ROCKS IDENTIFICATION

1 INTRODUCTION

1.1 Overview

This document provides detailed explanation of rocks identification using Deep Convolution Neural Network like the steps involved in developing theapplication,purpose of developing it and problems to be overcome through the this rock identification, desigining of the code to be used and finally application of this web application.

1.2 Purpose

There are so many people who don't know the types of the rocks.People who are having the experience they will identify the type of the rock easily.To make people understand which rock it is we are develeping an application to identify rocks by using deep convolution neural networks.

2 LITURATURE SURVEY

2.1 Existing Problem

Rocks are fundamental component of earth.The automatic identification of rock type in the field would aid geological surveying ,education and automatic mapping.It is a basic part of geological serveying and research,and mineral resourses exploration.Working conditions in the field generally limit identifications to visual methods,including using a magnifying glass for fine-grained rocks.Visual inspection assesses properties such as colour,composition,grain size,and structure.This attributes of rocks reflects their mineral and chemical compositions,formation environment and genisis.The colour of the rock reflects its chemical composition.But these analysis is time taken process to identify the rocks and also those who are new to the field they can not do all these process.

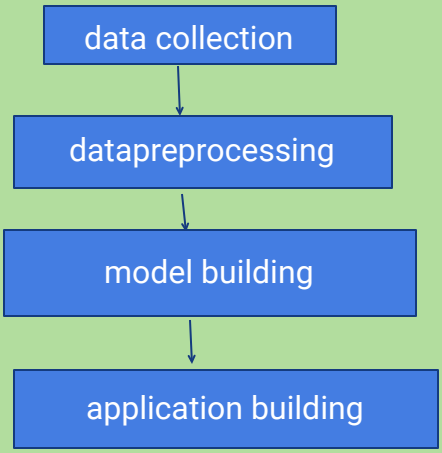
2.2 Proposed solution

Deep learning is receiving significant attension for pattern recognition and machine learning.Its application here has effectively rock types from images captured in the field.This paper proposes an accurate approach for identifying rock types in the field based on image analysis using deep convolution neural networks.

