and other relevant factors to predict a pet’s feeding needs. This would allow for a more flexible and personalised feeding schedules, improving both efficiency and animal wellbeing in the long run.