

# Assignment Report

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## **Objective:**

The objective of this project is to analyze how trading behavior (profitability, risk, volume, leverage) aligns or diverges from overall market sentiment (fear vs greed) and to identify hidden trends or signals that could influence smarter trading strategies.

## **Dataset:**

The dataset used for this analysis were:

1. Bitcoin Market Sentiment Dataset: Provides Classification (Fear vs Greed) according to Date.
2. Historical Trader Data from Hyperliquid: Contains variables like account, symbol, execution price, size, side, time and other attributes.

## **Methodologies:**

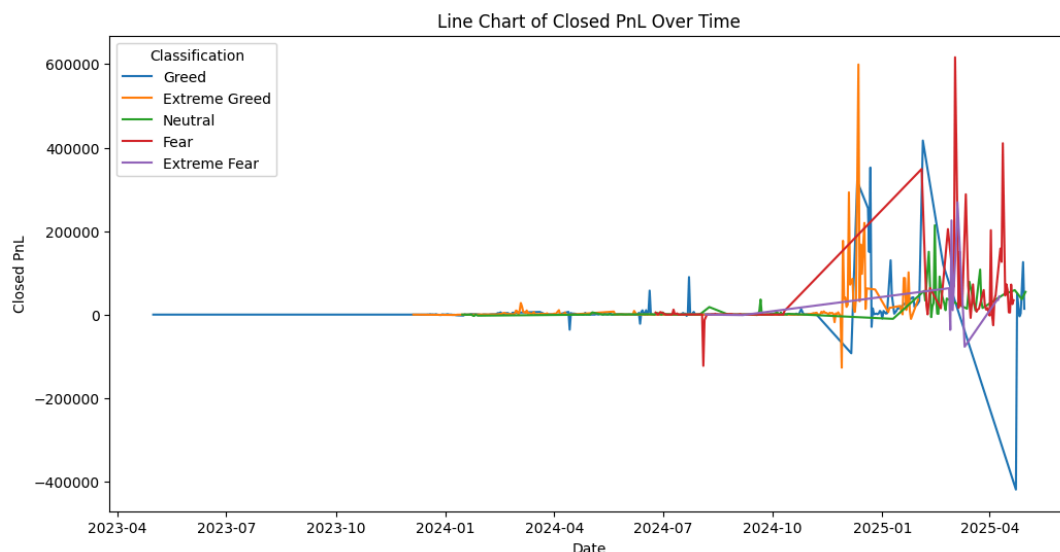
- Exploring datasets: Checked data statistics
- Data Cleaning: Checked for duplicate or missing rows
- Data Preprocessing: Converted time to date, grouped trader data and merged the two datasets.
- Exploratory Data Analysis: Combined dataset was analyzed visually and statistically to identify patterns.

