



Design of a Low-Cost Monkey Deterrent System

Dynamics Control and Instrumentation (GOEE4002)

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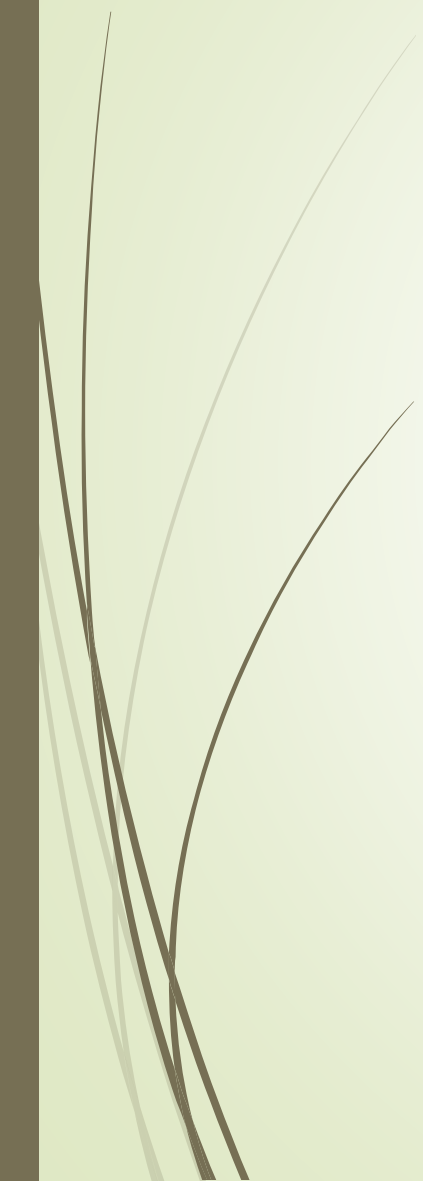
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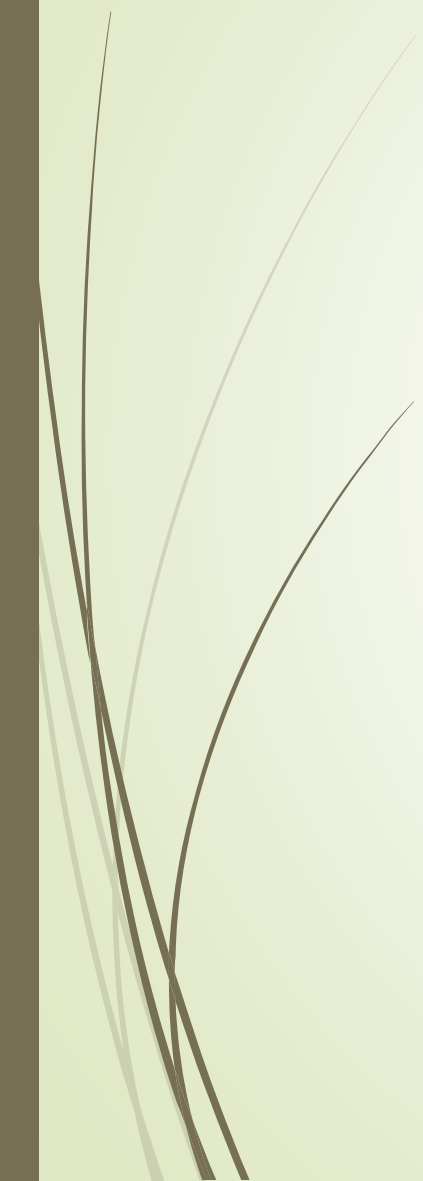
Introduction



- Crops at the Chom Zangari women's cooperative are being destroyed by monkeys.
- Current methods such as scarecrows and guards are ineffective.
- The goal is to design an automated, low-cost deterrent system.



