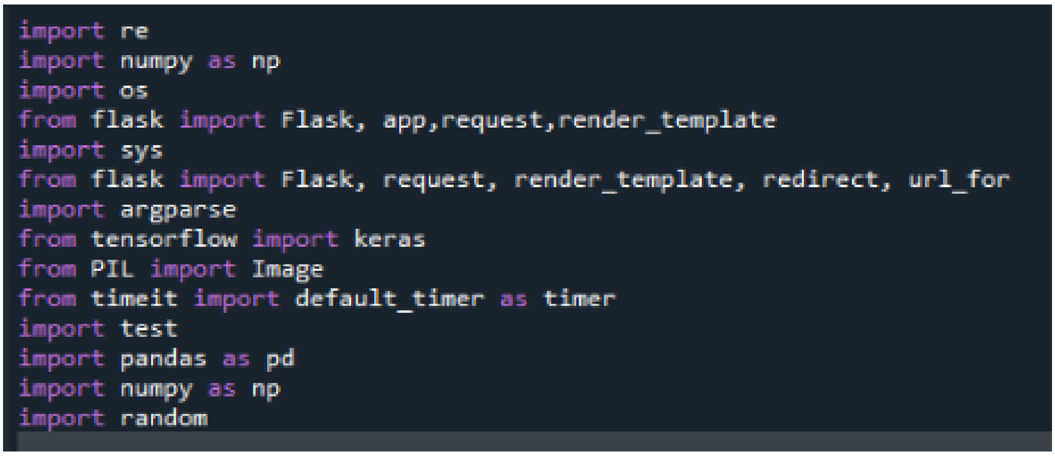
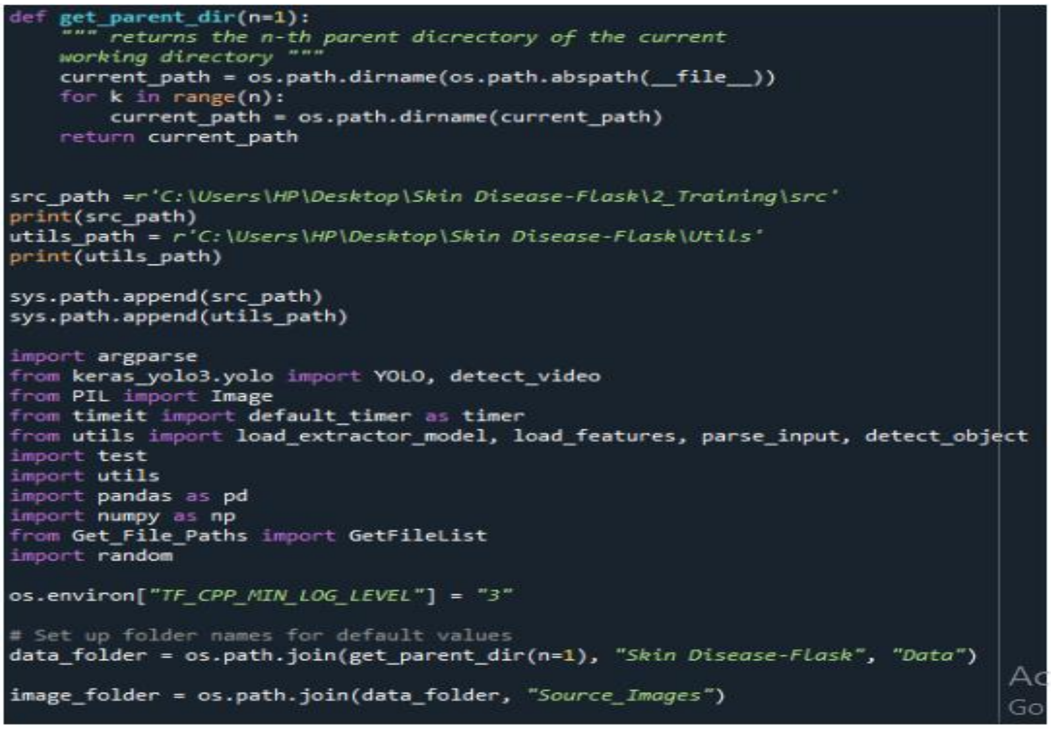
BUILDING A PYTHON CODE

Date	17 November 2022
Team ID	PNT2022TMID34120
Project Name	AI- Based Localization and classification of skin disease with Erythema

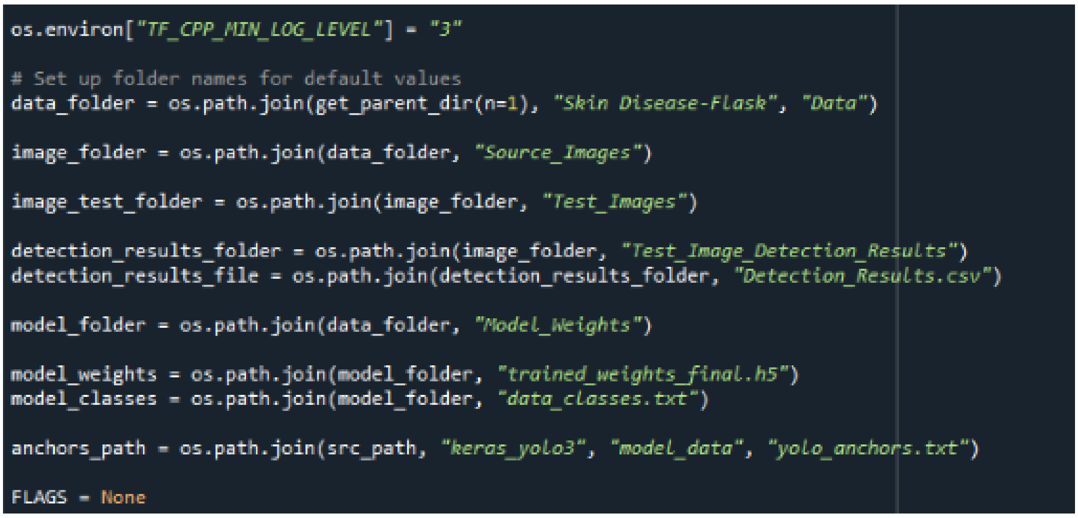
PYTHON CODE:



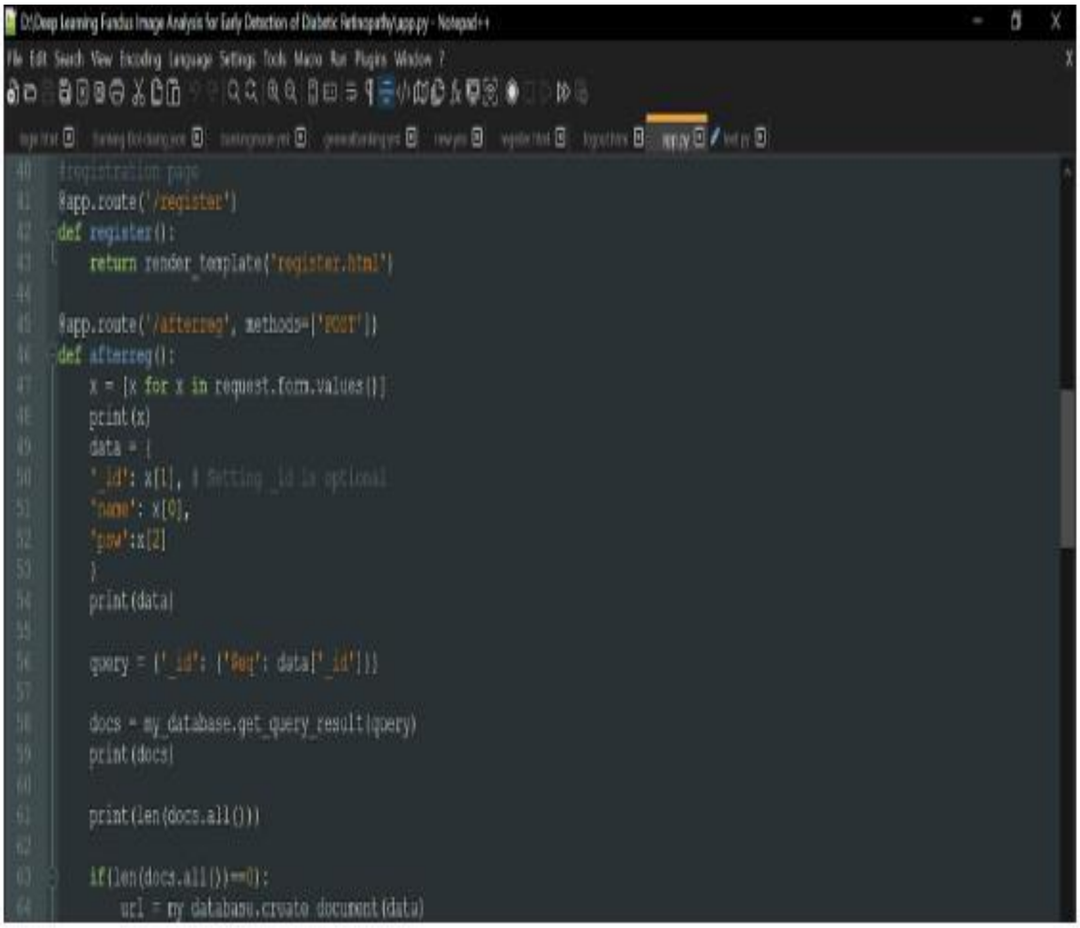
```python
import re
import numpy as np
import os
from flask import Flask, app,request,render_template
import sys
from flask import Flask, request, render_template, redirect, url_for
import argparse
from tensorflow import keras
from PIL import Image
from timeit import default_timer as timer
import test
import pandas as pd
import numpy as np
import random
```



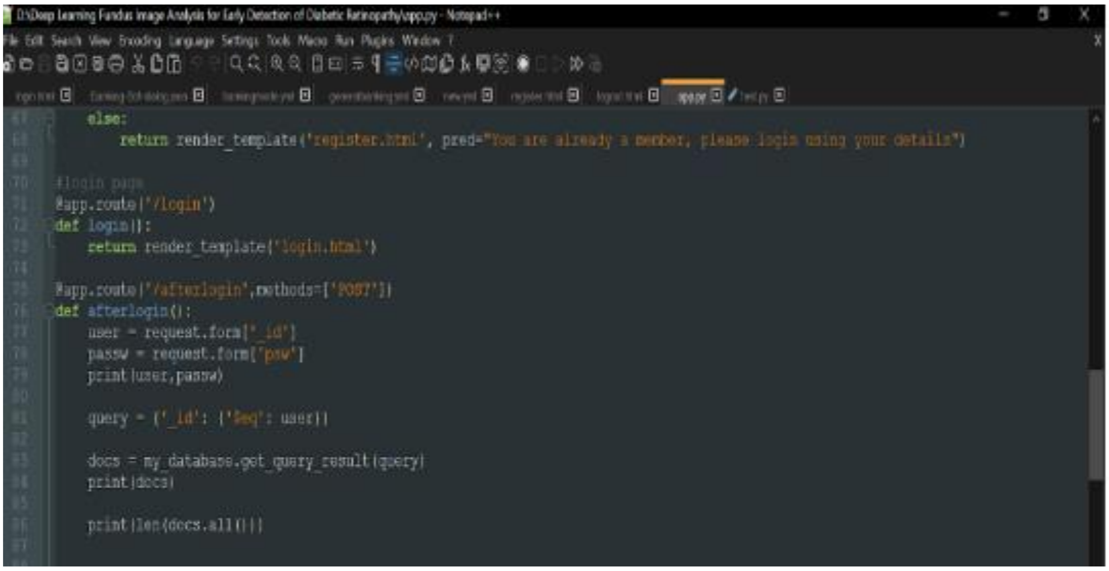
```python
def get_parent_dir(n=1):
    """ returns the n-th parent dicrectory of the current
    working directory """
    current_path = os.path.dirname(os.path.abspath(__file__))
    for k in range(n):
        current_path = os.path.dirname(current_path)
    return current_path


src_path =r'C:\Users\HP\Desktop\Skin Disease-Flask\2_Training\src'
print(src_path)
utils_path = r'C:\Users\HP\Desktop\Skin Disease-Flask\Utils'
print(utils_path)

sys.path.append(src_path)
