```
import yfinance as yf
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.preprocessing import MinMaxScaler
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import LSTM, Dense, Dropout
data = yf.download('RELIANCE.NS', start='2016-01-01', end='2024-01-01')s
data = data[['Close']]
scaler = MinMaxScaler(feature_range=(0, 1))
scaled_data = scaler.fit_transform(data)
X = []
y = []
sequence_length = 60

for i in range(sequence_length, len(scaled_data)):
    X.append(scaled_data[i-sequence_length:i, 0])
    y.append(scaled_data[i, 0])

X, y = np.array(X), np.array(y)
X = np.reshape(X, (X.shape[0], X.shape[1], 1))
model = Sequential()
model.add(LSTM(units=50, return_sequences=True, input_shape=(X.shape[1], 1)))
model.add(Dropout(0.2))
model.add(LSTM(units=50, return_sequences=False))
model.add(Dropout(0.2))
model.add(Dense(units=1))
model.compile(optimizer='adam', loss='mean_squared_error')
model.fit(X, y, epochs=20, batch_size=32)
predicted_scaled = model.predict(X)
predicted_price = scaler.inverse_transform(predicted_scaled)
actual_price = scaler.inverse_transform(y.reshape(-1, 1))
plt.figure(figsize=(10,6))
plt.plot(actual_price, label="Actual Price")
plt.plot(predicted_price, label="Predicted Price")
plt.title("LSTM Forecast: Reliance Industries")
plt.xlabel("Days")
plt.ylabel("Price (INR)")
plt.legend()
plt.grid(True)
plt.show()
```

```
/tmp/ipython-input-1-3744706014.py:8: FutureWarning: YF.download() has changed argument auto_adjust default to True
  data = yf.download('RELIANCE.NS', start='2016-01-01', end='2024-01-01')
[*********************100%***********************]  1 of 1 completed
/usr/local/lib/python3.11/dist-packages/keras/src/layers/rnn/rnn.py:200: UserWarning: Do not pass an `input_shape`/`input_dim` ar
  super().__init__(**kwargs)
Epoch 1/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 14s 74ms/step - loss: 0.0408
Epoch 2/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 4s 52ms/step - loss: 0.0045
Epoch 3/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 5s 53ms/step - loss: 0.0035
Epoch 4/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 5s 52ms/step - loss: 0.0032
Epoch 5/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 5s 53ms/step - loss: 0.0034
Epoch 6/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 4s 64ms/step - loss: 0.0028
Epoch 7/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 4s 58ms/step - loss: 0.0028
Epoch 8/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 3s 51ms/step - loss: 0.0027
Epoch 9/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 6s 59ms/step - loss: 0.0027
Epoch 10/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 5s 52ms/step - loss: 0.0028
Epoch 11/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 3s 54ms/step - loss: 0.0029
Epoch 12/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 6s 74ms/step - loss: 0.0031
Epoch 13/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 3s 52ms/step - loss: 0.0023
Epoch 14/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 3s 53ms/step - loss: 0.0025
Epoch 15/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 3s 53ms/step - loss: 0.0023
Epoch 16/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 4s 73ms/step - loss: 0.0021
Epoch 17/20
60/60 ━━━━━━━━━━━━━━━━━━━━ 4s 52ms/step - loss: 0.0026
```