Step 4: Implement the Solution

Pseudocode

```
START SYSTEM
    // This marks the start of the automated pet feeder system function.
INITIALISE SYSTEM
    // This sets up the user customisable feeding schedules and the real time clock.
    // The system is designed for a continuous function using the electrical wall outlet
LOOP CONTINOUSLY
    // The system continuously checks conditions and performs actions, running continually
   IF (IsItFeedingTime IS TRUE · NOT (FoodStorageTank IS EMPTY)) THEN
      // This decision checks two conditions:
      // 1. If the current time from the real time clock matches a scheduled feeding time
      // 2. AND if the food storage tank is NOT empty, by checking with the infrared level sensor
      ACTIVATE DISPENSING MECHANISM
      // The system physically dispenses dry kibble
      // A sound is announced to alert the animal
      WAIT FOR 10 MINUTES
      // A timer is set which allows the pet enough time to eat the food
      IF (BowlWeight IS UNCHANGED) THEN
         // This decision uses the weight sensor input to determine if the kibble in the bowl has been eaten
         // If the bowl weight is unchanged, it means the has not been eaten
         OUTPUT: ALERT STAFF (FOOD UNEATEN)
         // A Alert is announced and displayed to staff
         // This prompts the staff to check on the animal's well being
         LOG: UNEATEN FEEDING
         // This is logged by the system, which is important for distinguishing different feeding times
(E.g., Breakfast vs Lunch)
   ELSE
         // The bowl weight has changed, indicating the kibble was eaten
         LOG: SUCCESSFUL FEEDING
         // This is logged by the system, to confirm the feeding was successful
```

```
    END IF
  ELSE IF (IsItFeedingTime IS TRUE · FoodStorageTank IS EMPTY) THEN
    // This path is taken if it IS feeding time, But the food storage tank is empty
    OUTPUT: ALERT STAFF (FOOD TANK EMPTY)
    // A alert is announced and displayed to the staff to take action
    // This notifies them to refill the food tank
  ELSE (NOT (IsItFeedingTime IS TRUE)) THEN
    // This path is taken if it is currently NOT a scheduled feeding time
    WAIT FOR NEXT CYCLE
    // The system waits and then revisits the "IsItFeedingTime" check, delaying the loop until the next scheduled interval
  END IF
END LOOP
  // This returns to the beginning of the loop to check for the next scheduled feeding time
```