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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable Name** | **Input/Output** | **Sample Values** | **Units/Values** | **Observation** | **Constrains** |
| Schedule\_time | Input | 06:00 and 18:00 | Time Format | Defined by the user | The code needs to treat time as a single numerical value (e.g., 00:06 is 6 minutes) and also account for the day change. |
| Real-time | Input | 14:00 | Time Format | Time from clock |
| Feeding\_time | Input | 10 seconds | Seconds | User input | - |
| Bin\_full | Input | Full = 1  Empty = 0 | Boolean | Micro switch under the bin. | Normally open  Setpoint: 100g discounting bin weight |
| Bowl\_full | Input | Full = 1  Empty = 0 | Boolean | Micro switch under bowl. | Normally open  Setpoint: 50g  Discouting bowl weith |
| Servo | Output | ON/OFF | ON/OFF | Feed Screw Motor controlled | Normally open  Relay |
| Green\_light | Output | ON/OFF | ON/OFF | Greed LED that shows food bin has food. |
| Red\_light | Output | ON/OFF | ON/OFF | Red LED that shows food has not been eaten or food bin is empty. |

Operational constrains considerations: Given the client is an animal shelter, the project's primary considerations were cost-effectiveness and system durability. A key concern was the risk of animals damaging electrical components and compromising the system's functionality. Consequently, the design was limited to using only micro switches, which means the system cannot scale the mass of food.

**GitHub repository link**

The link for my repository is show bellow

<https://github.com/KennySousa224/pet-feeder-project>

**References**

* Lipovski, G. J. (1999). *Introduction to microcontrollers: Architecture, programming, and interfacing of the Motorola 6812*. Academic Press.