PROJECT DEVELOPMENT PHASE

SPRINT 4

CODING & SOLUTION :

```
# -*- coding: utf-8 -*-
"""Untitled0.ipynb

Automatically generated by Colaboratory.

Original file is located at
    https://colab.research.google.com/drive/1PYFZ7zKhWpFF5YilnguhZ8X1EgtSIJN4
"""

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
```

```
from pyngrok import ngrok
import pandas as pd
import numpy as np
import random

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'/content/drive/MyDrive/IBM_PROJECT/yolo_structure/2_Training/src'
print(src_path)
utils_path=r'/content/drive/MyDrive/IBM_PROJECT/yolo_structure/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), "yolo_structure", "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



from cloudant.client import Cloudant

# Authenticate using an IAM API key

client =
Cloudant.iam('ef7f4729-2486-45c5-a7fa-f4140373e2e6-bluemix','6GfFjs3engXLnSJB8Kp4f
bs7HTKwrJpWJE7wNPGzZPVW', connect=True)



# Create a database using an initialized client

my_database = client.create_database('my_database')



app=Flask(__name__)

port_no=5000

ngrok.set_auth_token("2H7aM94zEuTa40t3J6jKpIqWAc3_B2UxzZs6qxetntgadxQW")

public_url =     ngrok.connect(port_no).public_url

print(f"To acces the Gloable link please click {public_url}")

#default home page or route
```

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



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



#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)
        #response = requests.get(url)
        return render_template('register.html', pred="Registration Successful, please login using your details")
    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()))

        if(len(docs.all())==0):
            return render_template('login.html', pred="The username is not found.")
        else:
            if((user==docs[0][0]['_id'] and passw==docs[0][0]['psw'])):
                return redirect(url_for('prediction'))
            else:
                print('Invalid User')



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

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

```
def prediction():
    return render_template('prediction.html',path="../static/img/6623.jpg",)



@app.route('/result',methods=["GET","POST"])
def res():
    # Delete all default flags
    parser = argparse.ArgumentParser(argument_default=argparse.SUPPRESS)
    """
    Command line options
    """
    f = request.files['file']
    f.save("./drive/MyDrive/IBM_PROJECT/Flask/static/img/"+f.filename)




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

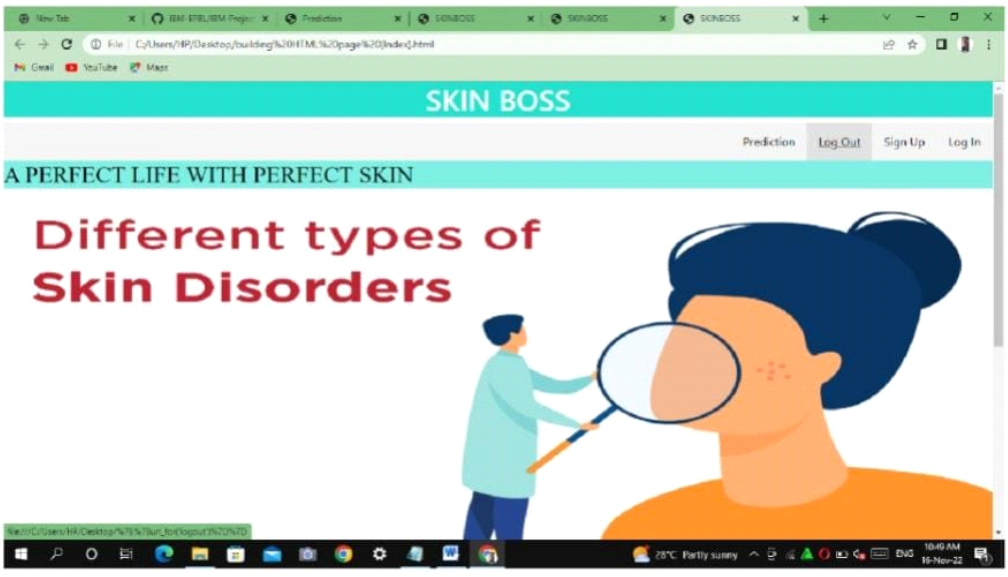
```
parser.add_argument(
        "--yolo_model",
        type=str,
        dest="model_path",
        default=model_weights,
        help="Path to pre-trained weight files. Default is " + model_weights,
)

