

Fertilizer Recommendation System for Disease Prediction

Final Code

Home.html

```
<!DOCTYPE html>
<html >

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title> Plant Disease Prediction</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet'
type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet'
type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet'
type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300'
rel='stylesheet' type='text/css'>
  <link rel="stylesheet" href="{ url_for('static', filename='css/style.css') }">
  <link href='https://fonts.googleapis.com/css?family=Merriweather'
rel='stylesheet'>
  <link href='https://fonts.googleapis.com/css?family=Josefin Sans'
rel='stylesheet'>
  <link href='https://fonts.googleapis.com/css?family=Montserrat' rel='stylesheet'>
<style>
.header {
  top:0;
  margin:0px;
  left: 0px;
  right: 0px;
  position: fixed;
  background-color: #28272c;
  color: white;
  box-shadow: 0px 8px 4px grey;
  overflow: hidden;
  padding-left:20px;
  font-family: 'Josefin Sans';
  font-size: 2vw;
  width: 100%;
  height:8%;
  text-align: center;
```

```
    }
    .topnav {
      overflow: hidden;
      background-color: #333;
    }

    .topnav-right a {
      float: left;
      color: #f2f2f2;
      text-align: center;
      padding: 14px 16px;
      text-decoration: none;
      font-size: 18px;
    }

    .topnav-right a:hover {
      background-color: #ddd;
      color: black;
    }

    .topnav-right a.active {
      background-color: #565961;
      color: white;
    }

    .topnav-right {
      float: right;
      padding-right: 100px;
    }

    body {

      background-color: #ffffff;
      background-repeat: no-repeat;
      background-size: cover;
      background-position: 0px 0px;
    }

    .button {
      background-color: #28272c;
      border: none;
      color: white;
      padding: 15px 32px;
      text-align: center;
      text-decoration: none;
      display: inline-block;
```

```
    font-size: 16px;
    border-radius: 12px;
}
.button:hover {
    box-shadow: 0 12px 16px 0 rgba(0,0,0,0.24), 0 17px 50px 0 rgba(0,0,0,0.19);
}
form {border: 3px solid #f1f1f1; margin-left:400px;margin-right:400px;}

input[type=text], input[type=password] {
    width: 100%;
    padding: 12px 20px;
    display: inline-block;
    margin-bottom:18px;
    border: 1px solid #ccc;
    box-sizing: border-box;
}

button {
    background-color: #28272c;
    color: white;
    padding: 14px 20px;
    margin-bottom:8px;
    border: none;
    cursor: pointer;
    width: 15%;
    border-radius:4px;
}

button:hover {
    opacity: 0.8;
}

.cancelbtn {
    width: auto;
    padding: 10px 18px;
    background-color: #f44336;
}

.imgcontainer {
    text-align: center;
    margin: 24px 0 12px 0;
}

img.avatar {
    width: 30%;
```

```
        border-radius: 50%;
    }

    .container {
        padding: 16px;
    }

    span.psw {
        float: right;
        padding-top: 16px;
    }

    /* Change styles for span and cancel button on extra small screens */
    @media screen and (max-width: 300px) {
        span.psw {
            display: block;
            float: none;
        }
        .cancelbtn {
            width: 100%;
        }
    }

    .home{
        margin:80px;

        width: 84%;
        height: 500px;
        padding-top:10px;
        padding-left: 30px;

    }

    .login{
        margin:80px;
        box-sizing: content-box;
        width: 84%;
        height: 420px;
        padding: 30px;
        border: 10px solid blue;
    }

    .left,.right{
        box-sizing: content-box;
        height: 400px;
        margin:20px;
        border: 10px solid blue;
    }
```

```
}

.mySlides {display: none;}
img {vertical-align: middle;}

/* Slideshow container */
.slideshow-container {
  max-width: 1000px;
  position: relative;
  margin: auto;
}

/* Caption text */
.text {
  color: #f2f2f2;
  font-size: 15px;
  padding: 8px 12px;
  position: absolute;
  bottom: 8px;
  width: 100%;
  text-align: center;
}

/* The dots/bullets/indicators */
.dot {
  height: 15px;
  width: 15px;
  margin: 0 2px;
  background-color: #bbb;
  border-radius: 50%;
  display: inline-block;
  transition: background-color 0.6s ease;
}

.active {
  background-color: #717171;
}

/* Fading animation */
.fade {
  -webkit-animation-name: fade;
  -webkit-animation-duration: 1.5s;
  animation-name: fade;
  animation-duration: 1.5s;
}
```

```

@-webkit-keyframes fade {
  from {opacity: .4}
  to {opacity: 1}
}

@keyframes fade {
  from {opacity: .4}
  to {opacity: 1}
}

/* On smaller screens, decrease text size */
@media only screen and (max-width: 300px) {
  .text {font-size: 11px}
}
</style>
</head>

<body style="font-family:'Times New Roman', Times, serif;background-
color:#C2C5A8;">

<div class="header">
  <div style="width:50%;float:left;font-size:2vw;text-align:left;color:white;
padding-top:1%">Plant Disease Prediction</div>
  <div class="topnav-right" style="padding-top:0.5%;">

    <a class="active" href="{ { url_for('home') }}">Home</a>
    <a href="{ { url_for('prediction') }}">Predict</a>
  </div>
</div>

<div style="background-color:#ffffff;">
<div style="width:60%;float:left;">
<div style="font-size:50px;font-family:Montserrat;padding-left:20px;text-
align:center;padding-top:10%;">
<b>Detect if your plant<br> is infected!!</b></div><br>
<div style="font-size:20px;font-family:Montserrat;padding-left:70px;padding-
right:30px;text-align:justify;">Agriculture is one of the major sectors worls
wide. Over the years it has developed and the use of new technologies and
equipment replaced almost all the traditional methods of farming. The plant
diseases effect the production. Identification of diseases and taking necessary
precautions is all done through naked eye, which requires labour and laboratries.
This application helps farmers in detecting the diseases by observing the spots
on the leaves, which inturn saves effort and labor costs.</div><br><br>
</div>
</div>

