Step 4: Pseudocode

```
BEGIN

  // System Initialization
  LOAD feeding schedule
  LOAD portion size
  SET system_state ← Idle

  LOOP forever:
      READ current_time from RTC

      IF current_time matches schedule OR manual_button pressed THEN
          CALL FeedingRoutine
      ENDIF

  END LOOP

-------------------------------------------------

PROCEDURE FeedingRoutine:
    // Check bin food level
    IF bin_level <= 10% THEN
        ALERT "Bin Low"
        RETURN to main loop
    ENDIF

    // Dispense food
    ACTIVATE servo_motor (open gate)
    WAIT programmed_duration
    DEACTIVATE servo_motor (close gate)

    // Verify dispensing
    IF chute_sensor detects food THEN
        CONTINUE
    ELSE
        RETRY dispense once
        IF chute_sensor still no food THEN
            ALERT "Jam Detected"
            RETURN to main loop
        ENDIF
    ENDIF
```

```
    // Wait for pet to eat
    WAIT 10 to 20 minutes
    CHECK bowl_weight

    IF bowl_weight decreased THEN
        LOG "Feeding Success"
    ELSE
        ALERT "Food Not Eaten"
    ENDIF

    RETURN to main loop
END PROCEDURE

END
```