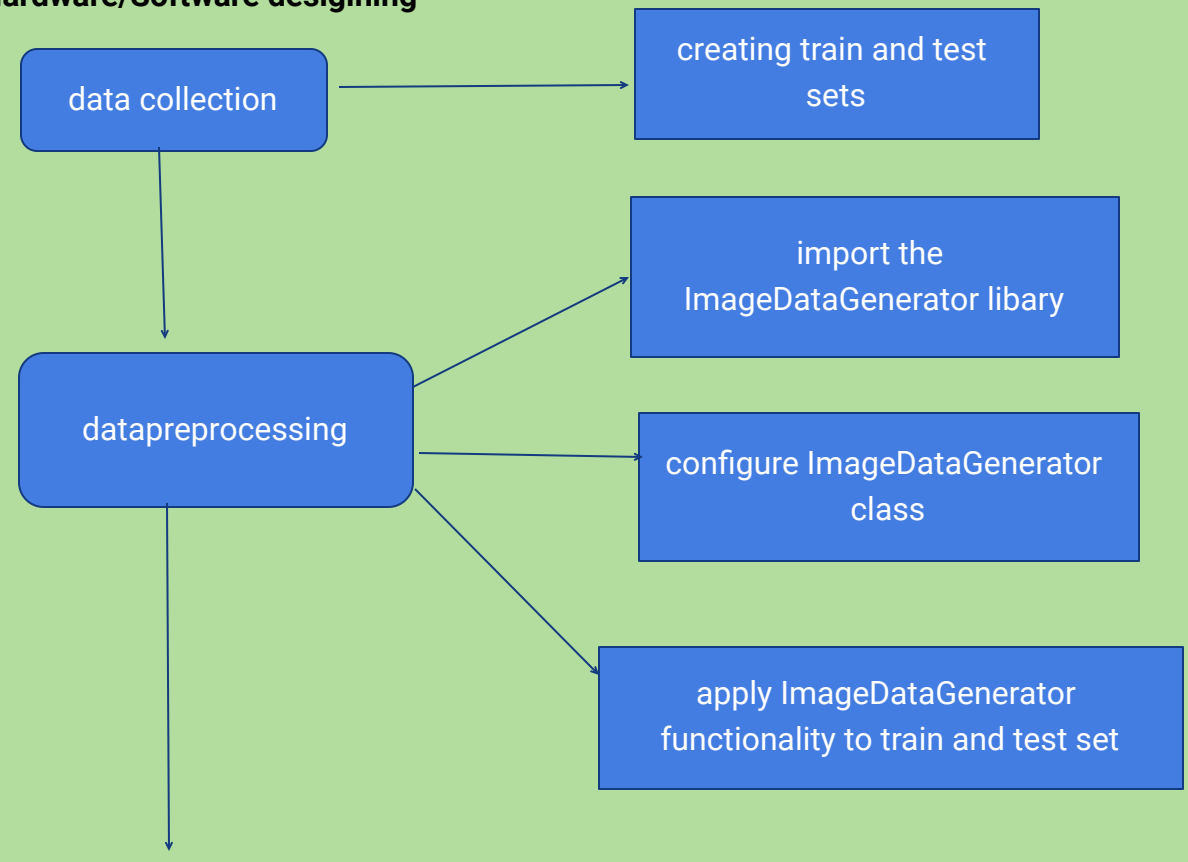
3 THEORITICAL ANALYSIS

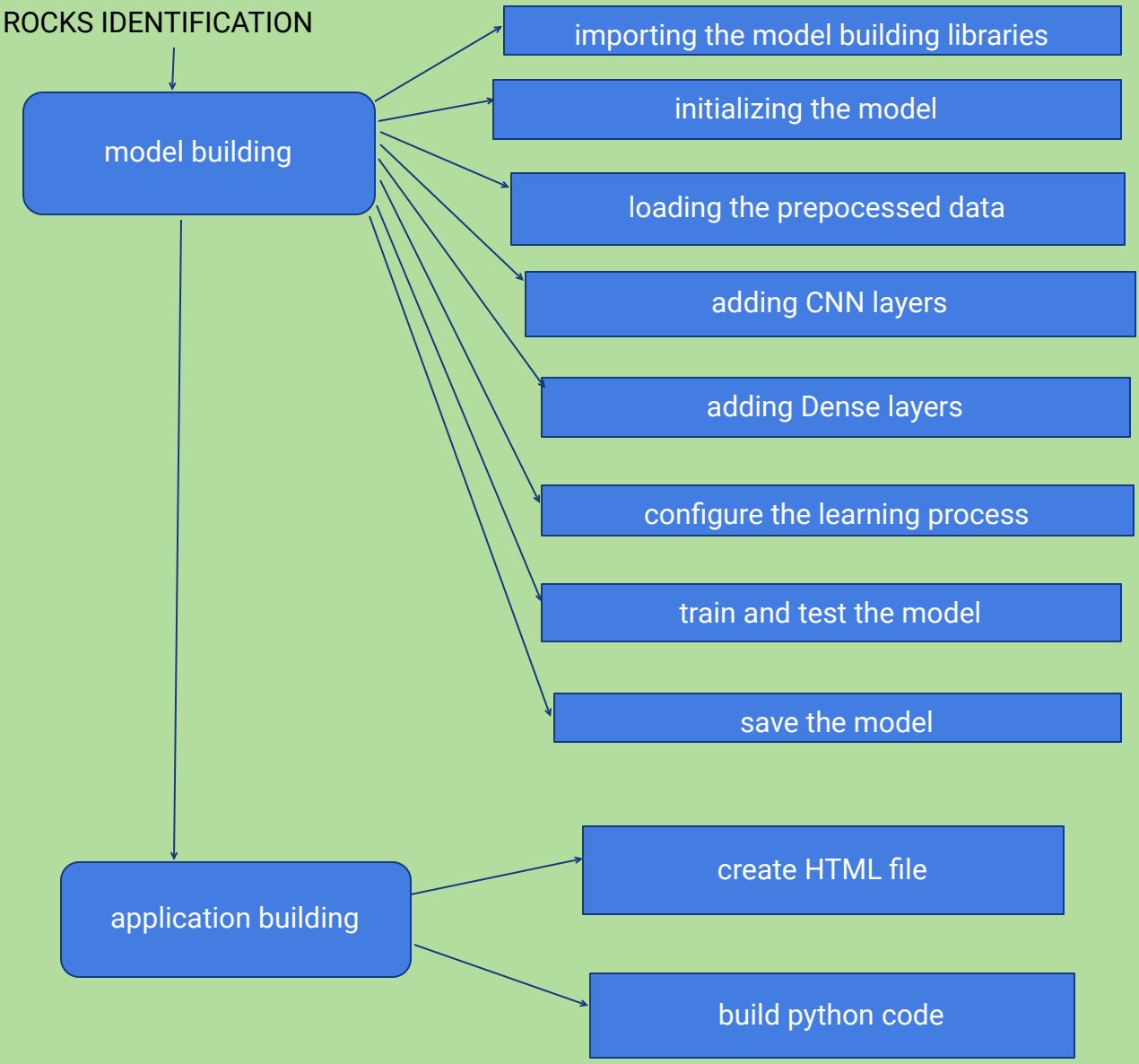
3.1 Block diagram

Rock Identification Using Deep Convolution Neural Network:



3.2 Hardware/Software desigining





4 EXPERIMENTAL INVESTIGATIONS

I have observed the conversion of image into pixels by