## **Key Insights:**

1. Profitability (Closed PnL):

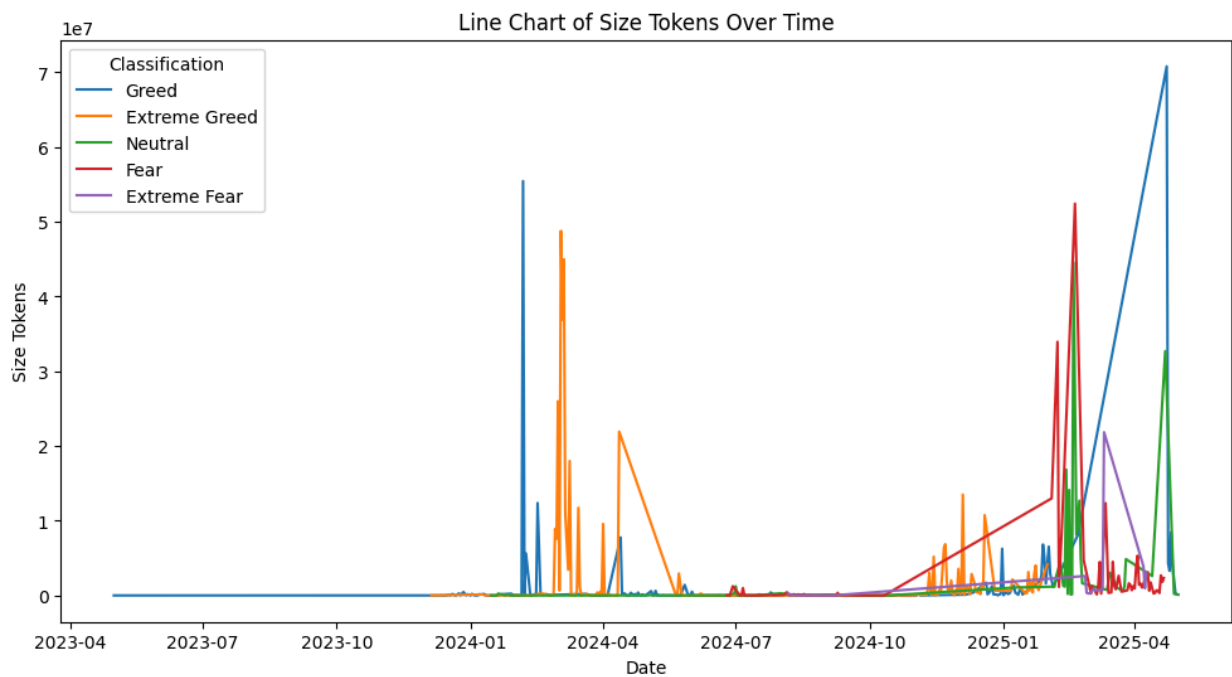
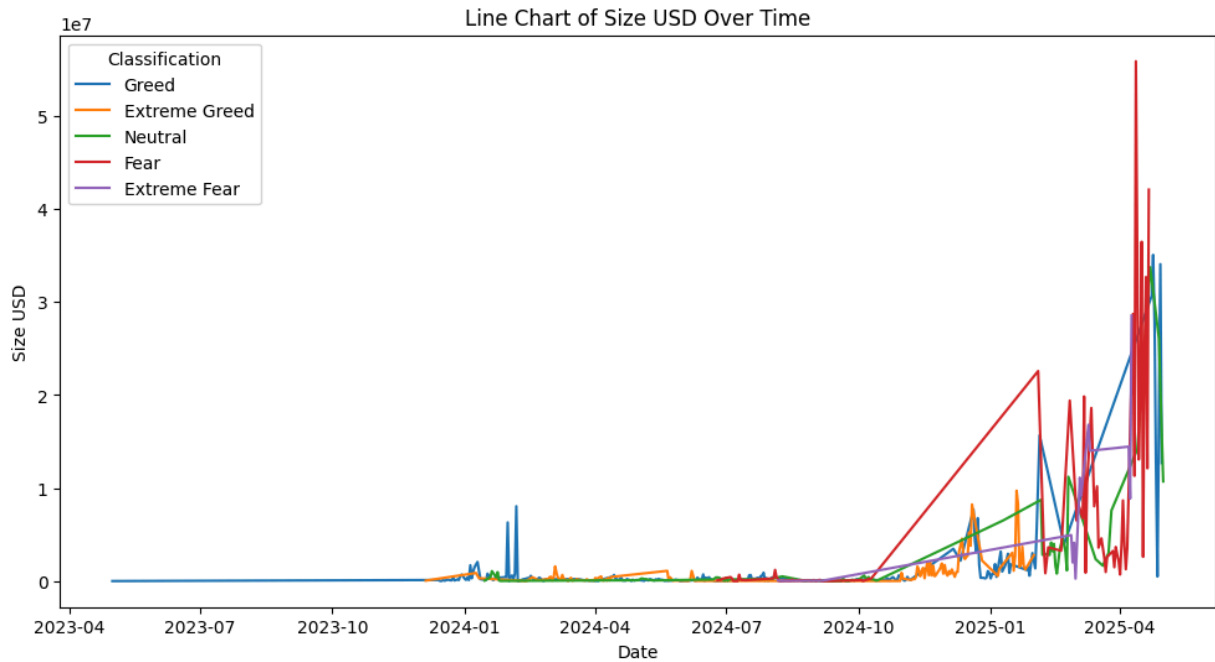
Boxplots showed variation in average daily profitability between Fear and Greed days.

