

PROJECT NAME	Project - Digital Naturalist – AI Enabled tool for Biodiversity Researchers
TEAM ID	PNT2022TMID00699

BUILDING THE FLASK APPLICATION:

The screenshot shows the VS Code editor with the 'app.py' file open. The Explorer panel on the left shows the project structure for 'DIGITAL NATURALIST', including folders for 'augmented data', 'Digital Naturalist Dataset', 'Flask', 'static', 'templates', 'uploads', and 'images'. The 'app.py' file contains the following code:

```

1  from __future__ import division, print_function
2  import os
3  import numpy as np
4  from keras.models import load_model
5  import tensorflow as tf
6  from tensorflow.keras.preprocessing import image
7  from flask import Flask, request, render_template
8  from werkzeug.utils import secure_filename
9  from keras.models import model_from_json
10
11
12  global graph
13  graph=tf.compat.v1.get_default_graph()
14  # Define a flask app
15  app = Flask(__name__)
16
17
18  # Load your trained model
19  json_file = open('final_model.json', 'r')
20  loaded_model_json = json_file.read()
21  json_file.close()
22  loaded_model = model_from_json(loaded_model_json)
23  loaded_model.load_weights("final_model.h5")
24
25  print('Model loaded. check http://127.0.0.1:5000/')
26
27  #Configure Home page.
28  @app.route('/', methods=['GET'])
29  def index():
30      # Main page
31      return render_template('digital.html')
32
33
34  #Pre-process the frame and run
35  @app.route('/predict', methods=['GET', 'POST'])
36  def upload():
37      if request.method == 'POST':

```

The status bar at the bottom indicates the file is at line 27, column 22, with 4 spaces, using UTF-8 encoding and CRLF line endings. The Python interpreter is set to 3.9.13 (base: conda).

The screenshot shows the VS Code editor with the 'app.py' file open, displaying the completed code. The Explorer panel on the left shows the project structure for 'DIGITAL NATURALIST'. The 'app.py' file contains the following code:

```

33
34  #Pre-process the frame and run
35  @app.route('/predict', methods=['GET', 'POST'])
36  def upload():
37      if request.method == 'POST':
38          # Get the file from post request
39          f = request.files['image']
40
41          # Save the file to ./uploads
42          basepath = os.path.dirname(__file__)
43          file_path = os.path.join(
44              basepath, 'uploads', secure_filename(f.filename))
45          f.save(file_path)
46          img = image.load_img(file_path, target_size=(224, 224))
47
48          x = image.img_to_array(img)
49          x = np.expand_dims(x, axis=0)
50
51          with graph.as_default():
52
53              model = load_model('./model/final_model.h5')
54              preds = np.argmax(model.predict(x), axis=1)
55              found = ["The great Indian bustard is a bustard found on the Indian subcontinent. A large bird with a horizontal body and long bare l
56                  "the spoon-billed sandpiper is a small wader which breeds in northeastern russia and winters in southeast asia. it belongs t
57                  "Amorphophallus Titanum is endemic to suมาตรา, due to its odor, like that of a rotting corpse, the titan arum is character
58                  "Lady's slipper, (subfamily Cypripedioideae), also called lady slipper or slipper orchid, subfamily of five genera of orchid
59                  "Pangolins, sometimes known as scaly anteaters, are of the order Pholidota. often thought of as a reptile, but pangolins are
60                  "The white deer found at Seneca Army Depot are a natural variation of the white-tailed deer (Odocoileus virginianus), which
61
62              text = found[preds[0]]
63              return text
64
65  if __name__ == '__main__':
66      app.run(threaded = False)

```

The status bar at the bottom indicates the file is at line 16, column 1, with 4 spaces, using UTF-8 encoding and CRLF line endings. The Python interpreter is set to 3.9.13 (base: conda).