import numpy as np

import pandas as pd

from sklearn.ensemble import RandomForestClassifier

from sklearn.model\_selection import train\_test\_split

from sklearn.metrics import accuracy\_score

# Step 1: Disease Prediction

def predict\_disease(data):

"""Predict crop diseases based on environmental data."""

features = data[['temperature', 'humidity', 'soil\_moisture', 'ph']]

labels = data['disease\_label']

X\_train, X\_test, y\_train, y\_test = train\_test\_split(features, labels, test\_size=0.2, random\_state=42)

model = RandomForestClassifier()

model.fit(X\_train, y\_train)

predictions = model.predict(X\_test)

accuracy = accuracy\_score(y\_test, predictions)

print(f"Disease Prediction Accuracy: {accuracy \* 100:.2f}%")

return model