Line trends highlighted spikes in profitability corresponding to certain market shifts.



## 2. Trading Volume:

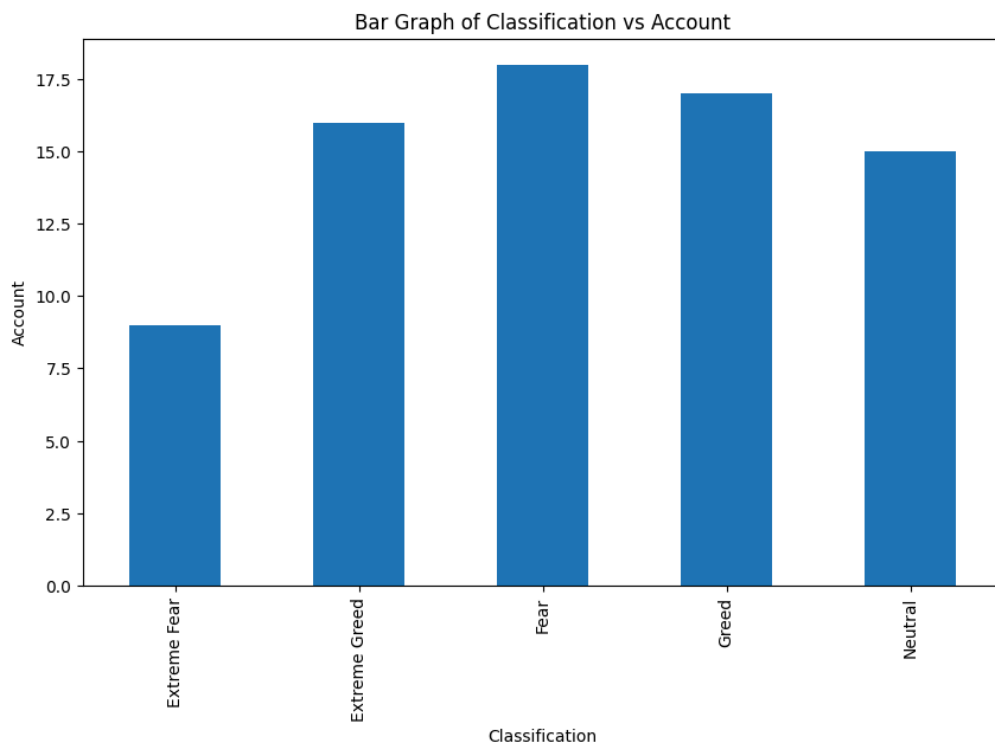
During Greed periods, USD and token trading volumes were significantly higher. Fear periods showed reduced trading activity but sometimes more stable profitability.



### 3. Trader Participation:

The number of active accounts increased during Greed days, indicating broader market participation.

Fewer but often more experienced traders remained active in Fear periods.

