Variable	Type	Component /Source	Description	Sample Values	Operational Constraints
current_time	Input	Real time clock	Tracks current time for scheduled feeding	6:00, 7:00. 15:00	24 hours feeding system only, up to 10 feedings a day
food_level	Input	Food level sensor	Senses the level of food servings in the storage for estimating the amount of food left	10, 9, 8	Max 10 servings
bowl_weight	Input	Weight sensor under bowl	Senses the amount of food consumed	100g, 50g, 25g	Max 200g feeding
feeding_times[ ]	Input array	Staff input	List of all scheduled feeding time	[12:00, 18:00, 13:50]	Up to 10 feedings a day
feeding_time	Input	Feeding time	Takes note of the scheduled time for feeding the pets everyday	12:00, 18:00, 13:50	Up to 10 feedings a day
send_alert	Output	Alert system	Alarm the staff if there are any issues. For example- sends alert when food level is low, sends alert when there is food left in the bowl.	“No Food Alert”, “Food Left in the Bowl Alert”	Requires buzzer, battery for the buzzer
dispense_food	Output	Food dispensing system: servo motor	Rotates motor to dispense the food at scheduled time	ON/OFF	Battery for the dispenser
empty_bowl_weight	Constant	Calibrated reference	Known weight of an empty bowl used for comparison	0g, 10g	Must be accurately calibrated
Wait	Constant	Internal system logic	Time allowed for pet to consume food	15 minutes	Fixed duration, non-editable