# Step 5: Test and Refine the Solution (Debug and Verify)

Scenario 1: Pet does not eat:  
Input: There has been no change in reading from the load cell after food has been dispensed  
Output: if there is no change after 10 minutes then an alert notification is sent to staff.  
Improvement: lengthen wait time as pet may take a bit longer to eat.  
  
Scenario 2: Pet eats as expected:  
Input: Mass reading from loading cell falls to specific threshold showing food has been consumed.  
Output: No alert is sent to staff as food has been consumed.  
Improvement: Have an app that sends notifications to the owner of the pet that the pet has been consuming food as expected.  
Scenario 3: Food bin is empty:  
Input: Hopper level falls below specified threshold thus not allowing to dispense.  
Output: Sends alert to staff that it is now empty and needs a refill.  
Improvement: Having a backup system that refills the main when it runs out.  
  
PART II:  
  
  
  
  
  
  
  
  
  
  
PART III: AI Agent Integration  
The prompt I provided copilot with. Was for it to generate alternative solutions to the problem. It provided me with insight on issues with alert system. Emphasizing on the factor that it only operates when there’s network availability, the drawback of this system is that if met by unprecedented circumstances that removes network availability, it would result in staff having to regularly check on the components of the system manually in order to see to if everything is working as it should be. The solution provided was to have an LED indicator that represents an alert once it starts flashing, which would make for a more reliable system. The other issue highlighted the wait time being fixed at 10 minutes. As the pet can change the time it takes to eat the food, using the set time of 10 minutes is unreliable and the solution it presented was to install a motion sensor near the food so it can allow you to monitor its eating patterns and adjust the wait time accordingly.  
The 2nd prompt I gave it was to Review my step 4 and suggest improvements. It highlighted that the current time being equal to the feeding time may cause issues as there can be a mismatch between the times even if it’s by a difference of seconds. The improvement it suggested was to put room for error by about + or – 5 minutes which led me to change my line of code from “IF CurrentTime=FeedingTime” to “IF CurrentTime within FeedTime” which would help fix this error.