

## Step 3: Plan the Solution

### Algorithm Logic Explanation

1. **System Initialisation** – When powered-on, the system loads the programmed feeding schedule and info, sets the bowl-weight sensor to zero and performs a self-check to confirm the function of the motor and sensors.
2. **Check Time** – The Real-Time Clock (RTC) continuously monitors the current time. If the current time matches the scheduled feeding time, the cycle begins. If not, the system waits 1 minute then re-checks the RTC.
3. **Check Food Bin** – The system checks the food level in the food storage bin. If the level is too low, an alert is sent to staff. If not, the coding continues.
4. **Dispense Food** – The motor rotates to deliver the programmed amount of food.
5. **Error Check: Dispensing** – If the weight of the bowl does not change as expected after food should have been dispensed, an alert is sent to staff.
6. **Eating-Window Monitoring** – A 10-minute timer is started. Once it ends, the bowl weight is checked again.
7. **Eating Verification** – If the bowl weight does not decrease by at least the pre-programmed amount that counts as suitable, an alert is sent to staff and this data is logged. If the weight does decrease sufficiently, the system logs a successful feed.
8. **Return to Loop** – After this, the system returns to the Check Time loop.