CODE

MAIN.PY

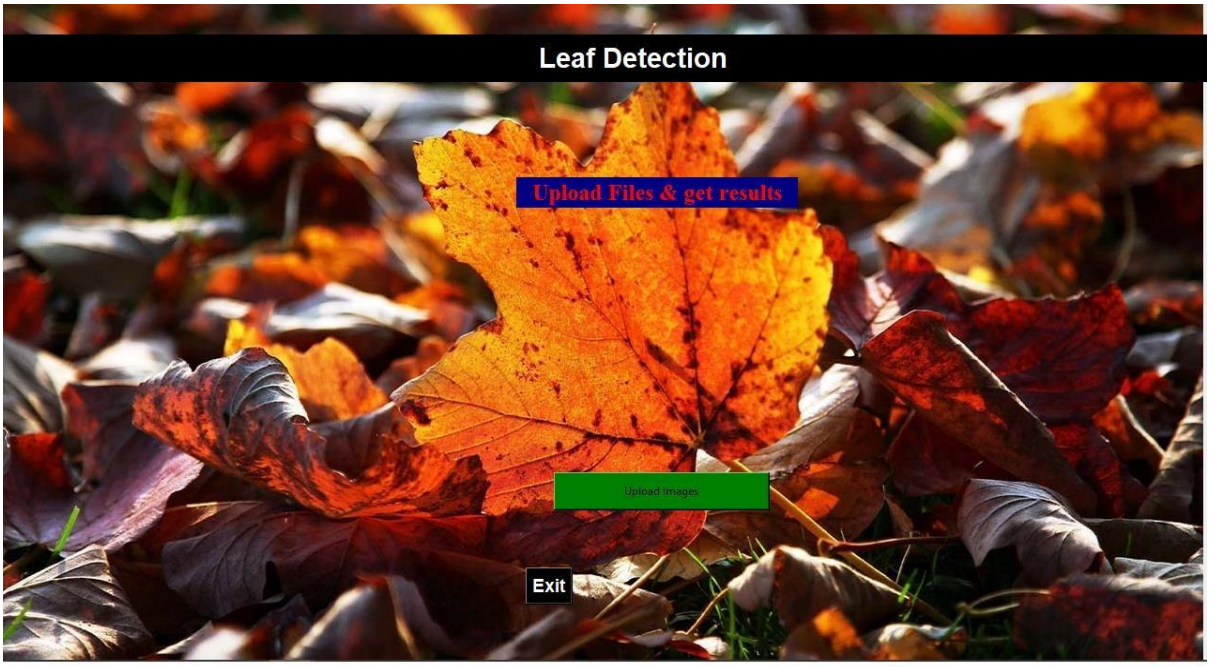
```
import tensorflow as tf
from keras_preprocessing.image import ImageDataGenerator
from keras_preprocessing import image
import numpy as np
import easygui
from keras.models import load_model
import os
import serial
import tkinter as tk
from tkinter import *
from tkinter import filedialog
from tkinter.filedialog import askopenfile
from PIL import Image, ImageTk
my_w = tk.Tk()
sw=my_w.winfo_screenwidth()
sh=my_w.winfo_screenheight()
my_w.geometry('%dx%d'%(sw,sh))
my_w.title('Leaf Detection')
my_font1=('times', 18, 'bold')

bg = ImageTk.PhotoImage(file='leaf.webp')
bgLabel = Label(my_w, image=bg)
bgLabel.place(x=0, y=0)

l1 = tk.Label(my_w,text='Upload Files & get
```

```
results',width=30,font=my_font1,bg='#000080',
                fg='red',)
l1.place(x=550, y=190, width=300)
b1 = tk.Button(my_w, text='Upload Images',
  width=20,command = lambda:result(), activebackground='#000080', bg='green')
b1.place(x=590,y=500, width=230, height=40)

print(tf.__version__)

def close():
  my_w.destroy()



titleLabel = Label(my_w, text='Leaf Detection', font=('italic', 22, 'bold '), bg='black',
                fg='white', )
titleLabel.place(x=0, y=40, width=1350, height=50)

endbtn=Button(my_w,text="Exit",font='italic 14
bold',bg='black',fg='white',command=close)
endbtn.place(x=560,y=600,width=50)

model1 = load_model('model/Class1/model_Class1.h5')
model2 = load_model('model/Class2/model_Class2.h5')
model3 = load_model('model/Class3/model_Class3.h5')
model4=load_model('model/Class4/model_Class4.h5')
model5=load_model('model/Class5/model_Class5.h5')
```

