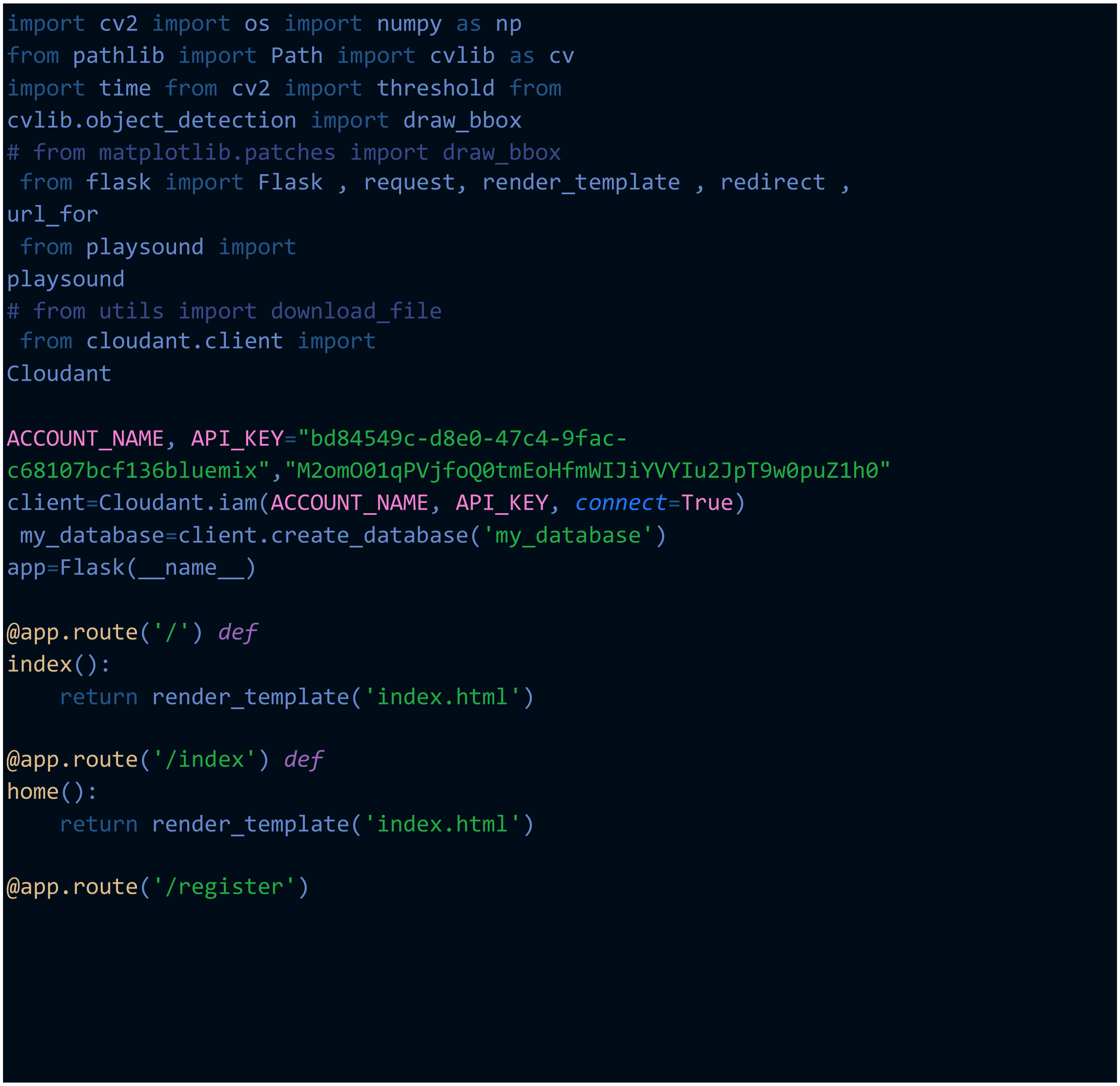
Project Development Phase

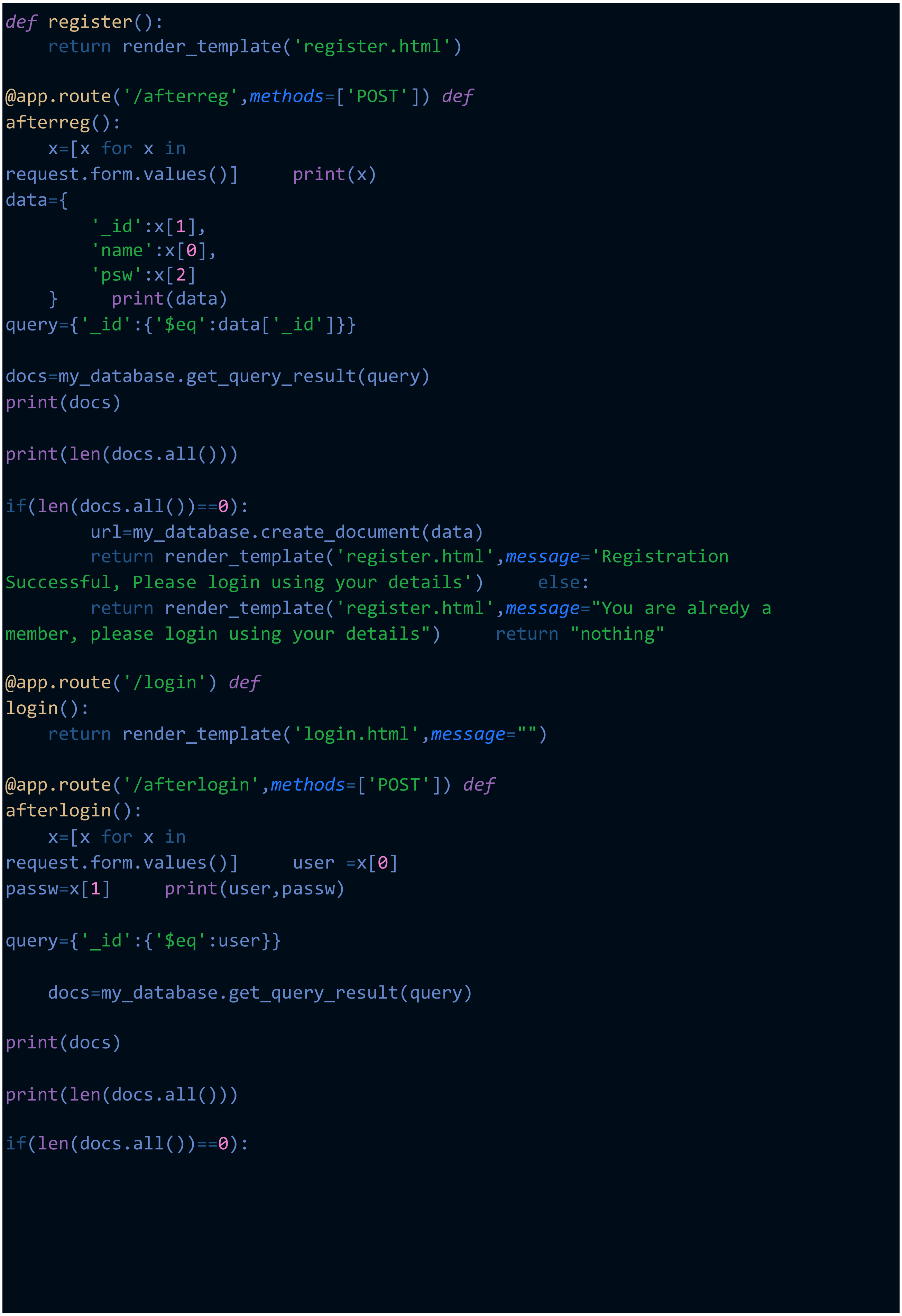
Sprint-3 Coding (Drowning Detection along with age prediction)

Team ID	PNT2022TMID40981
Project Name	VirtualEye - Life Guard For Swimming Pools To Detect Active Drowning
Maximum Marks	8 Marks

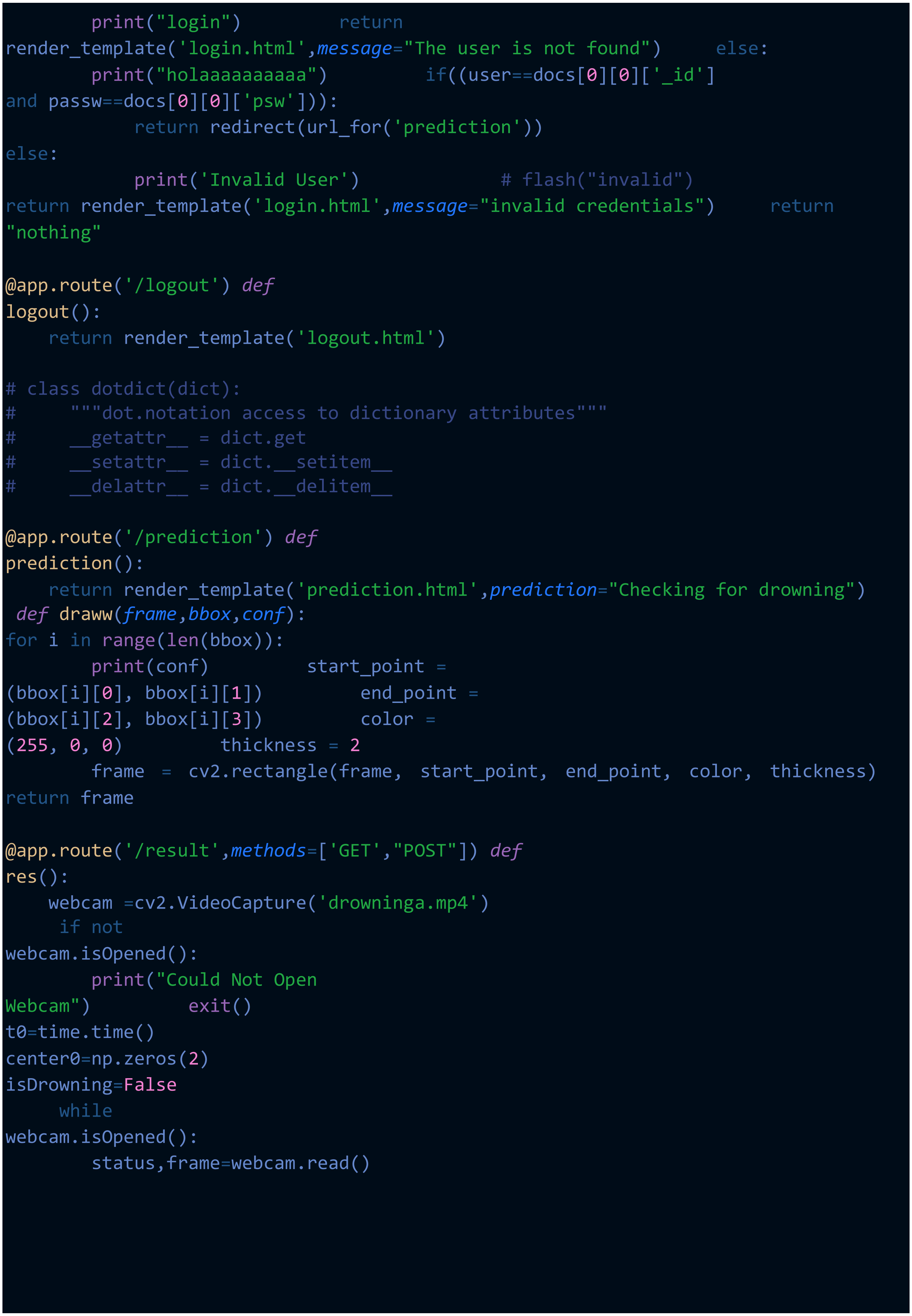
App.py



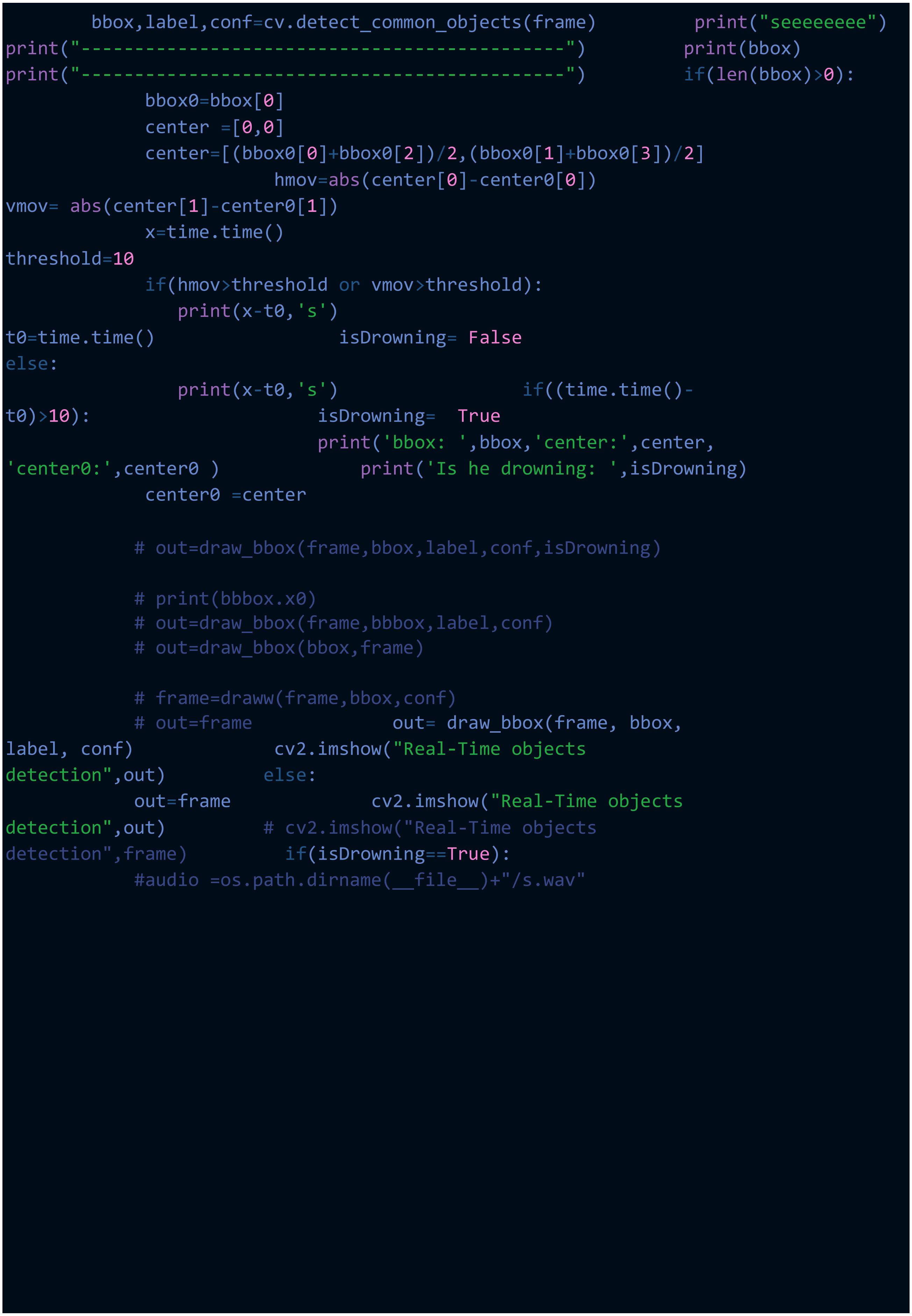
```
import cv2 import os import numpy as np
from pathlib import Path import cvlib as cv
import time from cv2 import threshold from
cvlib.object_detection import draw_bbox
# from matplotlib.patches import draw_bbox
 from flask import Flask , request, render_template , redirect ,
url_for
 from playsound import
playsound
# from utils import download_file
 from cloudant.client import
Cloudant

ACCOUNT_NAME, API_KEY="bd84549c-d8e0-47c4-9fac-
c68107bcf136bluemix","M2omO01qPVjfoQ0tmEoHfmWIJiYVYIu2JpT9w0puZ1h0"
client=Cloudant.iam(ACCOUNT_NAME, API_KEY, connect=True)
 my_database=client.create_database('my_database')
