PROJECT DEVELOPMENT PHASE

SPRINT-4 SOURCE CODE

Date	18 November 2022
Team ID	PNT2022TMID06561
Project Name	Digital Naturalist – AI Enabled Tools For Biodiversity Researchers
Maximum Marks	8 Marks

Digital.html

```
<html>
   <head>
   <title>D-Naturalist</title>

  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
<link href='https://fonts.googleapis.com/css?family=Josefin Sans' rel='stylesheet'>
<link href='https://fonts.googleapis.com/css?family=Merriweather' rel='stylesheet'>
    <script src="https://cdn.bootcss.com/popper.js/1.12.9/umd/popper.min.js"></script>
   <script src="https://cdn.bootcss.com/jquery/3.3.1/jquery.min.js"></script>
   <script src="https://cdn.bootcss.com/bootstrap/4.0.0/js/bootstrap.min.js"></script>
   <style>
           .header {
  top:0px; margin:0px; left: 0px;
right: 0px; position: fixed;
background: #22a8ee; text-
transform:uppercase; letter-
spacing:3px; color: white; overflow:
hidden; padding-bottom: 10px;
  font-size: 2.25vw; width:
100%; padding-left:0px; text-
align: center; padding-
top:5px;
                   font-family: 'Merriweather';
           }
           .second{
           top:60px;
```

```
            bottom:0px;
            margin:0px;
                    left: 0px;
                    right: 0%;
  position: absolute;    padding: 0px;
                    width: 100%;

                    background-image:url({{url_for('static',filename="images/6.jpg")}});
                    background-repeat:no-repeat;
   background-size: cover;                    background-
position:center;                    background-
attachment:absolute;

            }
            .inside{
                    top:7%;
            bottom:0px;
            margin:0px;
            left: 5%;
                    right: 55%;
  position: absolute;       padding-left: 40px;
padding-top:8%;              padding-right:5%;
background-color:transparent;
                    font-family:Merriweather;
            color:#563F31;                    font-
size:18px;                    text-align:justify;
            line-height:32px;
   margin:auto;
   overflow:hidden;
            }
 .myButton{          border: none;
text-align: center;          cursor:
pointer;              text-transform:
uppercase;          outline: none;
overflow: hidden;       color: #fff;
font-weight: 700;         font-size:
12px;             background-color:
#22a8ee;
    padding: 10px 15px;      margin: 0 auto;
                    box-shadow: 0 5px 15px rgb(34, 168, 238);
            }
```

```
    .predictimg{
            background-
image:url({{url_for('static',filename="images/7.jpg")}});
    background-repeat:no-repeat;                    background-size: cover;
            background-position:center;                    background-
attachment:absolute;
    height:100%;
    margin-top:49.6%;
    text-align:center;
    }
    #showcase{
    height:300px;
    margin-bottom:30px;
} html
{
  scroll-behavior: smooth;
}
#main{  float:center;  color:
#22a8ee;          width:100%;
padding:0  30px;   padding-
top:7%;  box-sizing: border-
box;     font-family:Georgia,
serif;  text-align:center;
}



#sidebar{
    float:right;
    width:50%;  background-color:
    transparent;   color:   #22a8ee;
    font-family:Georgia,        serif;
    padding-left:0px;       padding-
    right:0px;
    padding-top:1px;  box-
sizing: border-box;
} .img-preview {    width: 300px;    height: 300px;
position: relative;       border: 5px solid #F8F8F8;
box-shadow: 0px 2px 4px 0px rgba(0, 0, 0, 0.1);
margin-top: 1em;     margin-bottom: 1em;
```

```
}

.img-preview>div { width:
100%; height: 100%;
background-size: 300px 300px;
background-repeat: no-repeat;
background-position: center;
}

input[type="file"] {
display: none;
}

.upload-label{
display: inline-block;
padding: 12px 30px;
   background: #22a8ee;
color: #fff; font-size:
1em; transition: all .4s;
cursor: pointer; font-
weight:bold;
}
.upload-label:hover{
background: #3A3A3A;
color: white; font-
weight:bold;
}

.loader {
   border: 8px solid #f3f3f3; /* Light grey */
border-top: 8px solid #22a8ee; border-
radius: 50%; width: 50px; height: 50px;
   animation: spin 1s linear infinite;
}

@keyframes spin {
   0% { transform: rotate(0deg); }
   100% { transform: rotate(360deg); }
}
        </style>
   </head>
```

```
<body>
        <div class="header">D-Naturalist</div>
        <div class="second">
            <div class="inside">D-Naturalist creating a web application which uses a deep learning model, trained on different species of birds, flowers , animals , marine animal , plants and get the prediction of the user image is been given.

<br><br>
        <section id="showcase">
        <br>
        <div style="margin-left:32.5%">
        <a href="#section2"><button type="button" class="myButton" >BIODIVERSITY SCRUTINIZE</button></a>
        </div>
        </div>
        </section>

        </div>

        <div class="predictimg" id="section2" >
            <section id="main">
        <div style="text-align:left;width:100%;padding-left:56%;">
            <p><h3 style=font-size:25px> Click on Specify and Sync the image...<br><br></h3></p>

      </div>

        </section>
 <div     style="margin-top:0%;padding-top:0%;padding-left:40%;fontfamily:Georgia, serif;width:100%;">
                    <div>
                        <h4 style=font-size:19px>Upload your image</h4>
                <form action = "http://localhost:5000/" id="upload-file" method="post" enctype="multipart/form-data">
                    <label for="imageUpload" class="upload-label">
                        Specify.....
                    </label>
                    <input type="file" name="image" id="imageUpload" accept=".png, .jpg, .jpeg">
                </form>
```

```
                <div class="image-section" style="display:none;padding-left:35%;">
                    <div class="img-preview">
                        <div id="imagePreview">
                        </div>
                    </div>
                    </div>
                <div class="image-section" style="display:none;">
                    <div>
   <button type="button" class="btn btn-lg upload-label" id="btn-predict">foresee!</button>
                    </div>
                </div>

                <div class="loader" style="display:none;"></div>
                <div style="width:70%;text-align:justify;margin-left:20%;">
                <h4>
                    <span id="result"> </span>
                </h4></div>

   </div>

   </div></div> <script>
   window.onscroll =
   function()
   {myFunction()};

$(document).ready(function () {
   // Init
   $('.image-section').hide();
   $('.loader').hide();
   $('#result').hide();

   // Upload Preview function
readURL(input) { if (input.files
&& input.files[0]) { var reader
= new FileReader();
reader.onload = function (e) {
            $('#imagePreview').css('background-image', 'url(' + e.target.result + ')');
            $('#imagePreview').hide();
            $('#imagePreview').fadeIn(650);
```

```
            }
            reader.readAsDataURL(input.files[0]);
        }
    }
    $("#imageUpload").change(function () {
        $('.image-section').show();
        $('#btn-predict').show();
        $('#result').text('');
$('#result').hide();
        readURL(this);
    });

    // Predict
    $('#btn-predict').click(function () {
        var form_data = new FormData($('#upload-file')[0]);

        // Show loading animation
        $(this).hide();
        $('.loader').show();

        // Make prediction by calling api /predict
        $.ajax({            type:
'POST',                   url:
'/predict',               data:
form_data,
contentType:            false,
cache:                  false,
processData:            false,
async: true,
            success:  function  (data)  {
// Get and display the result
                $('.loader').hide();
                $('#result').fadeIn(600);
                $('#result').text('Prediction:                          '+data);
console.log('Success!');
            },
        });
    });

});
</script>
```

```
        </body>
</html>
```

