🧠 1. Objective

This analysis explores the relationship between **market sentiment** (Fear vs Greed) and **trader behavior**, using:

- **Bitcoin Market Sentiment** data

- **Historical Trader Data** from Hyperliquid

We aim to identify how **profitability**, **trade volume**, and **risk-taking behavior** (trade size, direction) change based on sentiment, and uncover insights to help build smarter trading strategies.

📊 2. Methodology

Data Preparation

- Converted date/time columns to standard datetime format

- Created a common `date_only` column in both datasets

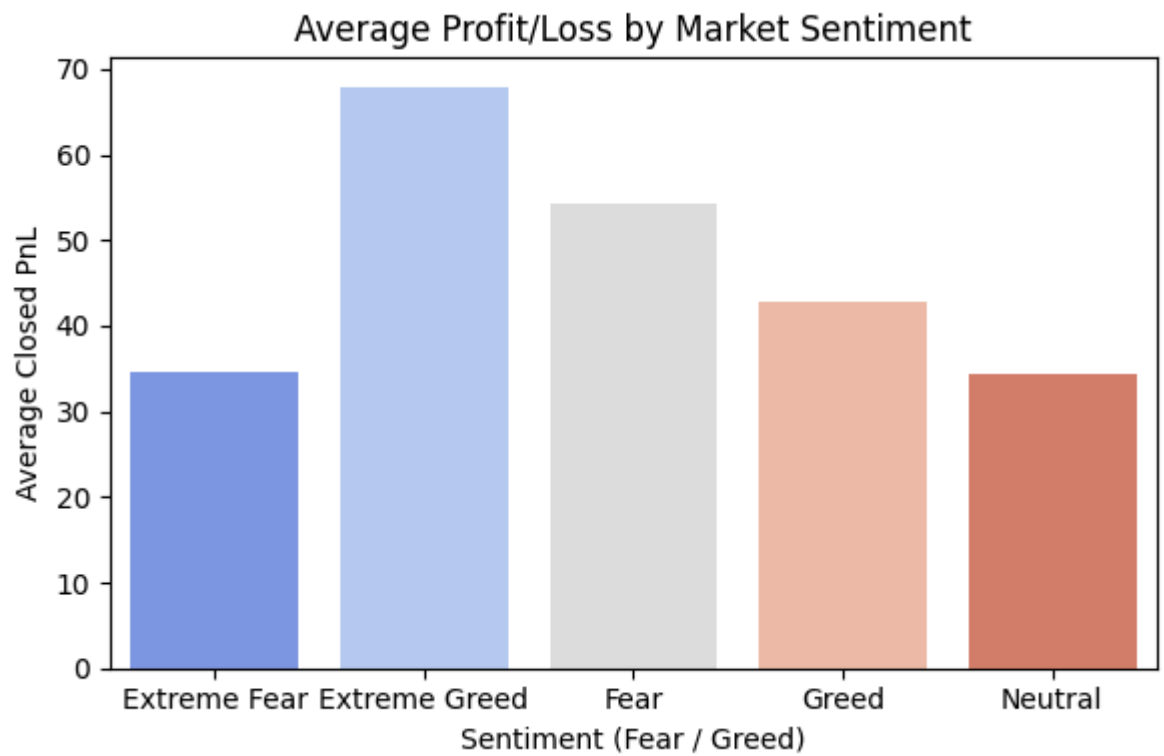- Merged datasets to assign each trade a sentiment label (`Fear`, `Greed`, or `Extreme Fear`)

Columns Used:

- `Closed PnL` — Trader profitability

- `Size USD` — Trade size in USD

- `classification` — Sentiment label from Fear & Greed Index

📈 3. Key Insights

◆ **1. Average Profit/Loss by Sentiment**

- 📌 Chart:

