Assessment 2

Stock Market Analysis

Data:
https://github.com/Priya-tops/Tops-Assessment-Data/blob/main/Data%20Science/stock_market_dataset.csv

Explore the Data by Answering the Following Questions and Summarize Your Insights
Use Python libraries such as Pandas, NumPy, Matplotlib, and Seaborn to analyze the data.
After answering each question, write a brief summary of your findings or observations.

1. Are there missing values in the dataset?
2. What is the data type of each column?
3. Convert Date to datetime format.
4. Check for duplicate rows.
5. Check the range of RSI (Relative Strength Index).
6. Verify if Next_Close corresponds to the next day's Close.
7. Check if any column has constant value.
8. Check if 'Target' only has 0s and 1s.
9. Are there outliers in Volume?
10. Check correlation matrix.
11. Are there negative values in Close, Open, MACD, etc.?
12. Check for abrupt spikes in Interest Rate.
13. Do Bollinger Bands make sense?
14. Is Sentiment_Score standardized (between -1 and 1)?
15. What is the average trading volume?
16. What % of data has RSI > 70 (overbought zone)?
17. Check for monotonic date sequences.
18. Detect anomalies using Z-Score.
19. Are the dates consecutive trading days (excluding weekends/holidays)?
20. Are any Open, Close, High, or Low values zero or negative?

Insightful Analysis Questions
These questions aim to uncover key relationships and gain deeper knowledge about cardiovascular disease. To answer them, you'll need to analyze the data and write down any patterns, trends, or observations you notice during the process.

1. What's the average closing price over the dataset?
2. Which technical indicator has the highest correlation with Target?
3. Is RSI > 70 usually followed by a drop (Target = 0)?
4. Do high sentiment scores (> 0.5) predict upward movement?
5. How does GDP growth affect stock movement?
6. What is the average return when MACD > 0?
7. What is the win rate (Target=1 %) overall?
8. How accurate would a naive "buy every day" model be?
9. What does Bollinger Band compression indicate?
10. Does low volume relate to price drops (Target = 0)?
11. Plot rolling mean vs price
12. . What % of up days occur with MACD > 0 and RSI < 70?
13. . What % of up days occur with MACD > 0 and RSI < 70?
14. . How much profit could be made using Target 1 strategy?
15. Does lower interest rate lead to stock rise (Target=1)?