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,
)
```

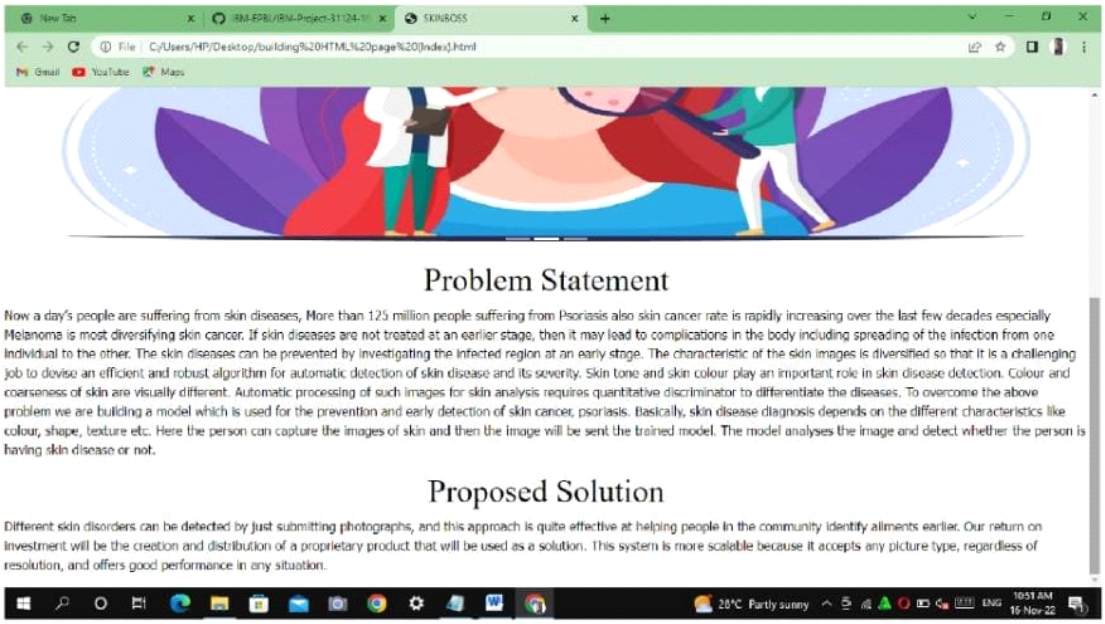
```
    parser.add_argument(
        "--gpu_num", type=int, default=1, help="Number of GPU to use. Default is 1"
    )

