

```
In [12]: !pip install pygame  
         !pip install pyfirmata
```

Requirement already satisfied: pygame in c:\users\abohamam\anaconda3\lib\site-packages (2.5.2)

```

In [5]: import pyfirmata
import pygame
import cv2

comport='COM4'
board=pyfirmata.Arduino(comport)
control=board.get_pin('d:7:o')

pygame.init()
pygame.mixer.init()
fire_sound = pygame.mixer.Sound(r"C:\Users\abohamam\Downloads\fire-alarm-337")

cap = cv2.VideoCapture(0)
from ultralytics import YOLO
model = YOLO(r"C:\Users\abohamam\Downloads\fire.pt")
while True:
    ret, frame = cap.read()
    if not ret:
        print("open camera")
        break
    results= model(frame)
    for result in results:
        boxes = result.boxes # Boxes object for bbox outputs
        cls = boxes.cls.tolist() # Convert tensor to List
        if len(cls) != 0 and result.boxes.conf[0] >=0.5 :
            fire_sound.play()
            control.write(1)
        else:
            fire_sound.stop()
            control.write(0)

    frame2 = results[0].plot()
    cv2.imshow('Camera video', frame2)
    if cv2.waitKey(1) == ord('q'):
        break
cap.release()
cv2.destroyAllWindows()

```

0: 480x640 1 fire, 120.0ms

Speed: 2.7ms preprocess, 120.0ms inference, 0.0ms postprocess per image
at shape (1, 3, 480, 640)

0: 480x640 (no detections), 217.1ms

Speed: 14.2ms preprocess, 217.1ms inference, 2.0ms postprocess per image
at shape (1, 3, 480, 640)

0: 480x640 (no detections), 147.7ms

Speed: 3.8ms preprocess, 147.7ms inference, 1.0ms postprocess per image
at shape (1, 3, 480, 640)

0: 480x640 (no detections), 165.7ms

Speed: 4.3ms preprocess, 165.7ms inference, 0.0ms postprocess per image
at shape (1, 3, 480, 640)

0: 480x640 (no detections), 131.0ms

Speed: 4.5ms preprocess, 131.0ms inference, 0.0ms postprocess per image
at shape (1, 3, 480, 640)

In []:

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