app=Flask(__name__)

@app.route('/') def
index():
    return render_template('index.html')

@app.route('/index') def
home():
    return render_template('index.html')

@app.route('/register')
```



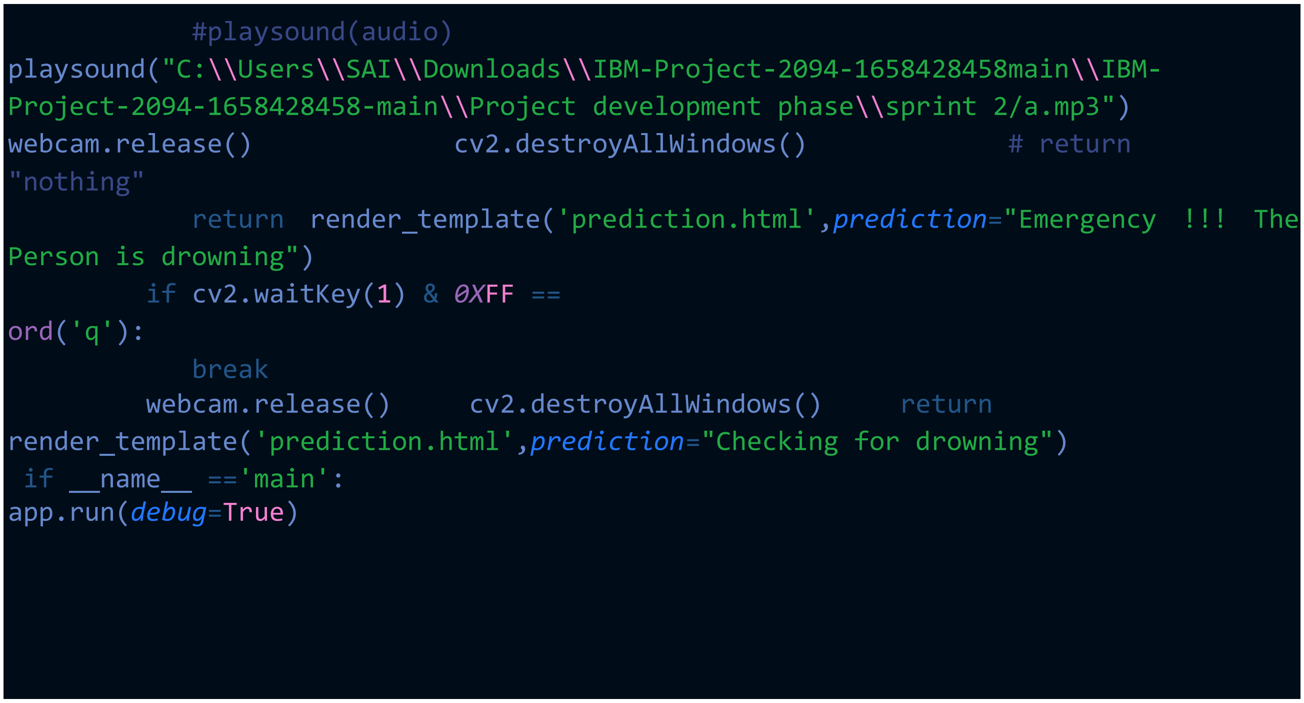
```
def register():
    return render_template('register.html')

@app.route('/afterreg',methods=['POST']) def
afterreg():
    x=[x for x in
request.form.values()]     print(x)
data={
        '_id':x[1],
        'name':x[0],
        'psw':x[2]
    }     print(data)
query={'_id':{'$eq':data['_id']}}

docs=my_database.get_query_result(query)
print(docs)

print(len(docs.all()))

if(len(docs.all())==0):
        url=my_database.create_document(data)
        return render_template('register.html',message='Registration
Successful, Please login using your details')     else:
        return render_template('register.html',message="You are alredy a
member, please login using your details")     return "nothing"

@app.route('/login') def