    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,
```

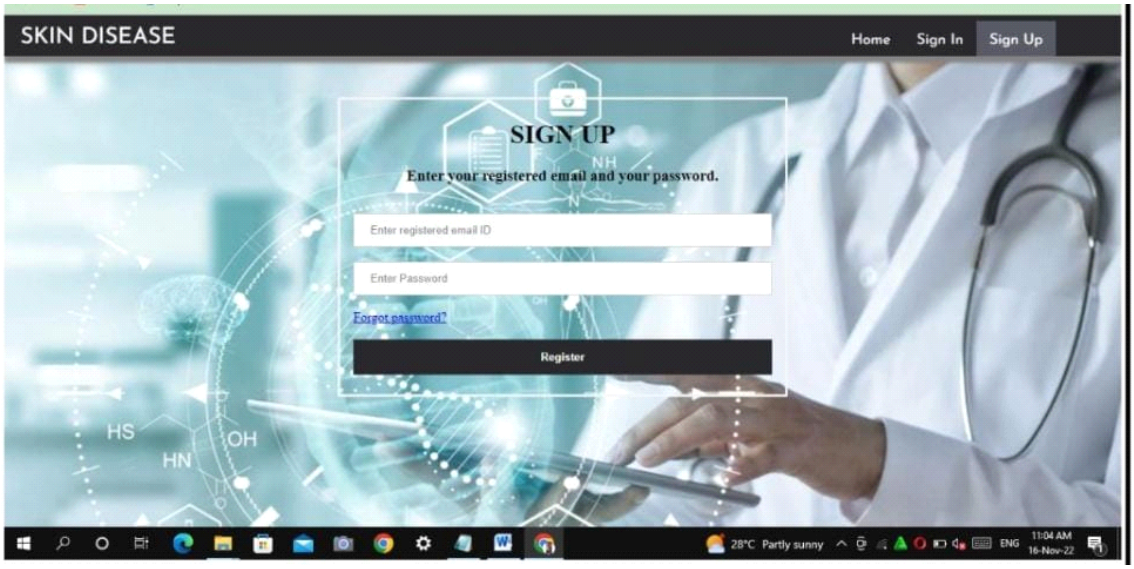
```
    dest="postfix",
    default="_disease",
    help='Specify the postfix for images with bounding boxes. Default is "_disease"',
)




yolo = YOLO(
    **{
        "model_path": FLAGS.model_path,
        "anchors_path": FLAGS.anchors_path,
        "classes_path": FLAGS.classes_path,
        "score": FLAGS.score,
        "gpu_num": FLAGS.gpu_num,
        "model_image_size": (416, 416),
    }
)



img_path="/drive/MyDrive/IBM_PROJECT/Flask/static/img/"+f.filename
prediction, image,lat,lon= detect_object(
        yolo,
        img_path,
        save_img=save_img,
```

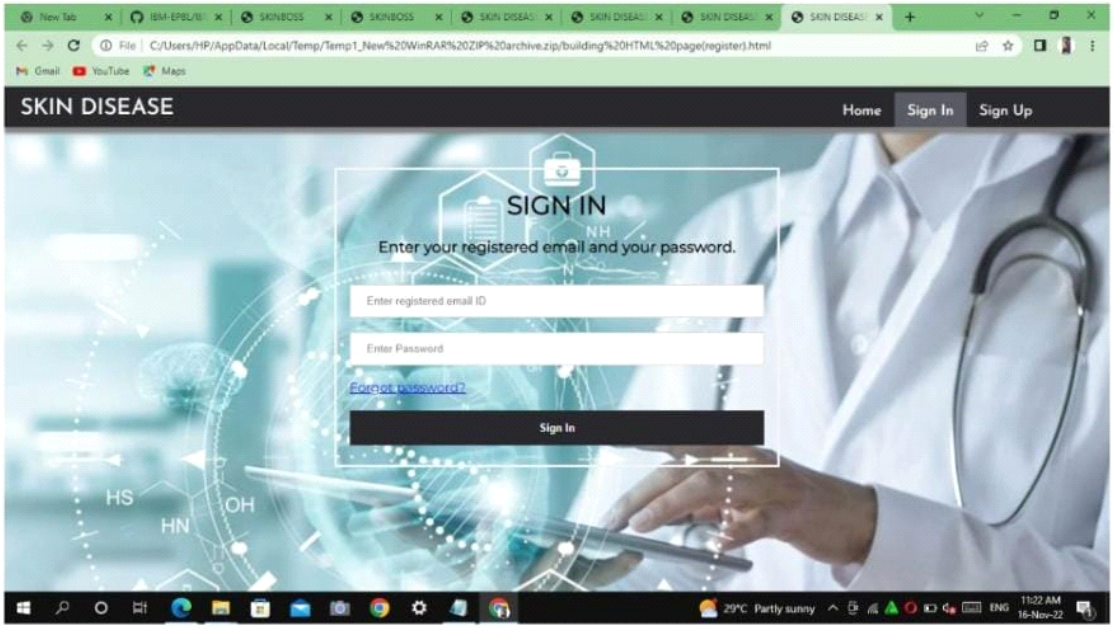
```
            save_img_path=FLAGS.output,
            postfix=FLAGS.postfix,
        )

        yolo.close_session()
        return render_template('prediction.html',prediction=str(prediction),path="../static/img/"+f.filename)


