Automated Pet Feeder

Step 2: Organise and Describe the Data

- Features: scheduled feeding times, an alert system, and monitoring food level in the pet bowl.
- Inputs: weight sensor, clock, food level sensor in the feeder (whether there is food in the feeder or not).
- Outputs: rotate servo motor, alert system to alert the staff, and logs to store data.
- Expected outputs: the feeder feeds the pet at the set time, and monitors the food weight in the pet bowl. If the weight did not change, it will alert the staff.
- Assumptions: only one type of pet food, limited memory, dry food only, limited food in the feeder.

Parameter	Type	Example value
Is it Feeding Time?	Decision	8:00 am or 18:00 pm
Is there a change in the weight of the bowl?	Decision	0g or 500g.
Is there food in the feeder?	Decision	Full/sufficient/low.
Servo motor	Output	Rotate for 3 seconds.
Alert system	Output	Beep/flash.

Inputs table:-

Input	type	Example value	Operational constraint
Time	Continuous variable (clock)	8:00 am or 18:00 pm	±1 min accuracy; battery backup for time
Weight sensor	Continuous variable(Digital)	0g or 500g	Range 0–5000 g; check every second; ±5 g accuracy.
Food level sensor	Continuous variable(Digital)	0%(empty), 50%(half), 100%(full).	Range 0–100%; update every minute; low food <20%..

Outputs table:-

Output	type	Example value	Operational constraint
Servo motor	Output	Rotate for 3 seconds	Rotate 3 seconds, stop if jammed.
Alert system	Output	Horn/buzzer/LED	Send within 1 min; retry if it fails.
Log/display	Output(Data entry)	“Fed at 8:00 am”	Save time, action, and result; store recent events.