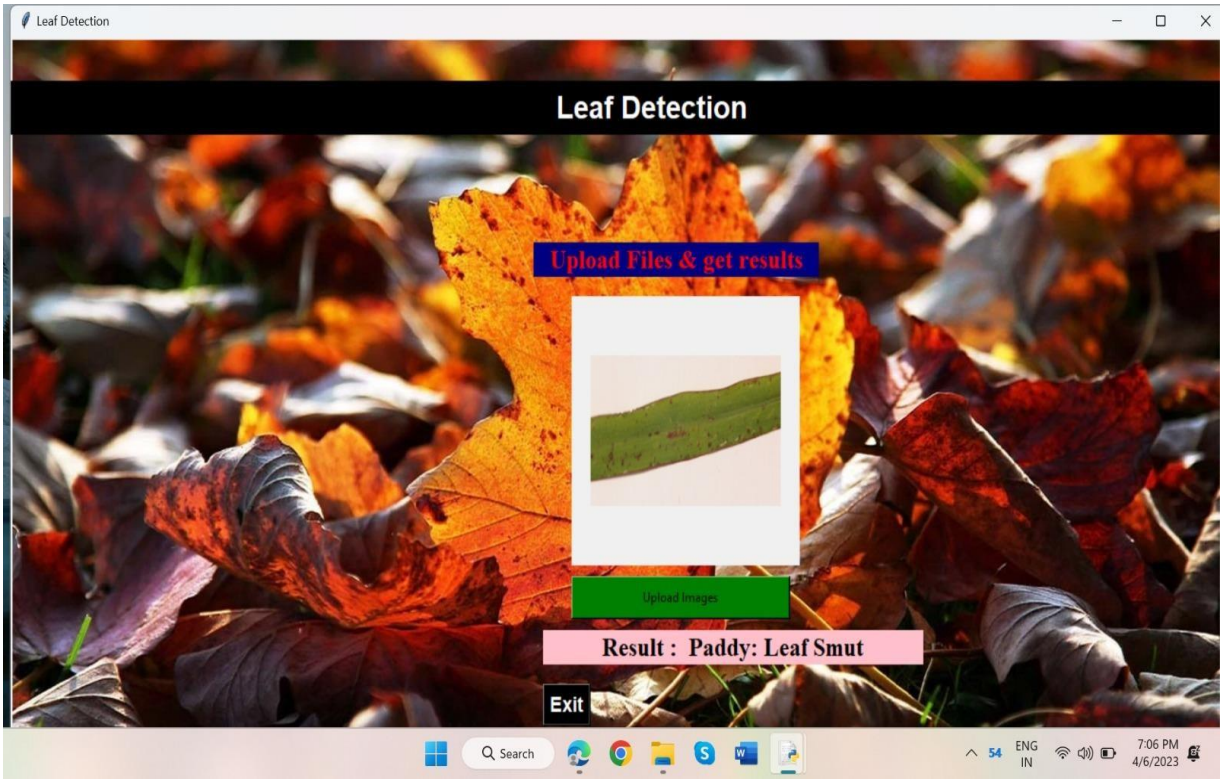
```
def result():

  filename =upload_file()
  test_image2 = image.load_img(filename, target_size = (64, 64))
  test_image2 = image.img_to_array(test_image2)
  test_image2 = np.expand_dims(test_image2, axis = 0)
  # cnn prediction on the test image
  result2 = model1.predict(test_image2)
  print(result2)
  result3 = model2.predict(test_image2)
  print(result3)
  result4 = model3.predict(test_image2)
  print(result4)
  result5=model4.predict(test_image2)
  print(result5)
  result6=model5.predict(test_image2)
  print(result6)
  if  result2[0][0]==1:
    if result3[0][0]==0:
      if result4[0][0]==1:
        prediction2='Paddy: Leaf Smut'
      else:
        prediction2='Paddy: Brown Spot'
    else:
      prediction2='Paddy: Healthy'
  else:
    if result5[0][0]==0:
```

```
        if result6[0][0]==1:
          prediction2='Maize: Gray Leaf Spot'
        else:
          prediction2='Maize: Common Rust'
      else:
        prediction2='Maize: Healthy'
      print(prediction2)
    prediction=prediction2
    l2 = tk.Label(my_w,text="Result :
"+prediction,width=50,font=my_font1,bg='pink',
                  fg='black',)
    l2.place(x=560, y=550, width=400)
    return filename

def upload_file():
    filename=easygui.fileopenbox()
    img=Image.open(filename) # read the image file
    img=img.resize((200,140)) # new width & height
    img=ImageTk.PhotoImage(img)
    e1 =tk.Label(my_w)
    e1.place(x=590, y=240, width=240, height=250)
    e1.image = img
    e1['image']=img
    return filename

my_w.mainloop()
```

