

PROJECT DEVELOPMENT PHASE

SPRINT-4 SOURCE CODE

Date	17 November 2022
Team ID	PNT2022TMID49483
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);
    }
    .predicting{
        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="predicting" 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...

</h3></p>

</div>

</section>

<div style="margin-top:0%;padding-top:0%;padding-left:40%;font-family: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>

</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)
```