**DAY 3=OBJECT DETECTION USING OPEN CV AND CALCULATION OF X,Y COORDINATES OF THE RECTANGLE FORMED SURROUNDING THE OBJECT**

**CODE:**

import cv2

cap = cv2.VideoCapture(0) #here, the webcam takes the video live during the runtime and finds the realtime object detection

bgsubtract = cv2.createBackgroundSubtractorMOG2()

(for creating masking which can be used to give only the borders and no background)

while True:

    ret, frame = cap.read()

    if not ret:

        break

    frame = cv2.resize(frame, (640, 480))

    fgmask = bgsubtract.apply(frame)

    contours, \_ = cv2.findContours(fgmask, cv2.RETR\_EXTERNAL, cv2.CHAIN\_APPROX\_SIMPLE)

    for cnt in contours:

        area = cv2.contourArea(cnt)

        if area > 500:

            x, y, w, h = cv2.boundingRect(cnt)

            centerX = x + w // 2

            centerY = y + h // 2

            cv2.rectangle(frame, (x, y), (x + w, y + h), (255, 0, 0), 2)

            cv2.circle(frame, (centerX, centerY), 5, (255, 255, 0), -1)

            cv2.putText(frame, f"({centerX}, {centerY})", (x, y - 10),

                        cv2.FONT\_HERSHEY\_SIMPLEX, 0.5, (0, 255, 0), 2)

            print(f"Object at: ({centerX}, {centerY})")

    cv2.imshow('Real-Time Detection', frame)

    cv2.imshow('Foreground Mask', fgmask)

    if cv2.waitKey(30) & 0xFF == ord('q'):

        break

cap.release()

cv2.destroyAllWindows()

OUTPUT:



