Smart Pet Feeder

import time

import random

from gpiozero import Servo, Motor, LED, Button

from playsound import playsound

import speech\_recognition as sr

# Setup components

servo\_food = Servo(17) # Pin controlling food dispenser

water\_pump = Motor(forward=27, backward=22) # Pin controlling water dispenser

music\_mode\_led = LED(5) # LED to indicate calm music mode

medicine\_motor = Motor(forward=6, backward=13) # Medicine dispenser

# Voice Recognition Setup

recognizer = sr.Recognizer()

def voice\_command():

with sr.Microphone() as source:

print("Listening...")

audio = recognizer.listen(source)

try:

command = recognizer.recognize\_google(audio)

print(f"Command received: {command}")

return command.lower()

except sr.UnknownValueError:

print("Sorry, I did not understand.")

return ""

# Feeding system

def feed\_pet():

print("Dispensing food...")

servo\_food.max() # Dispense food

time.sleep(2) # Wait 2 seconds

servo\_food.min() # Stop dispensing

print("Food dispensed.")

# Water dispenser system

def give\_water():

print("Dispensing water...")

water\_pump.forward() # Activate water pump

time.sleep(3) # Dispense for 3 seconds

water\_pump.stop() # Stop dispensing

print("Water dispensed.")

# Calm music system

def play\_calm\_music():

print("Playing calm music...")

music\_mode\_led.on() # Indicate music mode

playsound('calm\_music.mp3') # Play sound

music\_mode\_led.off()

# Medicine dispenser

def dispense\_medicine():

print("Dispensing medicine...")

medicine\_motor.forward() # Activate medicine motor

time.sleep(1) # Dispense medicine

medicine\_motor.stop()

print("Medicine dispensed.")

# Main loop to listen for commands

while True:

command = voice\_command()

if "feed" in command:

feed\_pet()

elif "water" in command:

give\_water()

elif "music" in command:

play\_calm\_music()

elif "medicine" in command:

dispense\_medicine()

elif "stop" in command:

print("Stopping the system.")

break

else:

print("Invalid command, please try again.")

time.sleep(1)