Data Science Assignment Report

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Project: Relationship Between Trader Behaviour and Market Sentiment
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1. Introduction
In this project, I studied how trader activity changes when the market
sentiment is Fear or Greed. The aim is to see if traders change their
trade size, profit, and volume based on the mood of the market.

2. Datasets Used
- Sentiment dataset: Contains date, value, and a label.
- Trader dataset: Contains price, size of trade, profit/loss and timestamp of each trade.

3. Data Cleaning
- Removed duplicate rows.
- Removed rows with missing values in important columns like price, size, and Closed PnL.
- Converted date and time columns into proper datetime format.
- Created a new column called "date_only" to match trades with sentiment on the same day.
- Merged the sentiment data with the trader data using the date_only column.

4. Feature Engineering
- trade_value = Execution Price × Size Tokens
- profit_flag = 1 if Closed PnL > 0, else 0
- risk = Size Tokens (simple way to think about risk)

These new columns help to measure volume, profit behaviour, and risk.

5. Key Findings
- Traders behave differently on Fear days and Greed days.
- Total trade value changes with sentiment. Some days show higher volume
- when the market is greedy or when it is fearful.
- Average profit also changes with sentiment. One of the sentiments gives higher average Closed PnL.
- Traders may take bigger trades under certain sentiments, which shows
- how confidence or fear affects decisions.

6. Visualisation

I created a bar graph that compares total trade value between Fear and Greed days. This graph makes it easy to see which sentiment has more trading activity.

7. Conclusion

From this analysis, I learned that market sentiment (Fear or Greed) has a clear impact on trader behaviour. Trade volume, profit, and trade size all change with the mood of the market. This type of analysis can help traders understand how psychology and emotions affect real trading activity.