""" Running our application """
if __name__ == "__main__":
        app.run(port=port_no)
```

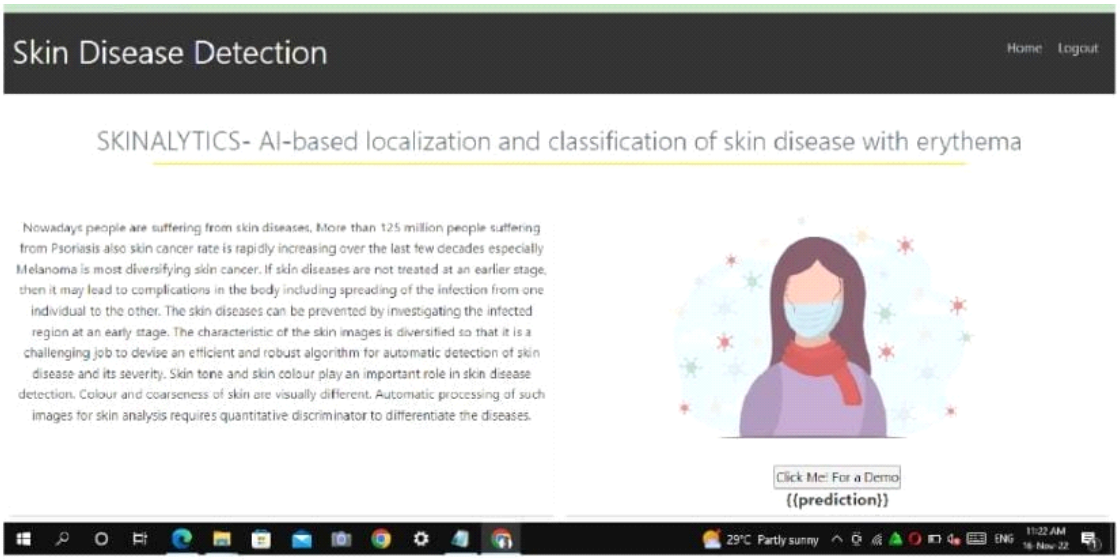
RUN THE APPLICATION :

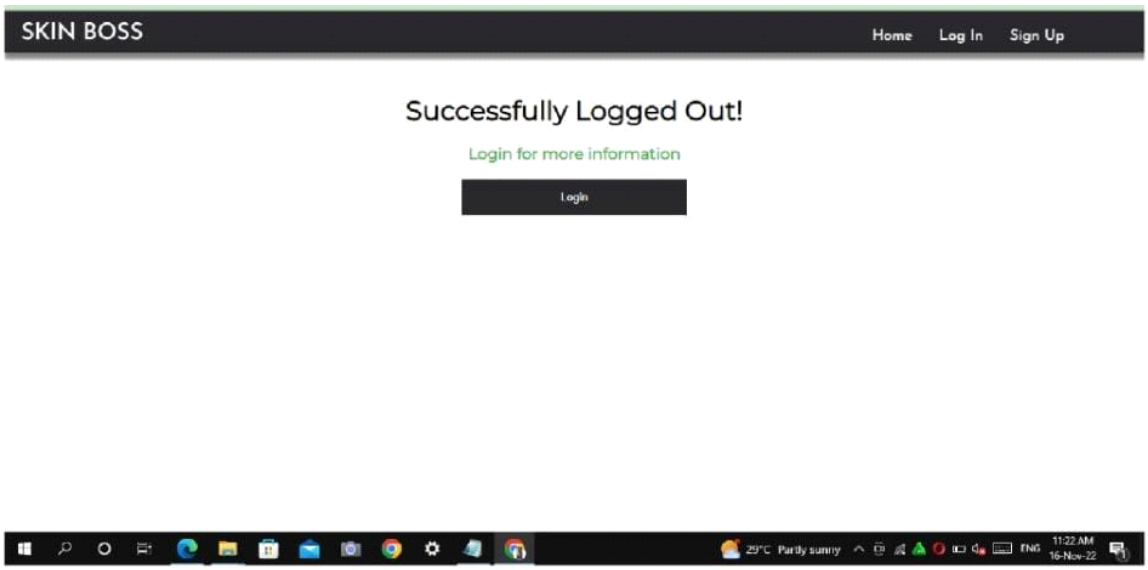



New Tab
SKINBOSS
File | C:/Users/HP/Desktop/building%20HTML%20page%20(Index).html
Gmail
YouTube
Maps
Problem Statement
Now a day's people are suffering from skin diseases, More than 125 million people suffering from Psoriasis also skin cancer rate is rapidly increasing over the last few decades especially Melanoma is most diversifying skin cancer. If skin diseases are not treated at an earlier stage, then it may lead to complications in the body including spreading of the infection from one individual to the other. The skin diseases can be prevented by investigating the infected region at an early stage. The characteristic of the skin images is diversified so that it is a challenging job to devise an efficient and robust algorithm for automatic detection of skin disease and its severity. Skin tone and skin colour play an important role in skin disease detection. Colour and coarseness of skin are visually different. Automatic processing of such images for skin analysis requires quantitative discriminator to differentiate the diseases. To overcome the above problem we are building a model which is used for the prevention and early detection of skin cancer, psoriasis. Basically, skin disease diagnosis depends on the different characteristics like colour, shape, texture etc. Here the person can capture the images of skin and then the image will be sent the trained model. The model analyses the image and detect whether the person is having skin disease or not.
Proposed Solution
