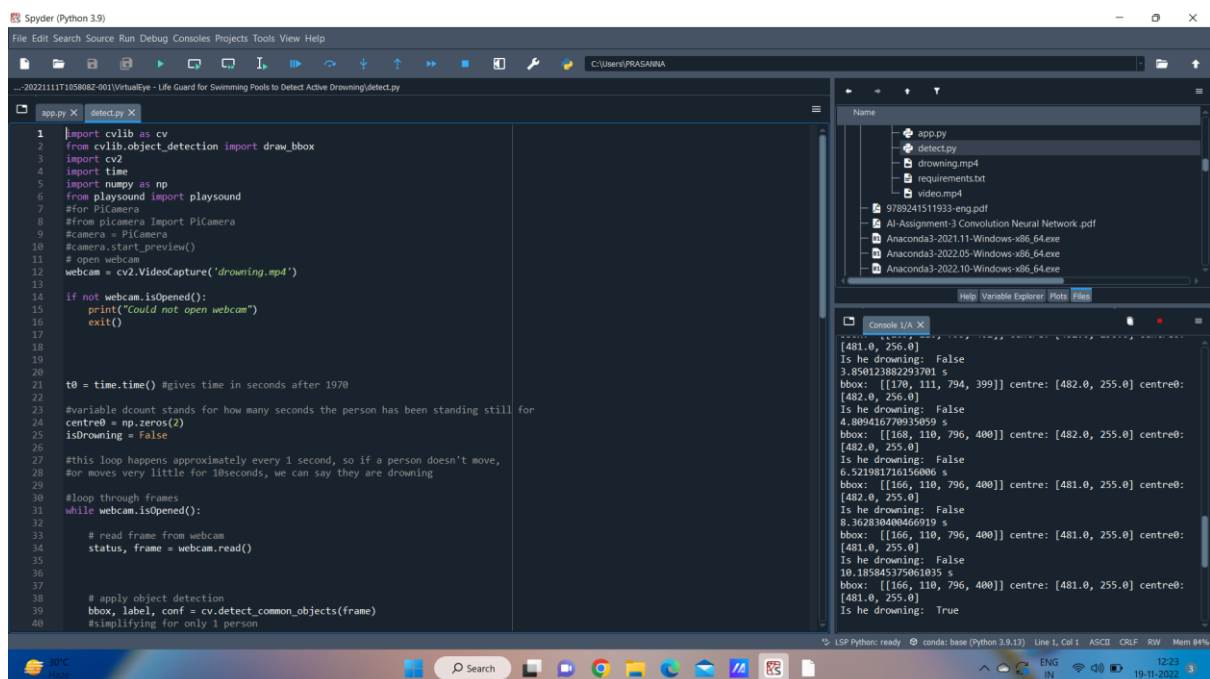


Sprint – 3 Testcase

Team ID	PNT2022TMID47734
Project Name	Project - Project - VirtualEye - Life Guard for Swimming Pools to Detect Active Drowning

Case1: Detection of drowning

In this we will detect whether our project is capable of detecting a person drowning or not. This helps people to know whether the person is drowning or not.



The screenshot displays the Spyder Python IDE interface. The main editor window shows a Python script named 'detect.py' with the following code:

```
1 import cvlib as cv
2 from cvlib.object_detection import draw_bbox
3 import cv2
4 import time
5 import numpy as np
6 from playsound import playsound
7 #for PiCamera
8 #from picamera import PiCamera
9 #camera = PiCamera
10 #camera.start_preview()
11 # open webcam
12 webcam = cv2.VideoCapture('drowning.mp4')
13
14 if not webcam.isOpened():
15     print("Could not open webcam")
16     exit()
17
18
19
20
21 t0 = time.time() #gives time in seconds after 1970
22
23 #variable dcount stands for how many seconds the person has been standing still for
24 centre0 = np.zeros(2)
25 isDrowning = False
26
27 #this loop happens approximately every 1 second, so if a person doesn't move,
28 #or moves very little for 10seconds, we can say they are drowning
29
30 #loop through frames
31 while webcam.isOpened():
32     # read frame from webcam
33     status, frame = webcam.read()
34
35
36
37     # apply object detection
38     bbox, label, conf = cv.detect_common_objects(frame)
39     #simplifying for only 1 person
40
```

The right-hand pane shows the file explorer with the following files:

- app.py
- detect.py
- drowning.mp4
- requirements.txt
- video.mp4
- 9789241511933-eng.pdf
- AI-Assignment-3 Convolution Neural Network.pdf
- Anaconda3-2021.11-Windows-x86_64.exe
- Anaconda3-2022.05-Windows-x86_64.exe
- Anaconda3-2022.10-Windows-x86_64.exe

The bottom pane shows the console output:

```
[481.0, 256.0]
Is he drowning: False
3.850123882253701 s
bbox: [[170, 111, 794, 399]] centre: [482.0, 255.0] centre0:
[482.0, 256.0]
Is he drowning: False
4.809416770935059 s
bbox: [[168, 110, 796, 400]] centre: [482.0, 255.0] centre0:
[482.0, 255.0]
Is he drowning: False
6.521981716156006 s
bbox: [[166, 110, 796, 400]] centre: [481.0, 255.0] centre0:
[482.0, 255.0]
Is he drowning: False
8.362830400466919 s
bbox: [[166, 110, 796, 400]] centre: [481.0, 255.0] centre0:
[481.0, 255.0]
Is he drowning: False
10.185845375061035 s
bbox: [[166, 110, 796, 400]] centre: [481.0, 255.0] centre0:
[481.0, 255.0]
Is he drowning: True
```

