**STEP 2: Organise and Describe the Data**

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| **Name** | **Units** | **Input/Output** | **Notes** | **Sample Values** | **Constraints** |
| Scheduled feeding times | Time (hh:mm) | Input | Determined by user and each day can have multiple. | 6:00, 19:30 | Can only have maximum three scheduled times per day and they must be between 00:00 and 23:59. |
| Real time clock | Time (hh:mm) | Input | Used to compare scheduled feeding times against current time. | 8:00, 14:45 | 00:00 – 23:59 and updates with the current time. |
| Food sensor | Boolean | Input | Detects if food has been dispensed. | True = Food sensor detects food dispensed, False = Food sensor detects food not dispensed | Updates in real time with each scheduled feeding time. |
| Food scale | Boolean | Input | Detects if food has been consumed after the feeding period passes. | True = Scale detects food not consumed after the feeding period, False = detects food consumed after the feeding period | Updates once after the feeding period passes for each scheduled feeding time. |
| Rotating motor for dispensing food | Boolean | Output | If scheduled feeding time matches current time, the motor rotates to dispense the food. | True = Motor activated, False = Motor not activated | Dispenses a constant amount of 150 grams of food per scheduled feeding time. |
| User alert (food not dispensed) | Boolean | Output | Sent if the food is not dispensed at the scheduled feeding time. | 1 = Alert sent, 0 = Alert not sent. An example message is “PET FEEDER ALERT: Food not dispensed.” | Assumes user responds to alerts promptly, preventing infinite alert cycles. |
| User alert (unconsumed food) | Boolean | Output | Sent if the food is not consumed within the feeding period | 1 = Alert sent, 0 = Alert not sent. An example message is “PET FEEDER ALERT: Food not consumed within feeding period.” | Assumes user responds to alerts promptly, preventing infinite alert cycles. |
| User update | Boolean | Output | Sent if the food is dispensed at the scheduled time and consumed within the feeding period. | 1 = Update sent, 0 = Update not sent. Example update is “PET FEEDER UPDATE: Food consumed successfully!” | Limited to one update per feeding and is delivered as soon as the scale confirms the food has been consumed. |

Operational parameters/constants include a thirty-minute feeding period and at each scheduled feeding time 150 grams of food is dispensed.