layers .Pixels will be the input to ANN(input layer,hidden layer,output layer).Output will be detected by the process.Building the webapplication.These are some experimental investigations I have observed.

5 FLOWCHART

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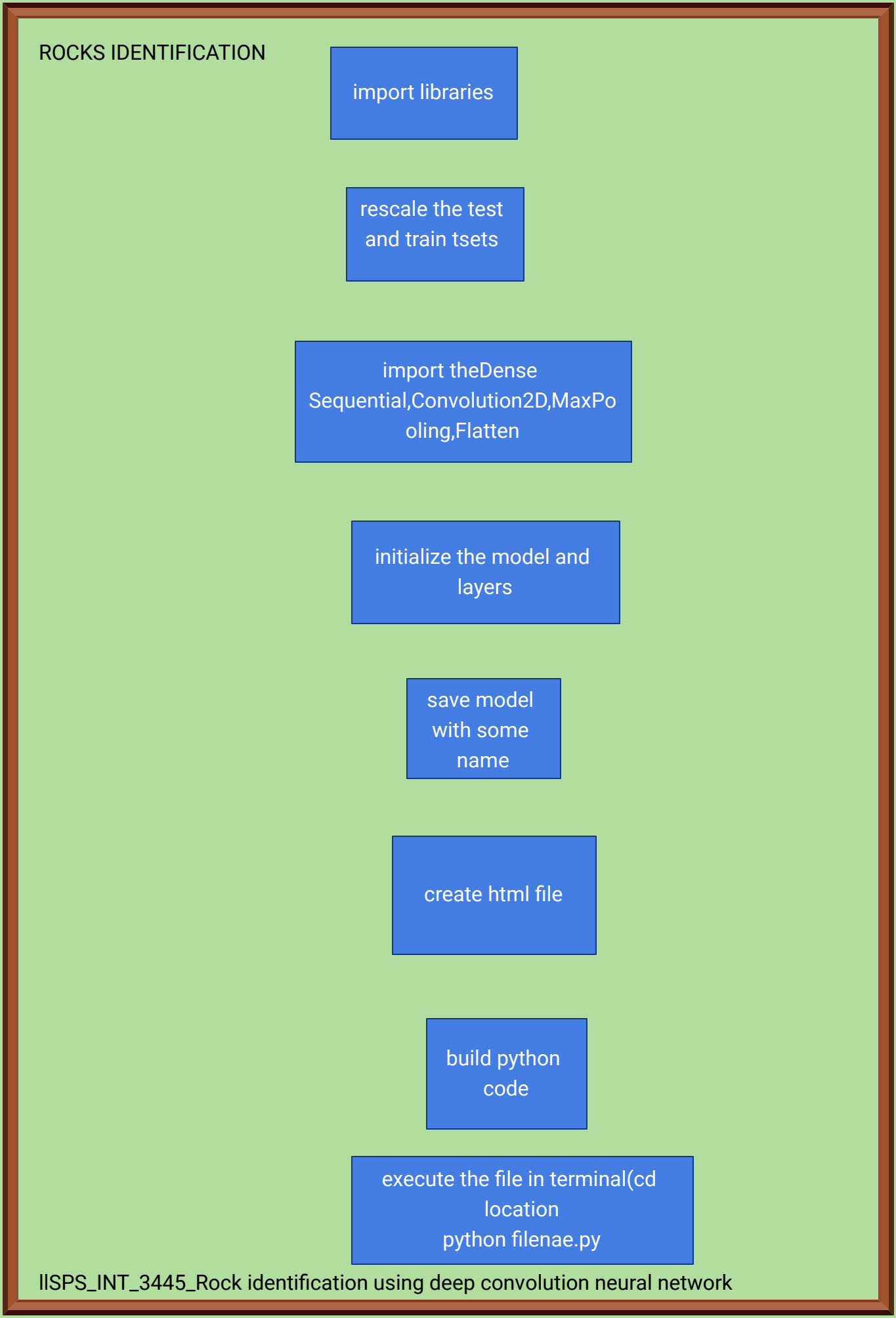