App.py

```
from __future__ import division, print_function
import os import numpy as np import tensorflow
as tf from tensorflow.keras.preprocessing import
image   from tensorflow.keras.models import
load_model from flask import Flask, request,
render_template
from werkzeug.utils import secure_filename


global graph
#graph=tf.get_default_graph(
) # Define a flask app app =
Flask(__name__)
model = load_model('nature1.h5')


print('Model loaded. Check http://127.0.0.1:5000/') @app.route('/', methods=['GET'])
def index():     # Main page
   return render_template('digital.html')


@app.route('/predict',            methods=['GET',
'POST']) def upload():      if request.method ==
'POST':         # Get the file from post request
      f = request.files['image']

      #   Save   the   file   to   ./uploads
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 = np.argmax(model.predict(x))
found = ["animal- badger",
            "animal- bat",
            "animal- bear",
            "animal- bee",
            "animal- dolphin",
            "animal- donkey",
            "animal- dragonfly",
            "animal- duck",
            "animal- eagle",
            "animal- elephant",
            "animal- flamingo",
            "animal- fly",
            "animal- fox",
            "animal- gallina",
            "animal- gatto",
            "animal- hedgehog",
            "animal- hippopotamus",
            "animal- hornbill",
            "animal-            horse",
"animal- hummingbird"]
      print(preds)
text = found[preds]
      return text

if __name__ == '__main__':
   app.run(threaded = False)
```