Automated Pet Feeder Project

❖ Overview

This project simulates the logic and behavior of a low-cost, programmable automated pet feeder system designed for a local animal shelter. The system is intended to:

- Dispense food for cats and dogs at scheduled times.

- Monitor food consumption using sensors.

- Alert staff if food is not dispensed or not eaten.

The solution is built using the Integrated Problem-Solving Process taught in the Introduction to Information Technology unit at the University of Canberra.

Problem-Solving Process

❖ Step 1: Understand and Define the Problem

- Defined system requirements and assumptions.

- Identified inputs (e.g., feeding time, sensors) and outputs (e.g., motor, alerts).

- Created a system sketch to visualize component interactions.

❖ Step 2: Organise and Describe the Data

- Listed all input/output types and operational constraints.

- Created a data table with sample values and expected behavior.

❖ Step 3: Plan the Solution

- Designed a flowchart using Draw.io to represent system logic.

- Included decision-making for feeding, error detection, and alerts.

❖ Step 4: Implement the Solution

- Translated logic into plain English code using modular tasks.

- Used meaningful variable names and clear comments.

❖ Step 5: Test and Refine

- Tested scenarios: pet eats, pet doesn't eat, food bin empty, sensor failure.

- Suggested refinements: retry logic, remote alerts, feeding logs.

❖ Repository Structure