Different skin disorders can be detected by just submitting photographs, and this approach is quite effective at helping people in the community identify ailments earlier. Our return on investment will be the creation and distribution of a proprietary product that will be used as a solution. This system is more scalable because it accepts any picture type, regardless of resolution, and offers good performance in any situation.
28°C Partly sunny
ENG
10:51 AM
16-Nov-22


SKIN DISEASE
Home
Sign In
Sign Up
SIGN UP
Enter your registered email and your password.
Enter registered email ID
Enter Password
Forgot password?
Register
HS
HN
OH
28°C Partly sunny
ENG
11:04 AM
16-Nov-22


SKIN DISEASE
Home
Sign In
Sign Up
SIGN IN
Enter your registered email and your password.
Enter registered email ID
Enter Password
Forgot password?
Sign In


Skin Disease Detection
Home
Logout
SKINALYTICS- AI-based localization and classification of skin disease with erythema
Nowadays people are suffering from skin diseases. More than 125 million people suffering from Psoriasis also skin cancer rate is rapidly increasing over the last few decades especially Melanoma is most diversifying skin cancer. If skin diseases are not treated at an earlier stage, then it may lead to complications in the body including spreading of the infection from one individual to the other. The skin diseases can be prevented by investigating the infected region at an early stage. The characteristic of the skin images is diversified so that it is a challenging job to devise an efficient and robust algorithm for automatic detection of skin disease and its severity. Skin tone and skin colour play an important role in skin disease detection. Colour and coarseness of skin are visually different. Automatic processing of such images for skin analysis requires quantitative discriminator to differentiate the diseases.
Click Me! For a Demo
{{prediction}}



GITHUB LINK :

https://github.com/IBM-EPBL/IBM-Project-31124-1660196395