import streamlit as st

import numpy as np

import pandas as pd

from pickle import load

model = load(open('standard\_scaler.pkl' ,'rb'))

model = load(open('randomforestregression.pkl' ,'rb'))

@st.cache

def predict(carat,cut,color,clarity,depth,table,x,y,z):

    if cut == 'Fair':

        cut = 0

    elif cut == 'Good':

        cut = 1

    elif cut == 'Very Good':

        cut = 2

    elif cut == 'Premium':

        cut = 3

    elif cut == 'Ideal':

        cut = 4

    if color == 'J':

        color = 0

    elif color == 'I':

        color = 1

    elif color == 'H':

        color = 2

    elif color == 'G':

        color = 3

    elif color == 'F':

        color = 4

    elif color == 'E':

        color = 5

    elif color == 'D':

        color = 6

    if clarity == 'I1':

        clarity = 0

    elif clarity == 'SI2':

        clarity = 1

    elif clarity == 'SI1':

        clarity = 2

    elif clarity == 'VS2':

        clarity = 3

    elif clarity == 'VS1':

        clarity = 4

    elif clarity == 'VVS2':

        clarity = 5

    elif clarity == 'VVS1':

        clarity = 6

    elif clarity == 'IF':

        clarity = 7

    prediction = model.predict(pd.DataFrame([[carat, cut, color, clarity, depth, table, x, y, z]], columns=['carat', 'cut', 'color', 'clarity', 'depth', 'table', 'x', 'y', 'z']))

    return prediction

st.title('Diamond Price Predictor')

st.image("""https://thumbs.dreamstime.com/z/sapphire-blue-diamond-brilliant-cut-shiny-background-closeup-136807317.jpg""")

st.header('Enter the characteristics of the diamond:')

carat = st.number\_input('Carat Weight:', min\_value=0.1, max\_value=10.0, value=1.0)

cut = st.selectbox('Cut Rating:', ['Fair', 'Good', 'Very Good', 'Premium', 'Ideal'])

color = st.selectbox('Color Rating:', ['J', 'I', 'H', 'G', 'F', 'E', 'D'])

clarity = st.selectbox('Clarity Rating:', ['I1', 'SI2', 'SI1', 'VS2', 'VS1', 'VVS2', 'VVS1', 'IF'])

depth = st.number\_input('Diamond Depth Percentage:', min\_value=0.1, max\_value=100.0, value=1.0)

table = st.number\_input('Diamond Table Percentage:', min\_value=0.1, max\_value=100.0, value=1.0)

x = st.number\_input('Diamond Length (X) in mm:', min\_value=0.1, max\_value=100.0, value=1.0)

y = st.number\_input('Diamond Width (Y) in mm:', min\_value=0.1, max\_value=100.0, value=1.0)

z = st.number\_input('Diamond Height (Z) in mm:', min\_value=0.1, max\_value=100.0, value=1.0)

if st.button('Predict Price'):

    price = predict(carat, cut, color, clarity, depth, table, x, y, z)

    st.success(f'The predicted price of the diamond is ${price[0]:.2f} USD')