TASK4

PYTHON CODE FOR MOTION DETECTION

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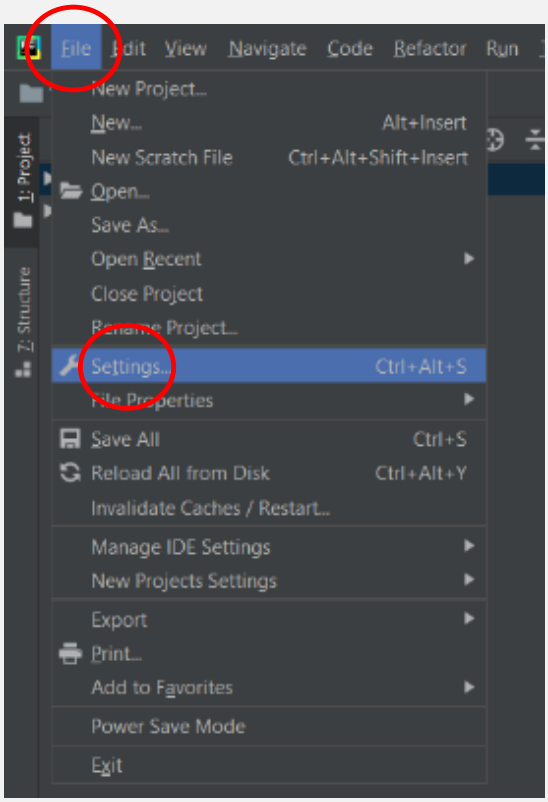
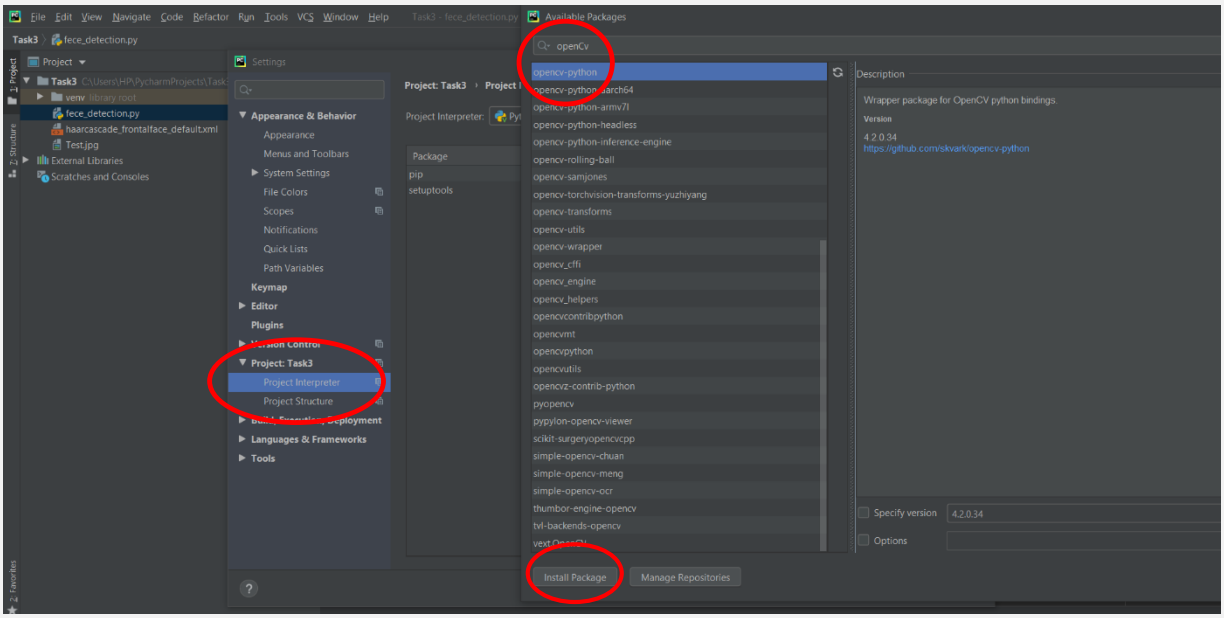
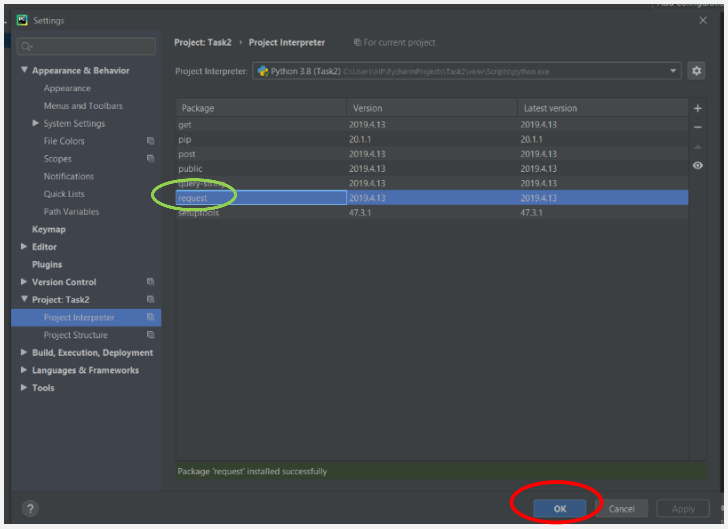
Download the library-openCV