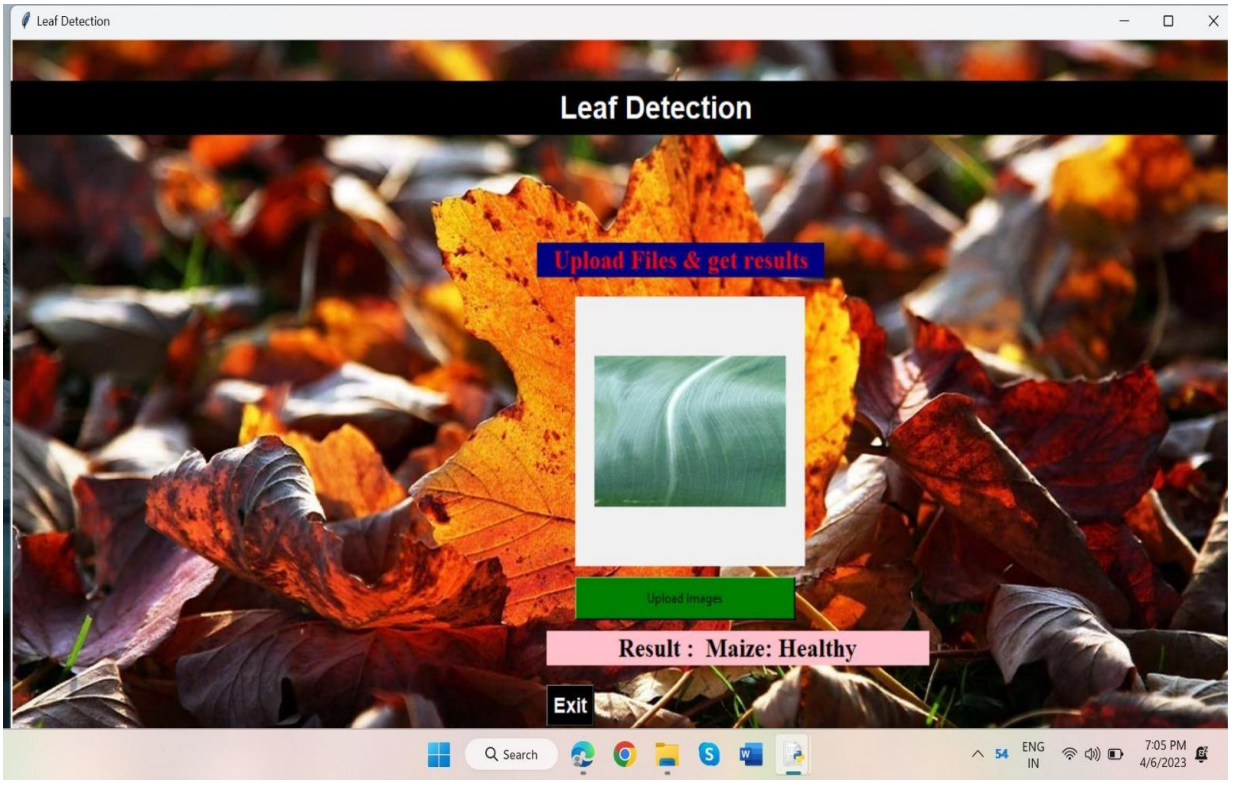
OUTPUT SCREENSHOT:
HOME PAGE:

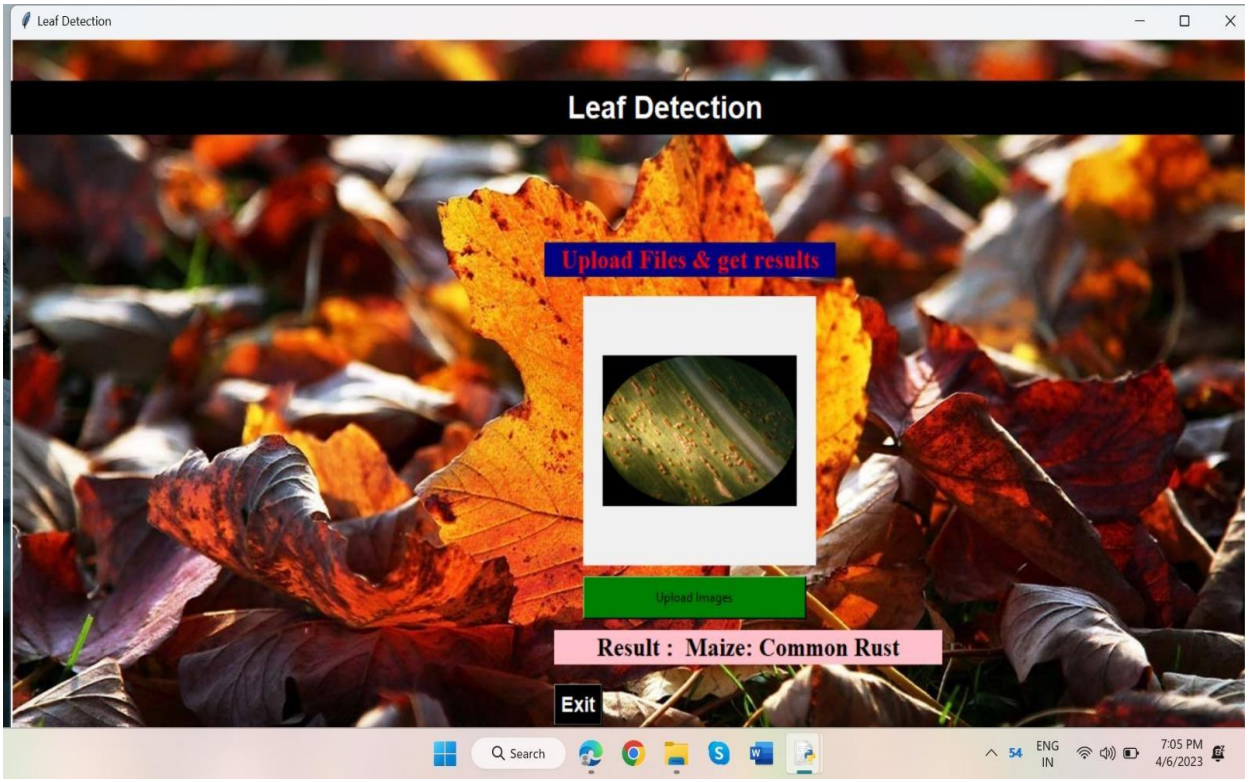


PADDY LEAF:


Leaf Detection
Leaf Detection
Upload Files & get results
Upload Images
Result : Paddy: Leaf Smut
Exit
Search
ENG
IN
7:06 PM
4/6/2023

MAIZE LEAF:


Leaf Detection
Leaf Detection
Upload Files & get results
Upload Images
Result : Maize: Healthy
Exit
Search
ENG
IN
7:05 PM
4/6/2023


Leaf Detection
Leaf Detection
Upload Files & get results
Upload Images
Result : Maize: Common Rust
Exit
Search
ENG
IN
7:05 PM
4/6/2023


Leaf Detection
Upload Files & get results
Upload Images
Result : Maize: Gray Leaf Spot
Exit