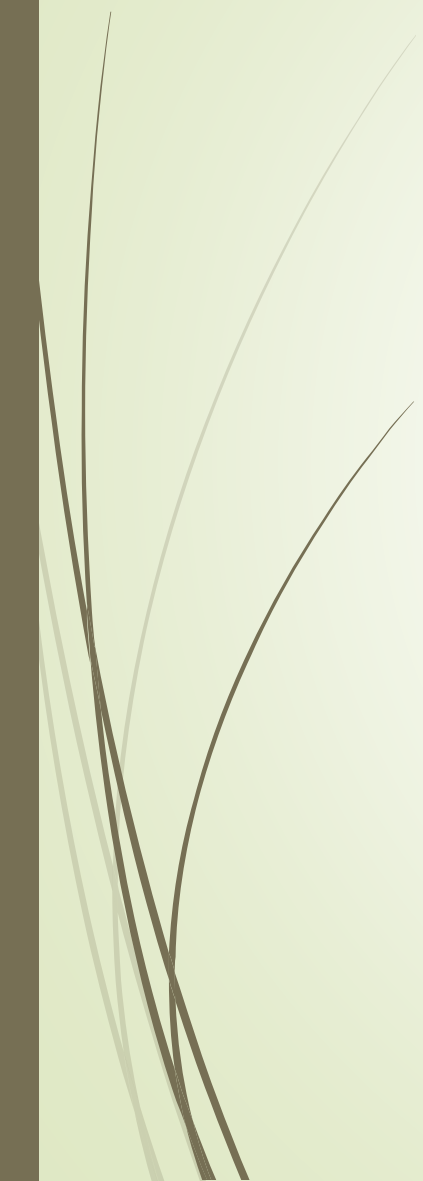
Project Challenges



- No access to grid electricity
- Must use renewable energy
- Monkeys are intelligent and adaptable
- Solution must be low cost and reliable



What Deters Monkeys?

- Ultrasonic devices
 - Flashing lights
 - Natural repellents
 - Visual deterrents
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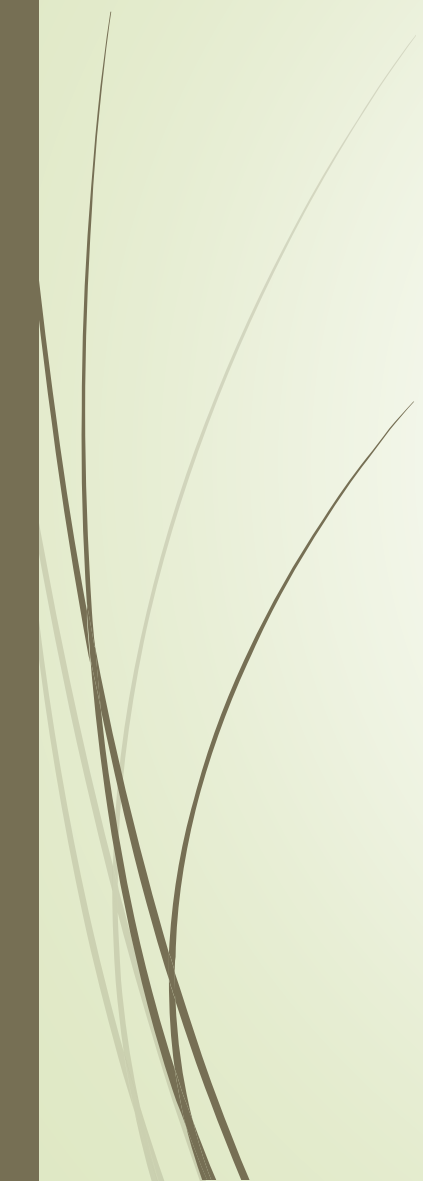
System Overview

The system consists of three main subsystems:

- Power subsystem
- Detection subsystem
- Deterrent subsystem

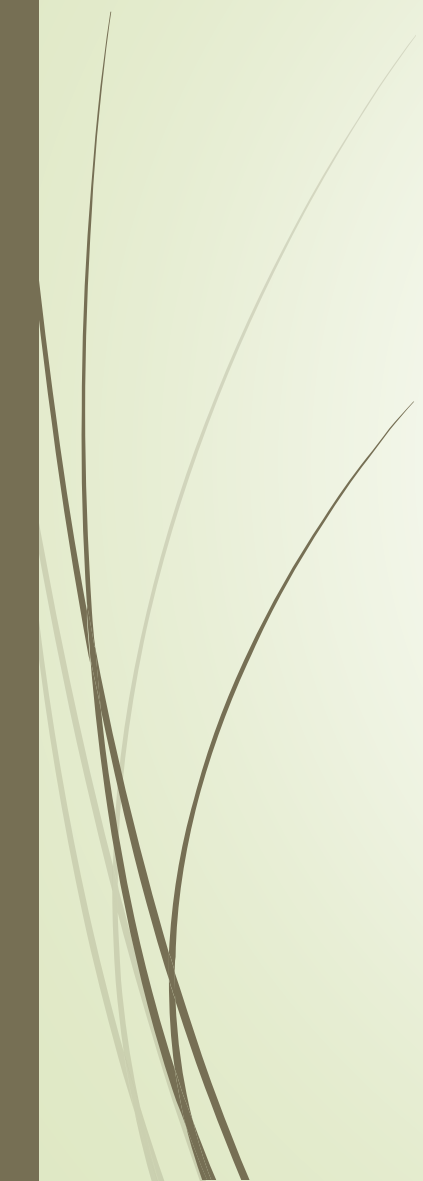


Power Subsystem

- ▶ Powered by a solar panel
 - ▶ Allows operation without grid electricity
 - ▶ Renewable and sustainable energy source
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Detection Subsystem