File>>Settings>>Your Project>>Project Interpreter>> + >> openCV >>Install Package

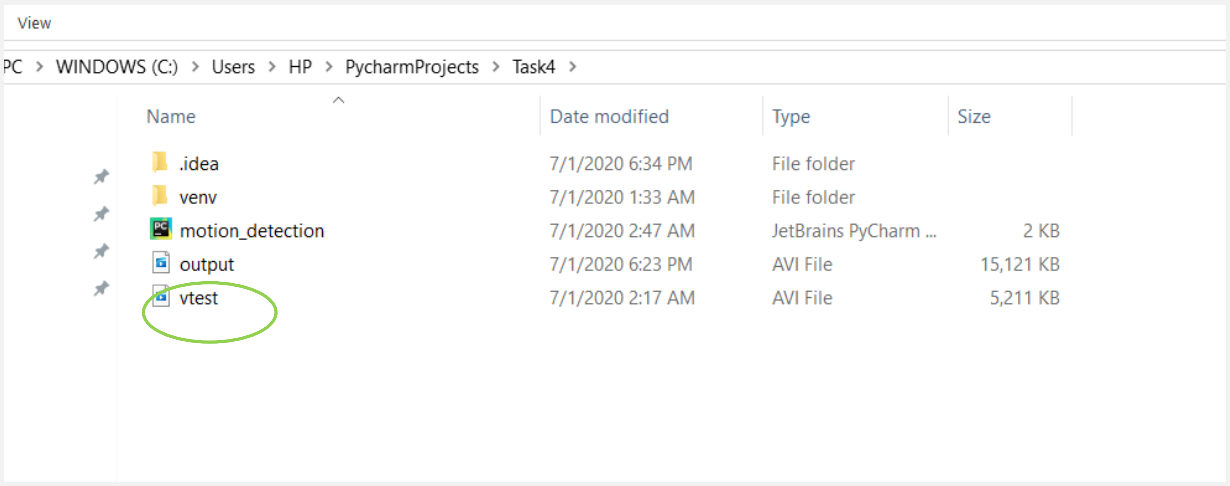






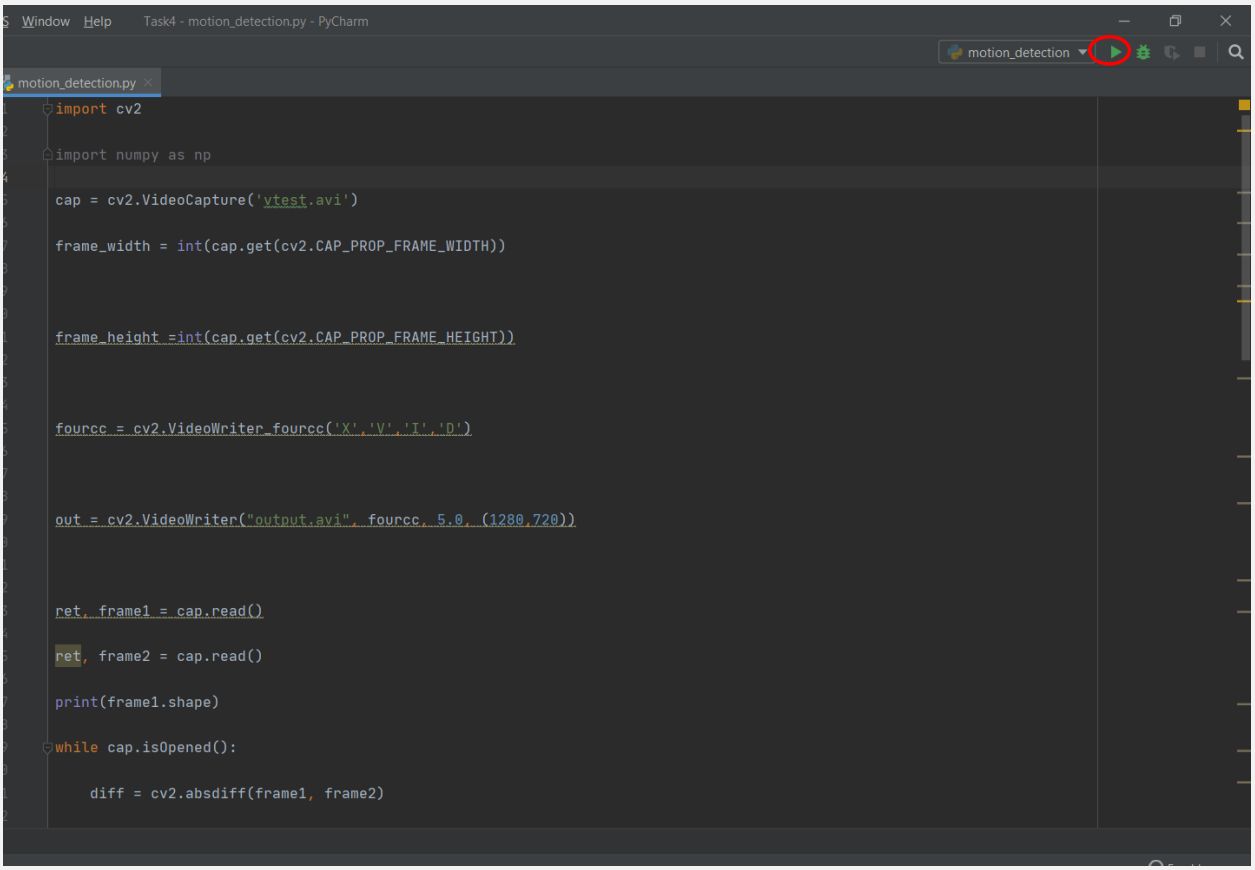
Note

Download test video and save it in the same folder of your project.



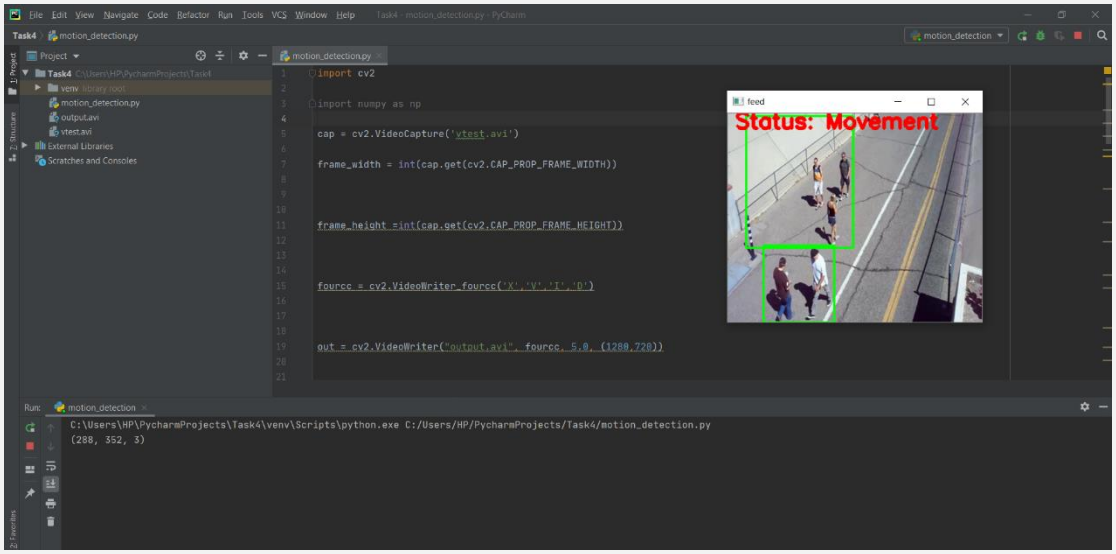
Write the Code

Your Project>>New>>Python File>>Write the Code>>Run



```
import cv2
import numpy as np
cap = cv2.VideoCapture('vtest.avi')
frame_width = int(cap.get(cv2.CAP_PROP_FRAME_WIDTH))
frame_height =int(cap.get(cv2.CAP_PROP_FRAME_HEIGHT))
fourcc = cv2.VideoWriter_fourcc('X','V','I','D')
out = cv2.VideoWriter("output.avi", fourcc, 5.0, (1280,720))
ret, frame1 = cap.read()
ret, frame2 = cap.read()
print(frame1.shape)
while cap.isOpened():
    diff = cv2.absdiff(frame1, frame2)

    gray = cv2.cvtColor(diff, cv2.COLOR_BGR2GRAY)

    blur = cv2.GaussianBlur(gray, (5,5), 0)

    _, thresh = cv2.threshold(blur, 20, 255, cv2.THRESH_BINARY)

    dilated = cv2.dilate(thresh, None, iterations=3)

    contours, _ = cv2.findContours(dilated, cv2.RETR_TREE,
cv2.CHAIN_APPROX_SIMPLE)

    for contour in contours:

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

        if cv2.contourArea(contour) < 900:

            continue

        cv2.rectangle(frame1, (x, y), (x+w, y+h), (0, 255, 0), 2)

        cv2.putText(frame1, "Status: {}".format('Movement'), (10, 20),
cv2.FONT_HERSHEY_SIMPLEX,

                    1, (0, 0, 255), 3)

    #cv2.drawContours(frame1, contours, -1, (0, 255, 0), 2)

    image = cv2.resize(frame1, (1280,720))

    out.write(image)

    cv2.imshow("feed", frame1)

    frame1 = frame2

    ret, frame2 = cap.read()

    if cv2.waitKey(40) == 27:
        break
cv2.destroyAllWindows()

cap.release()

out.release()
```

The Output



Also, there is a video recording of output you can see.