from fastapi import FastAPI, File, UploadFile  
from fastapi.middleware.cors import CORSMiddleware  
import uvicorn  
import numpy as np  
from io import BytesIO  
from PIL import Image  
import tensorflow as tf  
from translate import Translator  
  
translator = Translator(to\_lang="Hindi")  
  
app = FastAPI()  
  
origins = [  
 "http://localhost",  
 "http://localhost:3000",  
]  
app.add\_middleware(  
 CORSMiddleware,  
 allow\_origins=origins,  
 allow\_credentials=True,  
 allow\_methods=["\*"],  
 allow\_headers=["\*"],  
)  
  
MODEL = tf.keras.models.load\_model("D:/2022/CNN project - potato leaves/potato data set/trained\_model")  
CLASS\_NAMES = ["Early Blight", "Late Blight", "Healthy"]  
  
@app.get("/ping")  
async def ping():  
 return "Hello, I am alive"  
  
def read\_file\_as\_image(data) -> np.ndarray:  
 image = np.array(Image.open(BytesIO(data)))  
 return image  
  
@app.post("/predict")  
async def predict(file: UploadFile = File(...)):  
 image = read\_file\_as\_image(await file.read())  
 img\_batch = np.expand\_dims(image, 0)  
 predictions = MODEL.predict(img\_batch)  
 pm = []  
 pm\_hindi = []  
 predicted\_class = CLASS\_NAMES[np.argmax(predictions[0])]  
 message1 = 'Welcome to the portal for detecting and rectifying potato plant disease !!!'  
 message2 = 'आलू के पौधे की बीमारी का पता लगाने और उसे ठीक करने के पोर्टल में आपका स्वागत है !!!'  
 if predicted\_class == CLASS\_NAMES[0]:  
 pm\_hindi = 'बेयर गार्डन ब्लाइट कंट्रोल'  
 pm = 'bare garden blight control'  
 class\_hindi = 'अर्ली ब्लाइट'  
 elif predicted\_class == CLASS\_NAMES[1]:  
 pm\_hindi = 'मैन्कोज़ेब का रोगनिरोधी स्प्रे 0.25% और उसके बाद सायमोक्सानिल+मैंकोज़ेब या डाइमेथोमोर्फ+मैनकोज़ेब 0.3% पर'  
 pm = 'Prophylactic spray of mancozeb at 0.25% followed by cymoxanil+mancozeb or dimethomorph+mancozeb at 0.3%'  
 class\_hindi = 'लेट ब्लाइट'  
 else:  
 class\_hindi = 'कोई बीमारी नहीं मिली :)'  
 confidence = np.max(predictions[0])  
 return {  
 'Title': message1,  
 'शीर्षक': message2,  
 'class': predicted\_class,  
 'रोग का नाम': class\_hindi,  
 'confidence': float(confidence),  
 'Suggested Spray': pm,  
 'सुझाया गया स्प्रे': pm\_hindi  
 }  
  
#translator= Translator(to\_lang="Hindi")  
#translation = translator.translate("Good Morning!")  
#print(translation)  
  
if \_\_name\_\_ == "\_\_main\_\_":  
 uvicorn.run(app, host='localhost', port=8000)