```python
import gradio as gr
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.preprocessing import MinMaxScaler
from keras.models import Sequential
from keras.layers import Dense, LSTM
import plotly.graph_objects as go
import io

def clean_column_names(df):
    df.columns = [col.strip().replace("*", "").replace("**", "") for col in df.columns]
    return df

def predict_stock_price(file):
    try:
        df = pd.read_csv(file.name)
    except Exception as e:
        return "❌ Error loading CSV file. Please upload a valid file.", None

    df = clean_column_names(df)

    if 'Close' not in df.columns:
        if 'Adj Close' in df.columns:
            df.rename(columns={'Adj Close': 'Close'}, inplace=True)
        else:
            return "❌ CSV must contain 'Close' or 'Adj Close' column.", None

    try:
        df['Close'] = df['Close'].astype(str).str.replace(',', '').astype(float)
    except Exception as e:
        return f"❌ Error converting 'Close' column to float: {e}", None

    data = df.filter(['Close'])
    dataset = data.values
    training_data_len = int(np.ceil(len(dataset) * .8))

    scaler = MinMaxScaler(feature_range=(0, 1))
    scaled_data = scaler.fit_transform(dataset)

    train_data = scaled_data[0:int(training_data_len), :]
    x_train = []
    y_train = []

    for i in range(60, len(train_data)):
        x_train.append(train_data[i-60:i, 0])
        y_train.append(train_data[i, 0])

    x_train, y_train = np.array(x_train), np.array(y_train)
    x_train = np.reshape(x_train, (x_train.shape[0], x_train.shape[1], 1))

    model = Sequential()
    model.add(LSTM(50, return_sequences=True, input_shape=(x_train.shape[1], 1)))
    model.add(LSTM(50, return_sequences=False))
    model.add(Dense(25))
    model.add(Dense(1))

    model.compile(optimizer='adam', loss='mean_squared_error')
    model.fit(x_train, y_train, batch_size=1, epochs=1, verbose=0)

    test_data = scaled_data[training_data_len - 60:, :]
    x_test = []
    y_test = dataset[training_data_len:, :]

    for i in range(60, len(test_data)):
        x_test.append(test_data[i-60:i, 0])

    x_test = np.array(x_test)
    x_test = np.reshape(x_test, (x_test.shape[0], x_test.shape[1], 1))

    predictions = model.predict(x_test)
    predictions = scaler.inverse_transform(predictions)

    train = data[:training_data_len]
    valid = data[training_data_len:]
    valid = valid.assign(Predictions=predictions.flatten())

    fig = go.Figure()
    fig.add_trace(go.Scatter(x=train.index, y=train['Close'], name='Train Close'))
    fig.add_trace(go.Scatter(x=valid.index, y=valid['Close'], name='Actual Close'))
    fig.add_trace(go.Scatter(x=valid.index, y=valid['Predictions'], name='Predicted Close'))
```

```
      fig.update_layout(title='Stock Price Prediction vs Actual', xaxis_title='Date', yaxis_title='Price')

      return "✅ Prediction completed!", fig

# Gradio Interface
iface = gr.Interface(
    fn=predict_stock_price,
    inputs=gr.File(label="Upload CSV"),
    outputs=[gr.Textbox(label="Status"), gr.Plot(label="Prediction Graph")],
    title="📊 LSTM Stock Predictor (Gradio)",
    description="Upload a CSV file with a 'Close' or 'Adj Close' column to predict stock prices."
)

if __name__ == "__main__":
    iface.launch(share=True)  # This enables the public gradio.live link
```

⇥ Colab notebook detected. To show errors in colab notebook, set debug=True in launch()
   * Running on public URL: https://3ee430a1c8412587cf.gradio.live

   This share link expires in 1 week. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in the working

# 📊 LSTM Stock Predictor (Gradio)

Upload a CSV file with a 'Close' or 'Adj Close' column to predict stock prices.

| Upload CSV | Status |
| --- | --- |

Drop File Here
- or -
Click to Upload

Prediction Graph

**Clear**          Submit

**Flag**

```
pip install gradio
```

⇥ Collecting gradio
     Downloading gradio-5.29.0-py3-none-any.whl.metadata (16 kB)
   Collecting aiofiles<25.0,>=22.0 (from gradio)
     Downloading aiofiles-24.1.0-py3-none-any.whl.metadata (10 kB)
   Requirement already satisfied: anyio<5.0,>=3.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (4.9.0)
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     Downloading gradio_client-1.10.0-py3-none-any.whl.metadata (7.1 kB)
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   Requirement already satisfied: numpy<3.0,>=1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.0.2)
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   Requirement already satisfied: pandas<3.0,>=1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.2.2)
   Requirement already satisfied: pillow<12.0,>=8.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (11.2.1)
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Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.11/dist-packages (from anyio<5.0,>=3.0->gradio) (3.10)
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Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio) (
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```