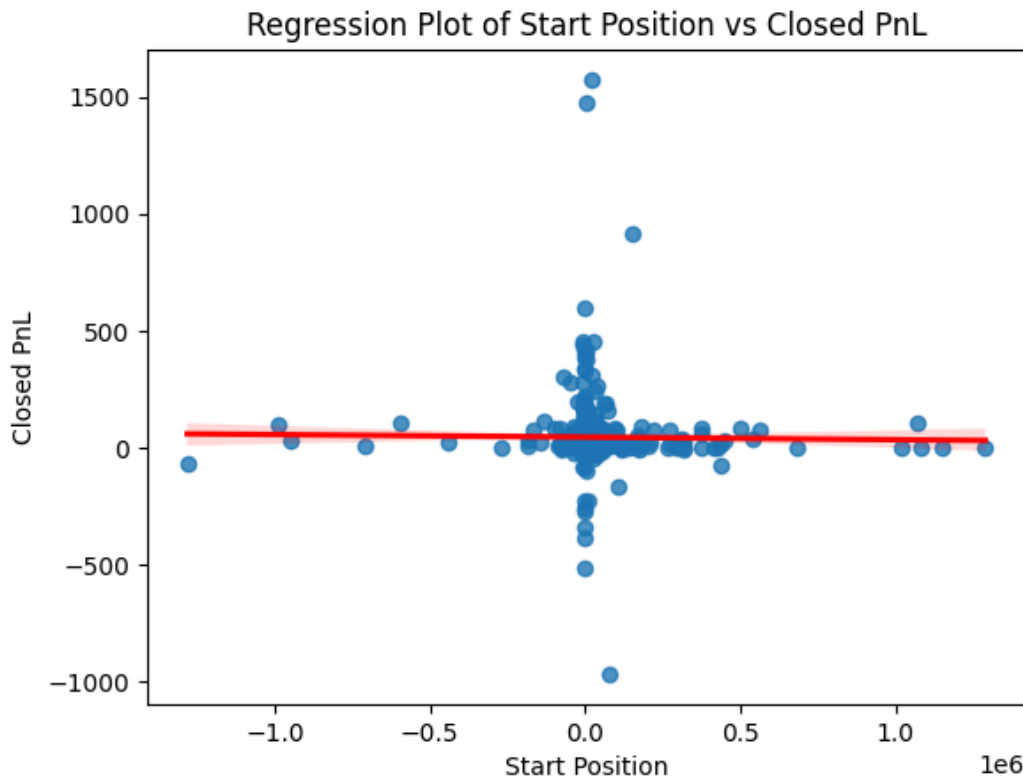


### 4. Position Sizes:

Greed periods were associated with higher average starting positions, suggesting increased risk-taking.

