**PART 1: On the Solving Problem Process**

**Organise and describe all the data and inputs.**

**List input types.**

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| **INPUT** | **DATA TYPE** | **SAMPLE VALUES** | **DESCRTIPTION** |
| System Clock | Time | 02:50:48 | Provides current time, which is checked for feeding schedule. |
| Feeding Schedule | Time | [“08:00”, “13:00”, “18:00”, “21:30”] | Staff sets time in 24-hour format. And system store it as primary trigger for feeding schedule |
| Portion Size | Integer | 1,2,3 | The number represents units of cups to be poured on bowl, and as per that the system converts this to motor run time. |
| Bowl Sensor | Boolean | True (Food Present) / False (Empty) | A sensor indicated whether the bowl is filled or empty. |
| Real Time Clock | Time | 08:00, 17:30 | Provides current date and time to trigger scheduled feeds. |

**List expected outputs.**

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| **OUTPUT** | **SAMPLE VALUES** | **DESCRTIPTION** |
| Motor Control Signals | Runs 3s, Runs 5s, Runs 7s | Runs the motor for particular set of time. |
| Buzzers | Buzzer on/off | Notification/Alerts the staff member if any issues |
| LEDs | LED Blinking | Alerts/Sends notifications to the staff. |
| Event Log Entry | “21:30 – Dispensed 50g – Success” | Stores Feeding Attempt in the memory. |
| Status Display | “Next Feed: 21:30” | Shows next feed time or even feeder status. |

**Provide sample values and operational constraints**

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| **NAME** | **SAMPLE VALUES** | **DESCRTIPTION** |
| Feeding Time | “9:30, 13:00, 16:30, 21:30” | It should have 24hr clock, and feeding occurs at the particular time. |
| Portion Size | 30g, 50g, 80g | Preset Sizes of bowl and cups. |
| Alert mechanism | LED Blinking, Buzzers Alerting | Alert Mechanism should always kept active until it acknowledges staffs |
| Event Log Capacity | 200 entries | Upto 200 entries allowed due to memory capacity, and oldest memory gets overwritten when entry limit is reached |
| Status Display | “Next Feed: 21:30” | Shows next feed time or even feeder status, and gets updated every 10 seconds |