sys.path.append(utils_path)

import argparse
from keras_yolo3.yolo import YOLO, detect_video
from PIL import Image
from timeit import default_timer as timer
from utils import load_extractor_model, load_features, parse_input, detect_object
import test
import utils
import pandas as pd
import numpy as np
from Get_File_Paths import GetFileList
import random

os.environ["TF_CPP_MIN_LOG_LEVEL"] = "3"

# Set up folder names for default values
data_folder = os.path.join(get_parent_dir(n=1), "Skin Disease-Flask", "Data")

image_folder = os.path.join(data_folder, "Source_Images")
```



```
os.environ["TF_CPP_MIN_LOG_LEVEL"] = "3"

# Set up folder names for default values
data_folder = os.path.join(get_parent_dir(n=1), "Skin Disease-Flask", "Data")

image_folder = os.path.join(data_folder, "Source_Images")

image_test_folder = os.path.join(image_folder, "Test_Images")

detection_results_folder = os.path.join(image_folder, "Test_Image_Detection_Results")
detection_results_file = os.path.join(detection_results_folder, "Detection_Results.csv")

model_folder = os.path.join(data_folder, "Model_Weights")

model_weights = os.path.join(model_folder, "trained_weights_final.h5")
model_classes = os.path.join(model_folder, "data_classes.txt")

anchors_path = os.path.join(src_path, "keras_yolo3", "model_data", "yolo_anchors.txt")

FLAGS = None
```


D:\Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy\app.py - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
app.py

```
#registration page
@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], # Setting _id is optional
    '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)
```



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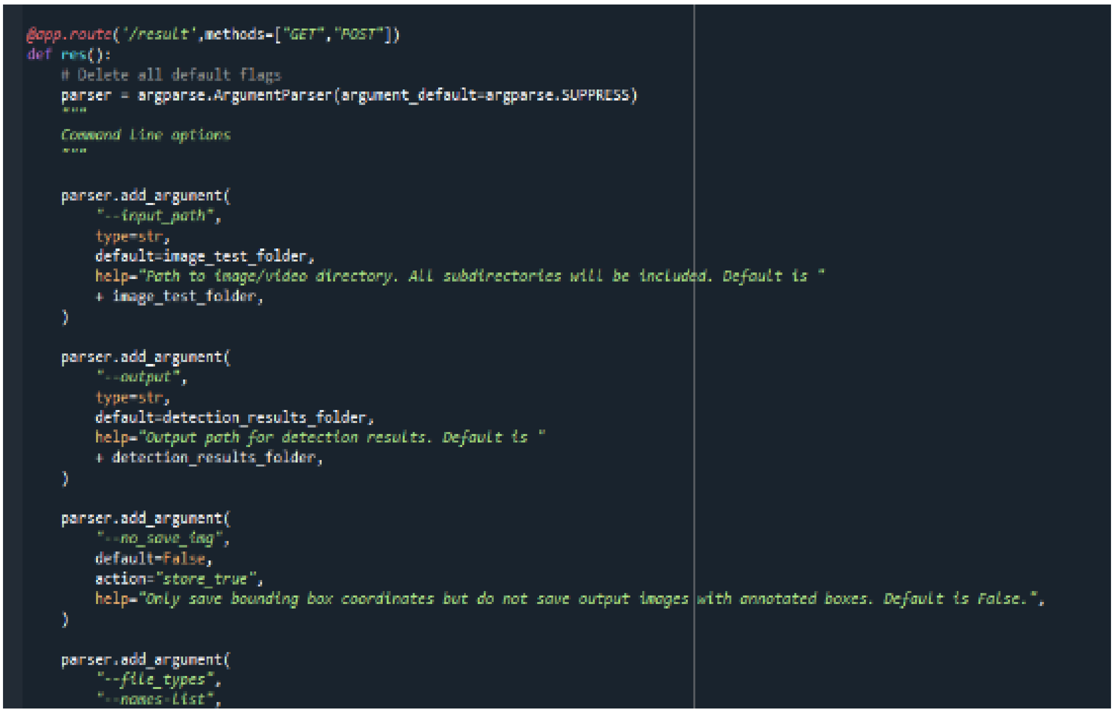
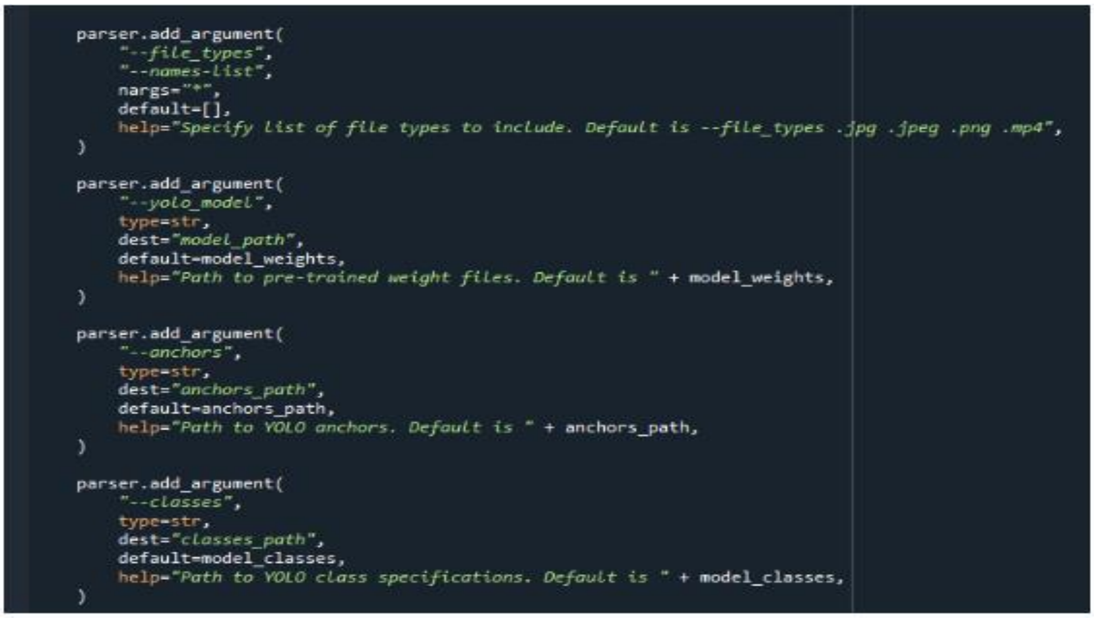
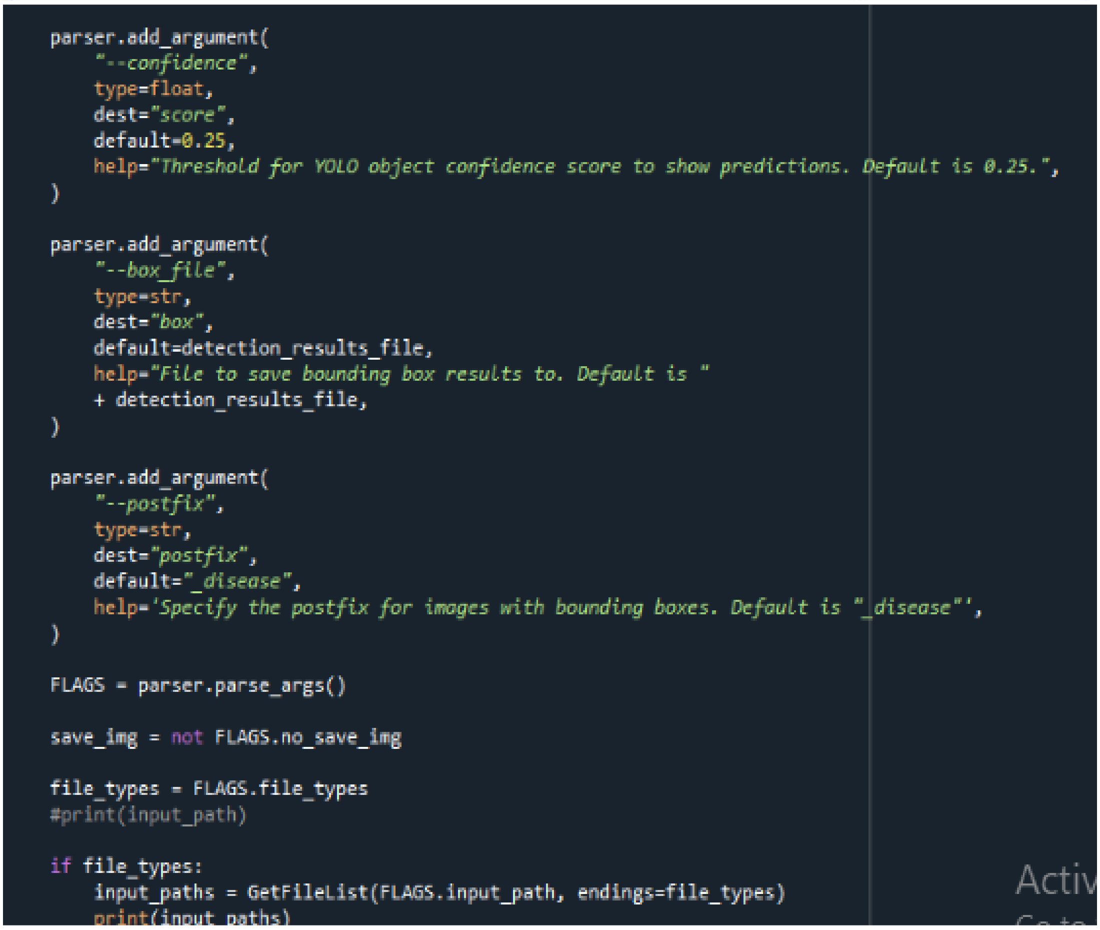
```
    else:
        return render_template('register.html', pred="You are already a member, please login using your details")

#login page
@app.route('/login')
def login():
    return render_template('login.html')

@app.route('/afterlogin',methods=['POST'])
def afterlogin():
    user = request.form['_id']
    passw = request.form['psw']
    print(user,passw)

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

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

    print(len(docs.all()))
```



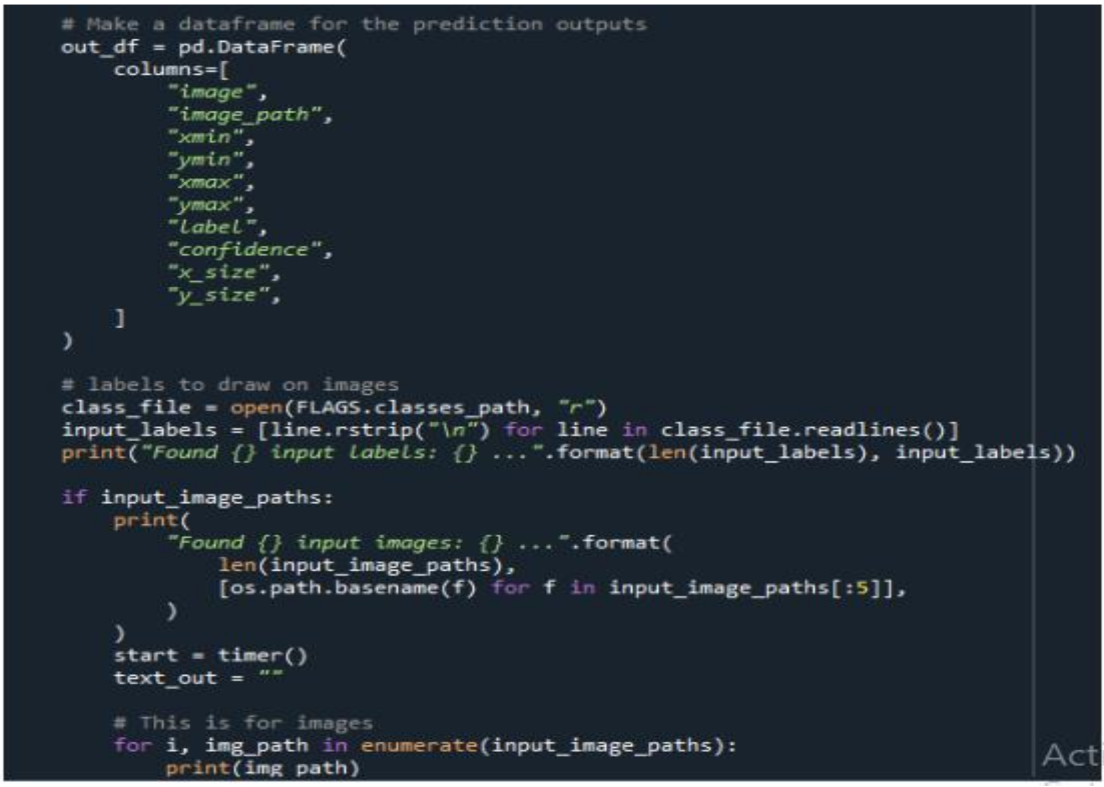
```
