**STEP 5 – Testing and Refining the Solution (Debug and Verify)**

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| **Test Name** | **F-TIME** | **F-LEVEL** | **F-WEIGHT** | **Expected Outcome** | **Actual Outcome** | **Notes** |
| Food Dispensed? | FALSE | FALSE | N/A | No Food Dispensed | No Food Dispensed | Food cannot be dispensed until the scheduled Feeding Time |
| Food Dispensed? | TRUE | FALSE | N/A | No Food Dispense. SMS ALERT\_F-LEVEL | No Food Dispense. SMS ALERT\_F-LEVEL | SMS alert sent since no food can be dispensed due to low level in the tank |
| Food Dispensed? | TRUE | TRUE | N/A | Food Dispensed | Food Dispensed | When it is scheduled feeding time and the food level is above the minimum level, food is dispensed |
| Pet has eaten food? | TRUE | TRUE | FALSE | Pet did not eat food or ate at least 100 gm of food. SMS ALERT\_F-WEIGHT | Pet did not eat food or ate at least 100 gm of food. SMS ALERT\_F-WEIGHT | For the pet to have considered eating food, the F-WEIGHT value after 10 minutes of food dispense should be equal to or below 150 gm |
| Pet has eaten food? | TRUE | TRUE | TRUE | Pet ate at least 100 gm of food. | Pet ate at least 100 gm of food. | The F-WEIGHT value after 10 minutes of food dispense was equal to or below 150 gm meaning Pet ate sufficient food |

**Discussion on testing and suggested improvements:**

The above testing scenarios provide evidence that the system functions as expected, considering all the constraints, assumptions and limitations. The food is only dispensed when it is scheduled feeding time and when the food level in the tank is above minimum level. The fact if the pet has eaten food is only valid if the weight of food in the food bowl, 10 minutes after the dispense of food, falls from 250 gm (maximum capacity of the bowl) to at least 150 gram which is true in this case.  
  
The system can be further improved if, for example, it could be determined what exact amount of food should the servo motor dispense by calculating the difference between the amount of food remaining in the bowl and maximum capacity of the bowl. This would help avoid food wastage.