import cv2

import numpy as np

import tensorflow as tf

from tensorflow.keras.models import load\_model

# Load the trained model

model = load\_model('fruitdisesae.keras')

# Define a function to preprocess the image

def preprocess\_image(image):

image = cv2.resize(image, (224, 224)) # Resize the image to the input size expected by the model

image = image / 255.0 # Normalize the pixel values

image = np.expand\_dims(image, axis=0) # Add batch dimension

return image

# Define a function to predict the disease

def predict\_disease(image):

processed\_image = preprocess\_image(image)

prediction = model.predict(processed\_image)

disease\_index = np.argmax(prediction)

return disease\_index

# Define a dictionary to map disease index to disease name

disease\_dict = {

0: 'Blotch',

1: 'healthy',

2: 'Rot',

3: 'Scab'

}

# Access the camera

cap = cv2.VideoCapture(0)

while True:

ret, frame = cap.read()

if not ret:

break

# Predict the disease

disease\_index = predict\_disease(frame)

disease\_name = disease\_dict[disease\_index]

# Display the result

cv2.putText(frame, f'Disease: {disease\_name}', (10, 30), cv2.FONT\_HERSHEY\_SIMPLEX, 1, (0, 255, 0), 2, cv2.LINE\_AA)

cv2.imshow('Apple Disease Prediction', frame)

if cv2.waitKey(1) & 0xFF == ord('q'):

break

cap.release()

cv2.destroyAllWindows()