@app.route('/result',methods=["GET","POST"])
def res():
    # Delete all default flags
    parser = argparse.ArgumentParser(argument_default=argparse.SUPPRESS)
    """
    Command line options
    """

    parser.add_argument(
        "--input_path",
        type=str,
        default=image_test_folder,
        help="Path to image/video directory. All subdirectories will be included. Default is "
        + image_test_folder,
    )

    parser.add_argument(
        "--output",
        type=str,
        default=detection_results_folder,
        help="Output path for detection results. Default is "
        + detection_results_folder,
    )

    parser.add_argument(
        "--no_save_img",
        default=False,
        action="store_true",
        help="Only save bounding box coordinates but do not save output images with annotated boxes. Default is False.",
    )

    parser.add_argument(
        "--file_types",
        "--names-list",
```



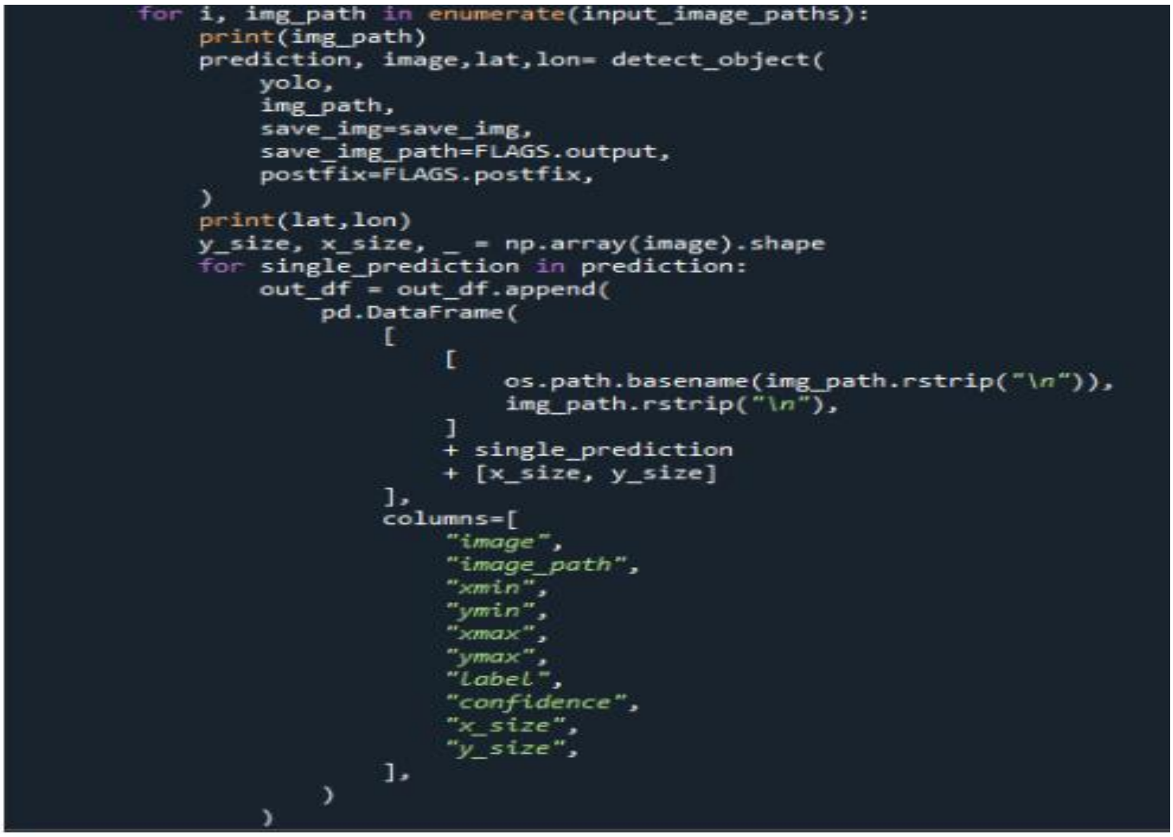
```
    parser.add_argument(
        "--file_types",
        "--names-list",
        nargs="*",
        default=[],
        help="Specify list of file types to include. Default is --file_types .jpg .jpeg .png .mp4",