login():
    return render_template('login.html',message="")

@app.route('/afterlogin',methods=['POST']) def
afterlogin():
    x=[x for x in
request.form.values()]     user =x[0]
passw=x[1]     print(user,passw)

query={'_id':{'$eq':user}}

    docs=my_database.get_query_result(query)

print(docs)

print(len(docs.all()))

if(len(docs.all())==0):
```



```
        print("login")         return
render_template('login.html',message="The user is not found")      else:
        print("holaaaaaaaaaa")         if((user==docs[0][0]['_id']
and passw==docs[0][0]['psw'])):
            return redirect(url_for('prediction'))
else:
            print('Invalid User')              # flash("invalid")
return render_template('login.html',message="invalid credentials")     return
"nothing"

@app.route('/logout') def
logout():
    return render_template('logout.html')

# class dotdict(dict):
#     """dot.notation access to dictionary attributes"""
#     __getattr__ = dict.get
#     __setattr__ = dict.__setitem__
#     __delattr__ = dict.__delitem__

@app.route('/prediction') def
prediction():
    return render_template('prediction.html',prediction="Checking for drowning")
 def draww(frame,bbox,conf):
for i in range(len(bbox)):
        print(conf)         start_point =
(bbox[i][0], bbox[i][1])         end_point =
(bbox[i][2], bbox[i][3])         color =
(255, 0, 0)         thickness = 2
        frame  =  cv2.rectangle(frame,  start_point,  end_point,  color,  thickness)
return frame

@app.route('/result',methods=['GET',"POST"]) def
res():
    webcam =cv2.VideoCapture('drowninga.mp4')
     if not
webcam.isOpened():
        print("Could Not Open
Webcam")         exit()
t0=time.time()
center0=np.zeros(2)
isDrowning=False
     while
webcam.isOpened():
        status,frame=webcam.read()
```



```
        bbox,label,conf=cv.detect_common_objects(frame)         print("seeeeeeee")
print("---------------------------------------------")          print(bbox)