```

```
<div style="width:40%;float:right;"><br><br>


</div>
</div>

<div class="home">

<br>

</div>

<script>
var slideIndex = 0;
showSlides();

function showSlides() {
    var i;
    var slides = document.getElementsByClassName("mySlides");
    var dots = document.getElementsByClassName("dot");
    for (i = 0; i < slides.length; i++) {
        slides[i].style.display = "none";
    }
    slideIndex++;
    if (slideIndex > slides.length) {slideIndex = 1}
    for (i = 0; i < dots.length; i++) {
        dots[i].className = dots[i].className.replace(" active", "");
    }
    slides[slideIndex-1].style.display = "block";
    dots[slideIndex-1].className += " active";
    setTimeout(showSlides, 2000); // Change image every 2 seconds
}
</script>
</body>
</html>
```

Predict.html

```
<!DOCTYPE html>
<html >

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title> Plant Disease Prediction</title>
  <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet'
type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet'
type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet'
type='text/css'>
  <link href="https://cdn.bootcss.com/bootstrap/4.0.0/css/bootstrap.min.css"
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>
  <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300'
rel='stylesheet' type='text/css'>
  <link href='https://fonts.googleapis.com/css?family=Merriweather'
rel='stylesheet'>
  <link href='https://fonts.googleapis.com/css?family=Josefin Sans'
rel='stylesheet'>
  <link href='https://fonts.googleapis.com/css?family=Montserrat' rel='stylesheet'>
  <link href="{{ url_for('static', filename='css/final.css') }}" rel="stylesheet">
<style>
.header {
  top:0;
  margin:0px;
  left: 0px;
  right: 0px;
  position: fixed;
  background-color: #28272c;
  color: white;
  box-shadow: 0px 8px 4px grey;
  overflow: hidden;
  padding-left:20px;
  font-family: 'Josefin Sans';
  font-size: 2vw;
  width: 100%;
```



```
        height:8%;
        text-align: center;
    }
    .topnav {
        overflow: hidden;
        background-color: #333;
    }

    .topnav-right a {
        float: left;
        color: #f2f2f2;
        text-align: center;
        padding: 14px 16px;
        text-decoration: none;
        font-size: 18px;
    }

    .topnav-right a:hover {
        background-color: #ddd;
        color: black;
    }

    .topnav-right a.active {
        background-color: #565961;
        color: white;
    }

    .topnav-right {
        float: right;
        padding-right:100px;
    }

    .login{
        margin-top:-70px;
    }
    body {

        background-color:#ffffff;
        background-repeat: no-repeat;
        background-size:cover;
        background-position: 0px 0px;
    }
    .login{
        margin-top:100px;
    }
}
```

```

.container {
  margin-top:40px;
  padding: 16px;
}
select {
  width: 100%;
  margin-bottom: 10px;
  background: rgba(255,255,255,255);
  border: none;
  outline: none;
  padding: 10px;
  font-size: 13px;
  color: #000000;
  text-shadow: 1px 1px 1px rgba(0,0,0,0.3);
  border: 1px solid rgba(0,0,0,0.3);
  border-radius: 4px;
  box-shadow: inset 0 -5px 45px rgba(100,100,100,0.2), 0 1px 1px
rgba(255,255,255,0.2);
  -webkit-transition: box-shadow .5s ease;
  -moz-transition: box-shadow .5s ease;
  -o-transition: box-shadow .5s ease;
  -ms-transition: box-shadow .5s ease;
  transition: box-shadow .5s ease;
}

</style>
</head>

<body style="font-family:Montserrat;overflow:scroll;">

<div class="header">
  <div style="width:50%;float:left;font-size:2vw;text-align:left;color:white;
padding-top:1%">Plant Disease Prediction</div>
  <div class="topnav-right" style="padding-top:0.5%;">

    </div>
  </div>
</div>
<div class="container">
  <div id="content" style="margin-top:2em">
    <div class="container">
      <div class="row">
        <div class="col-sm-6 bd" >