    )

    parser.add_argument(
        "--yolo_model",
        type=str,
        dest="model_path",
        default=model_weights,
        help="Path to pre-trained weight files. Default is " + model_weights,
    )

    parser.add_argument(
        "--anchors",
        type=str,
        dest="anchors_path",
        default=anchors_path,
        help="Path to YOLO anchors. Default is " + anchors_path,
    )

    parser.add_argument(
        "--classes",
        type=str,
        dest="classes_path",
        default=model_classes,
        help="Path to YOLO class specifications. Default is " + model_classes,
    )
```



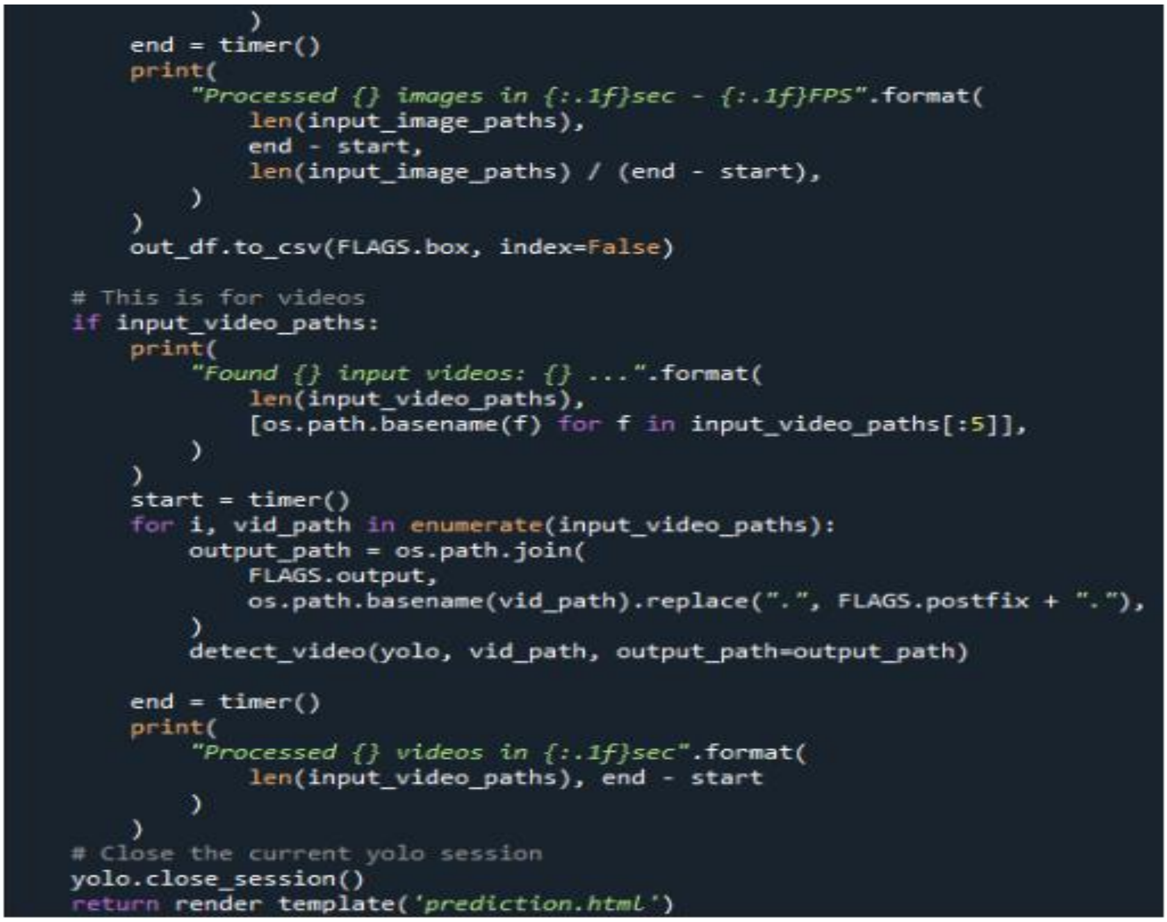
```
    parser.add_argument(
        "--confidence",
        type=float,
        dest="score",
        default=0.25,
        help="Threshold for YOLO object confidence score to show predictions. Default is 0.25.",
    )

    parser.add_argument(
        "--box_file",
        type=str,
        dest="box",
        default=detection_results_file,
        help="File to save bounding box results to. Default is "
        + detection_results_file,
    )

    parser.add_argument(
        "--postfix",
        type=str,