llSPS_INT_3445_Rock identification using deep convolution neural network

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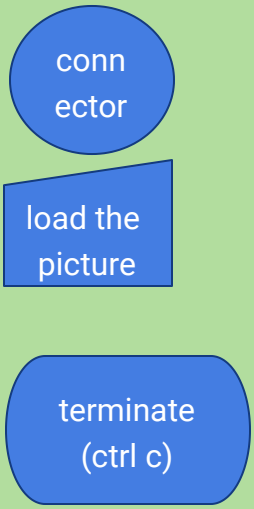


6 RESULT

Name of the rock will predicted.

7 ADVANTAGES AND DISADVANTAGES

ADVANTAGES

- Those who are new to geology field the can easily recognize the type of the rock.
- No need of doing analysis of rocks based on it's colour and attributes.

DISADVANTAGES

* If uploded image is not related to that then also it will give some output belonging to category of our application developed.

8 APPLICATIONS

* This application will be used by the geologists and constructors of houses.
* This will be useful for sellers of stones to identify the cost and importance of the stone.

9 CONCLUSION

We have seen the details of rocks identification and their implemention by using the software designing.We can use this for identifying animals ,humanbeings(male or female),flowers etc by just changing the dataset.Thankyou for reading my document.

10 FUTURESCOPE

In future we may be having more classes to be identified .Giving more information related to that image.