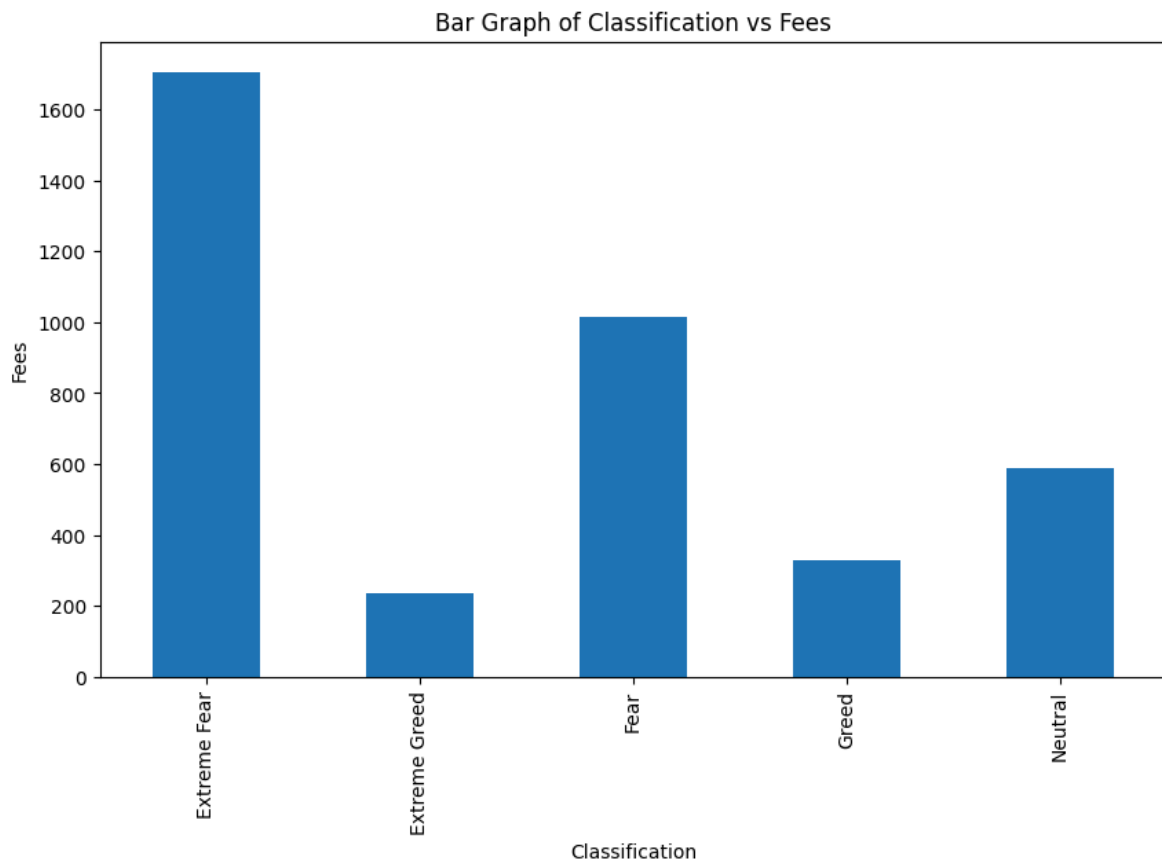


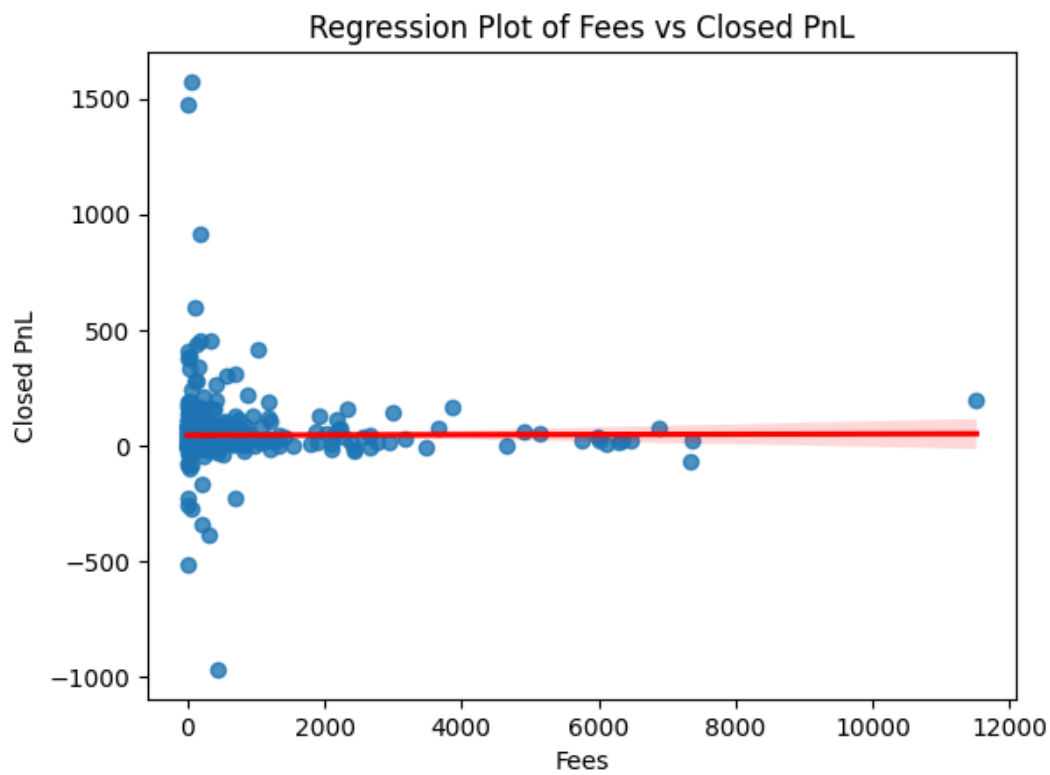
This did not always translate to higher profits, showing evidence of overconfidence.



##### 5. Fees:

Total fees were higher in Fear markets due to greater trading activity.





#### *Conclusion:*

This analysis highlights the impact of market sentiment on trader activity. Greed provides higher volumes, larger positions, and more traders in the market, but the profitability is not guaranteed and can decline due to risk-taking. Fear, on the other hand, even with reduced activity, shows good profitability.