print("---------------------------------------------")          if(len(bbox)>0):
             bbox0=bbox[0]
             center =[0,0]
             center=[(bbox0[0]+bbox0[2])/2,(bbox0[1]+bbox0[3])/2]
                         hmov=abs(center[0]-center0[0])
vmov= abs(center[1]-center0[1])
             x=time.time()
threshold=10
             if(hmov>threshold or vmov>threshold):
                print(x-t0,'s')
t0=time.time()                  isDrowning= False
else:
                print(x-t0,'s')                  if((time.time()-
t0)>10):                      isDrowning=  True
                             print('bbox: ',bbox,'center:',center,
'center0:',center0 )             print('Is he drowning: ',isDrowning)
             center0 =center

            # out=draw_bbox(frame,bbox,label,conf,isDrowning)

            # print(bbbox.x0)
            # out=draw_bbox(frame,bbbox,label,conf)
            # out=draw_bbox(bbox,frame)

            # frame=draww(frame,bbox,conf)
            # out=frame             out= draw_bbox(frame, bbox,
label, conf)             cv2.imshow("Real-Time objects
detection",out)         else:
            out=frame             cv2.imshow("Real-Time objects
detection",out)         # cv2.imshow("Real-Time objects
detection",frame)         if(isDrowning==True):
            #audio =os.path.dirname(__file__)+"/s.wav"
```



```
            #playsound(audio)
playsound("C:\\Users\\SAI\\Downloads\\IBM-Project-2094-1658428458main\\IBM-
Project-2094-1658428458-main\\Project development phase\\sprint 2/a.mp3")
webcam.release()             cv2.destroyAllWindows()             # return
"nothing"
            return  render_template('prediction.html',prediction="Emergency  !!!  The
Person is drowning")
         if cv2.waitKey(1) & 0XFF ==
ord('q'):
            break
         webcam.release()     cv2.destroyAllWindows()     return
render_template('prediction.html',prediction="Checking for drowning")
 if __name__ =='main':
app.run(debug=True)
```