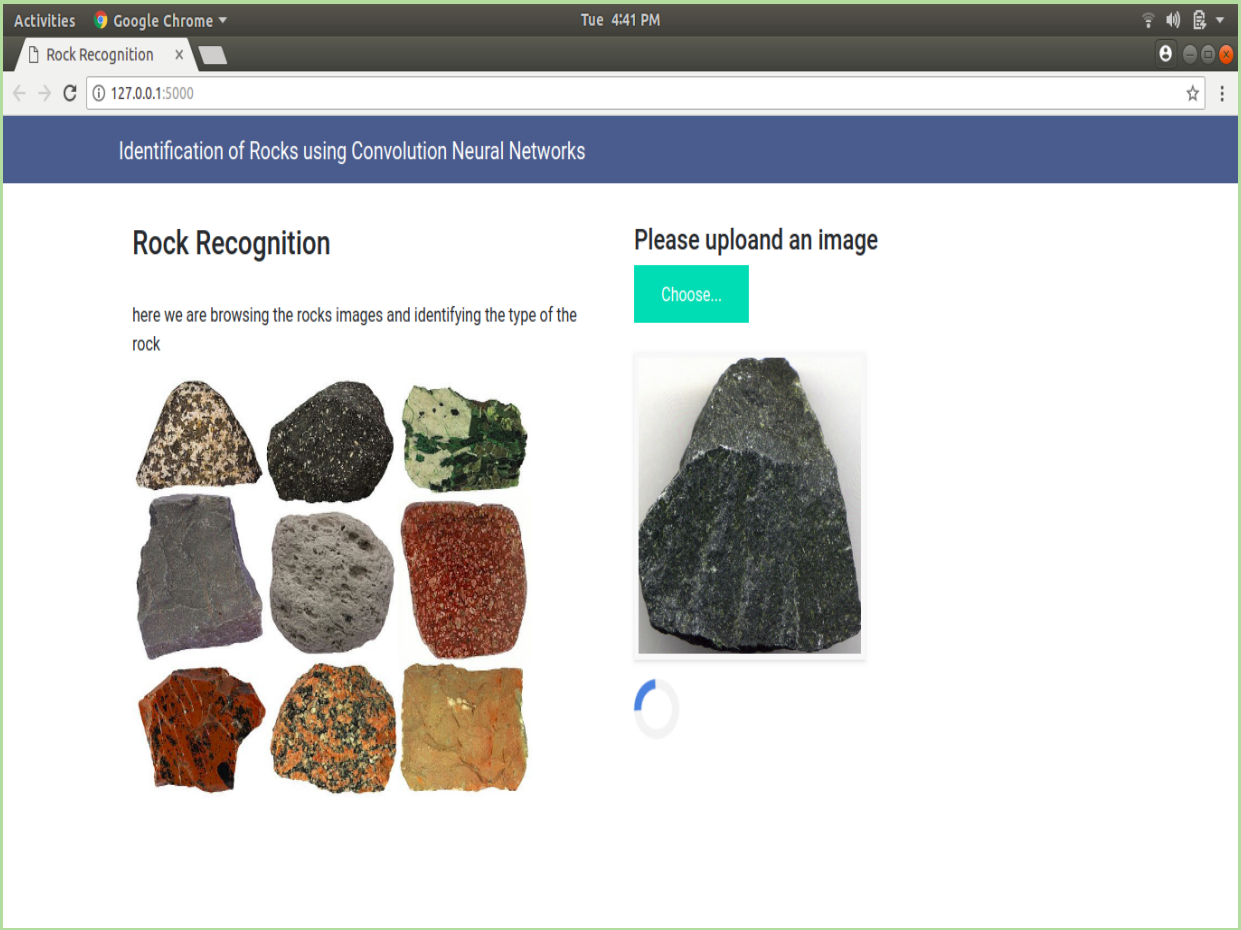
11 BIBILOGRAPHY

https://thesmartbridge.com/documents/spsaimldocs/CNNprep.pdf
https://thesmartbridge.com/documents/spsaimldocs/CNNflow.pdf
https://thesmartbridge.com/documents/spsaimldocs/CNNcollection.pdf
https://thesmartbridge.com/documents/spsaimldocs/flaskCNN.pdf

12 APPENDIX

https://smartbridge.com/

A.UI OUTPUTSCREENSHOT



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```
import numpy as np
from tensorflow.keras.preprocessing import image
from tensorflow.keras.models import load_model
import tensorflow as tf
global graph
tf.compat.v1.disable_eager_execution()
graph=tf.compat.v1.get_default_graph()
print(graph)
from flask import Flask,request,render_template
from werkzeug.utils import secure_filename
app=Flask(__name__)
model=load_model('project3.h5')
print('Model loaded. Check http://127.0.0.1:5000/')
@app.route('/',methods=['GET'])
def index():
        return render_template('base.html')
@app.route('/predict',methods=['GET','POST'])
def upload():
        if request.method=='POST':
                f=request.files['image']
        basepath=os.path.dirname(__file__)
        file_path=os.path.join(basepath,'uploads',secure_filename(f.filename))
        f.save(file_path)
        img=image.load_img(file_path,target_size=(64,64))
        x=image.img_to_array(img)
        x=np.expand_dims(x,axis=0)
        with graph.as_default():
                preds=model.predict_classes(x)
        index=['Igneous','Metamorphic','Sedimentary']

        text="prediction:"+index[preds[0]]
        return text
if __name__=='__main__':
        app.run(debug=True,threaded=False)
```