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import yfinance as yf
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import r2_score
import numpy as np
import matplotlib.pyplot as plt
import plotly.express as px

tickerSymbol = 'AAPL'
tickerData = yf.Ticker(tickerSymbol)
data = tickerData.history(period='1d', start='2022-1-1', end='2023-01-01')

X = data[['Volume', 'Open']]
Y = data['Close']

X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size = 0.2, random_state= 42)

model = LinearRegression()

model.fit(X_train, Y_train)

Y_pred = model.predict(X_test)

accuracy = r2_score(Y_test, Y_pred)

# Create a DataFrame with actual and predicted prices
scatter_data = pd.DataFrame({'Date': Y_test.index, 'Actual Price': Y_test.values, 'Predicted Price': Y_pred})

# Plot scatterplot with tooltips using plotly
fig = px.scatter(scatter_data, x='Date', y='Actual Price', hover_data=['Predicted Price'],
                 title=f'Actual vs. Predicted Stock Prices with Accuracy: {accuracy:.2%}')
fig.update_traces(mode='markers', marker=dict(size=8))
fig.show()

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Actual vs. Predicted Stock Prices with Accuracy: 95.57%