        dest="postfix",
        default="_disease",
        help='Specify the postfix for images with bounding boxes. Default is "_disease"',
    )

    FLAGS = parser.parse_args()

    save_img = not FLAGS.no_save_img

    file_types = FLAGS.file_types
    #print(input_path)

    if file_types:
        input_paths = GetFileList(FLAGS.input_path, endings=file_types)
        print(input_paths)
```



```
# Make a dataframe for the prediction outputs
out_df = pd.DataFrame(
    columns=[
        "image",
        "image_path",
        "xmin",
        "ymin",
        "xmax",
        "ymax",
        "label",
        "confidence",
        "x_size",
        "y_size",
    ]
)

# labels to draw on images
class_file = open(FLAGS.classes_path, "r")
input_labels = [line.rstrip("\n") for line in class_file.readlines()]
print("Found {} input labels: {} ...".format(len(input_labels), input_labels))

if input_image_paths:
    print(
        "Found {} input images: {} ...".format(
            len(input_image_paths),
            [os.path.basename(f) for f in input_image_paths[:5]],
        )
    )
    start = timer()
    text_out = ""

    # This is for images
    for i, img_path in enumerate(input_image_paths):
        print(img_path)
```



```
    for i, img_path in enumerate(input_image_paths):
        print(img_path)
        prediction, image,lat,lon= detect_object(
            yolo,
            img_path,
            save_img=save_img,
            save_img_path=FLAGS.output,
            postfix=FLAGS.postfix,
        )
        print(lat,lon)
        y_size, x_size, _ = np.array(image).shape
        for single_prediction in prediction:
            out_df = out_df.append(
                pd.DataFrame(
                    [
                        [
                            os.path.basename(img_path.rstrip("\n")),
                            img_path.rstrip("\n"),
                        ]
                        + single_prediction
                        + [x_size, y_size]
                    ],
                    columns=[
                        "image",
                        "image_path",
                        "xmin",
                        "ymin",
                        "xmax",
                        "ymax",
                        "label",
                        "confidence",
                        "x_size",
                        "y_size",
                    ],
                )
            )
```



```
                )
        end = timer()
        print(
            “Processed {} images in {:.1f}sec - {:.1f}FPS”.format(
                len(input_image_paths),
                end - start,
                len(input_image_paths) / (end - start),
            )
        )
        out_df.to_csv(FLAGS.box, index=False)

    # This is for videos
    if input_video_paths:
        print(
            “Found {} input videos: {} ...”.format(
                len(input_video_paths),
                [os.path.basename(f) for f in input_video_paths[:5]],
            )
        )
        start = timer()
        for i, vid_path in enumerate(input_video_paths):
            output_path = os.path.join(
                FLAGS.output,
                os.path.basename(vid_path).replace(“.”, FLAGS.postfix + “.”),
            )
            detect_video(yolo, vid_path, output_path=output_path)

        end = timer()
        print(
            “Processed {} videos in {:.1f}sec”.format(
                len(input_video_paths), end - start
            )
        )
    # Close the current yolo session
    yolo.close_session()
    return render template('prediction.html')
```