- Uses a PIR motion sensor
 - Detects movement near crops
 - Sends signal to the Arduino controller
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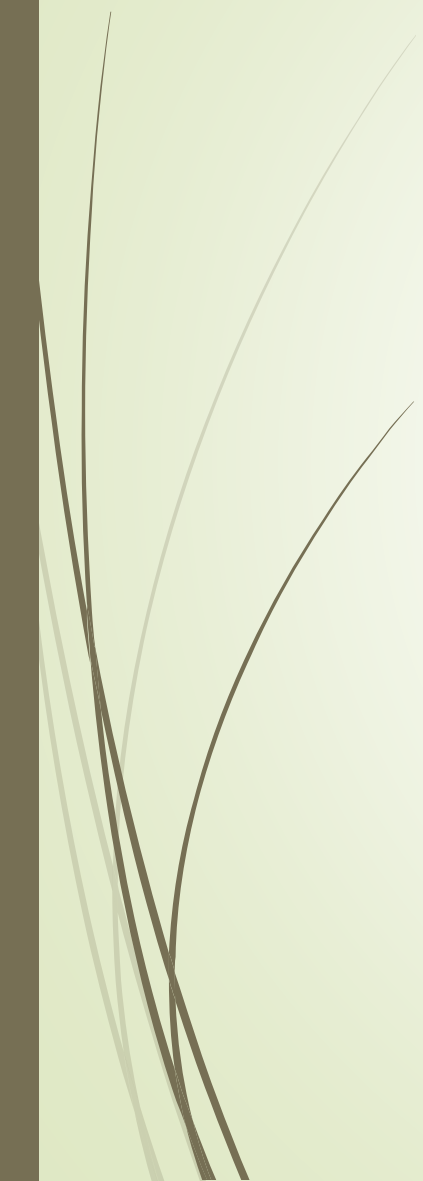


Deterrent Subsystem

When motion is detected:

- LED flashes
- Buzzer produces sound

These disturbances help scare monkeys away





Cost Analysis

➤ Total estimated cost: £24.73

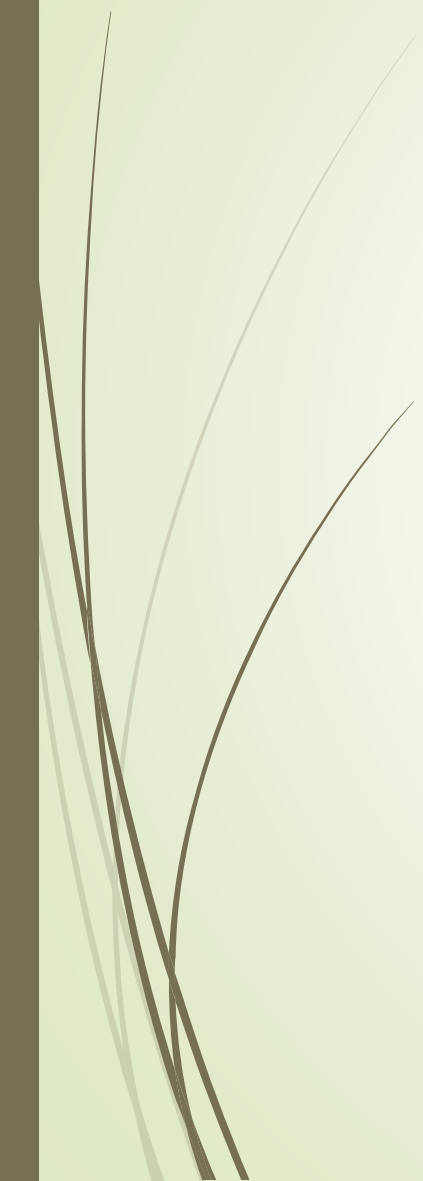
Key components:

- Arduino board
- PIR motion sensor
- Buzzer and LED
- Solar panel

Bulk purchasing can reduce the cost further.



Conclusion



- A low-cost automated monkey deterrent system was designed.
- Uses solar power, motion detection, and sound/light deterrents.
- Helps protect crops in remote areas.
- Future improvements could include louder alarms and weatherproof casing.