```

```

        <br>
        
    </div>
    <div class="col-sm-6">
        <div>
            <h4>Drop in the image to get the prediction </h4>
            <form action = "" id="upload-file" method="post"
enctype="multipart/form-data">
                <select name="plant">

                    <option value="select" selected>Select plant type</option>
                    <option value="fruit">Fruit</option>
                    <option value="vegetable">Vegetable</option>
                </select><br>
                <label for="imageUpload" class="upload-label" style="background:
#28272c;">
                    Choose...
                </label>
                <input type="file" name="image" id="imageUpload" accept=".png,
.jpg, .jpeg">
            </form>

            <div class="image-section" style="display:none;">
                <div class="img-preview">
                    <div id="imagePreview">
                    </div>
                </div>
                <div>
                    <button type="button" class="btn btn-info btn-lg " id="btn-
predict" style="background: #28272c;">Predict!</button>
                </div>
            </div>

            <div class="loader" style="display:none;"></div>

            <h3>
                <span id="result" style="font-size:17px; "> </span>
            </h3>
        </div>
    </div>

```

```

        </div>
    </div>
</div>
</div>
</body>

<footer>
    <script src="{{ url_for('static', filename='js/main.js') }}"
type="text/javascript"></script>
</footer>
</html>

```

Final.css

```

.img-preview {
    width: 256px;
    height: 256px;
    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: 256px 256px;
    background-repeat: no-repeat;
    background-position: center;
}

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

.upload-label{
    display: inline-block;
    padding: 12px 30px;
    background: #28272c;
    color: #fff;
    font-size: 1em;
    transition: all .4s;
    cursor: pointer;
}

```

```

}

.upload-label:hover{
    background: #C2C5A8;
    color: #39D2B4;
}

.loader {
    border: 8px solid #f3f3f3; /* Light grey */
    border-top: 8px solid #28272c; /* Blue */
    border-radius: 50%;
    width: 50px;
    height: 50px;
    animation: spin 1s linear infinite;
}

@keyframes spin {
    0% { transform: rotate(0deg); }
    100% { transform: rotate(360deg); }
}

```

Main.js

```

$(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!');
            },
        });
    });
});

```

app.py

```
import os
os.environ['TF_CPP_MIN_LOG_LEVEL'] = '2'
import requests
from tensorflow.keras.preprocessing import image
from tensorflow.keras.models import load_model
import numpy as np
import pandas as pd
import tensorflow as tf
from tensorflow.python.keras.backend import set_session
from werkzeug.utils import secure_filename
from flask import Flask, redirect, render_template, request, url_for
from flask import Flask, render_template
from tensorflow.keras.models import load_model#to load our trained model
import os
from werkzeug.utils import secure_filename

app = Flask(__name__, template_folder="template")
model1 = load_model('fruit.h5')
model = load_model('vegetable.h5')

@app.route('/')
def home():
    return render_template('home.html')
@app.route('/Predict')
def predict():
    return render_template('Predict.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)
        print("file save")
        img = image.load_img(filepath, target_size=(128,128))
        x=image.img_to_array(img)
        print("image to gray")
        x=np.expand_dims(x, axis=0)
        plant=request.form['plant']
    if (plant=="fruit"):
        model1.predict_classes(x)
        print(preds)
```

```
df=pd.read_excel('precautions - fruits.xlsx')
print (df.iloc[preds[0]]['cautions'])
else:
    preds=model.predict_classes(x)
    df=pd.read_excel("precautions-veg.xlsx")
    print(df.iloc[preds[0]]['caution'])

    return df.iloc[preds[0]]['caution']

if __name__=="__main__":
    app.run(debug=True)
```