**Step 1: Set Up Your Raspberry Pi**

Make sure you have:

* Raspberry Pi 4 or 5 with Raspberry Pi OS installed.
* A working internet connection.
* A connected camera module (e.g., Camera Module 3) or USB webcam.
* Monitor, keyboard, and mouse (or SSH/VNC access).

**Step 2: Enable the Camera**

Open terminal:

sudo raspi-config

Go to Interface Options → Camera and enable it.

Reboot the Pi:

sudo reboot

**Step 3: Install Required Python Libraries**

Run these commands in the terminal:

sudo apt update

sudo apt install python3-opencv python3-tk

**Step 4: Fix Platform-Specific Issue**

My code uses this line: import winsound, but winsound only works on Windows.

Fix:

Replace this line:

import winsound

With this (cross-platform beep alternative for Linux):

import os

def beep():

os.system('play -nq -t alsa synth 0.2 sine 1000')

Also, install sox:

sudo apt install sox

Then in the motion detection code, change:

winsound.Beep(1000, 200)

To:

beep()

**Step 5: Run Your Script**

Save your file ( smart\_vision.py) and run:

python3 smart\_vision.py

Optional:

Make sure your icon file pi.ico exists in the same folder or remove this line:

root.iconbitmap(ICON\_PATH)

to avoid errors.