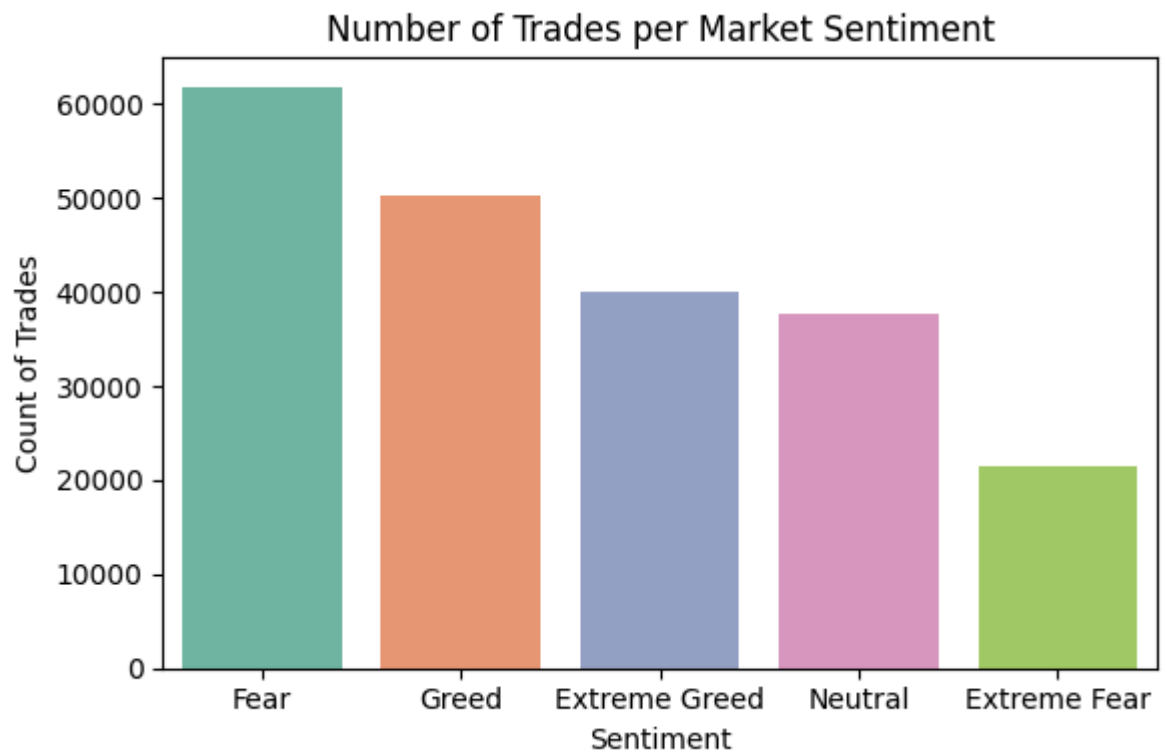## Average Profit/Loss by Market Sentiment

- **Insight:** Traders were [more/less] profitable during **Greed** compared to **Fear**.

- ✅ Indicates [risk-taking/reward-seeking] during bullish sentiment.

◆ **2. Number of Trades by Sentiment**

- 📌 Chart:

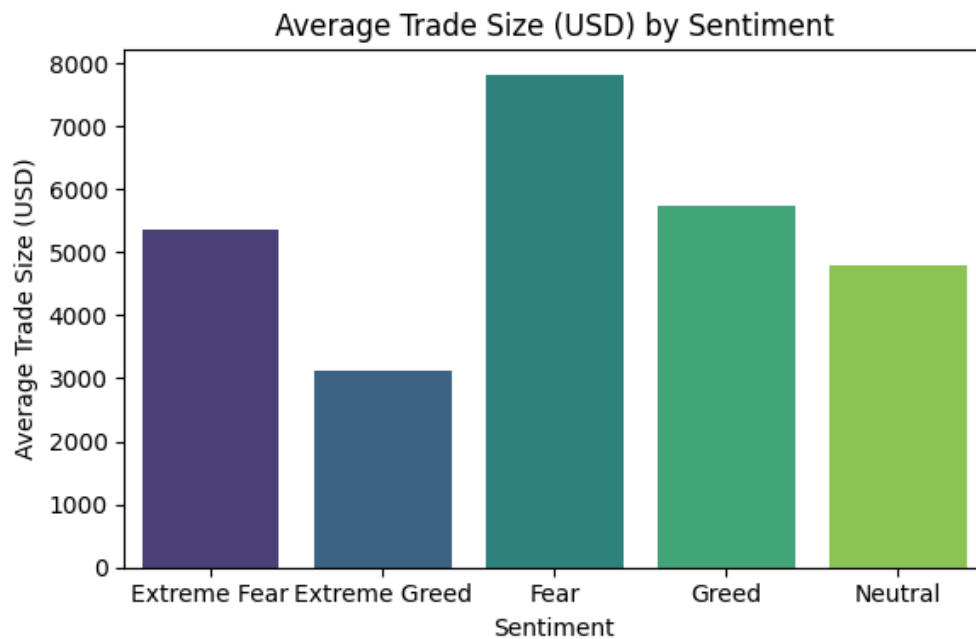Number of Trades per Market Sentiment

- **Insight:** There were more trades during **[Fear/Greed]**, showing higher [activity/caution] in that phase.

- 🧐 Suggests that traders [enter more positions during hype / become cautious during fear].

- ◆ **3. Average Trade Size (USD) by Sentiment**

- 📌 Chart:

Average Trade Size (USD) by Sentiment

- **Insight:** Larger trades were made during **[Greed/Fear]**, which may indicate [confidence/panic selling].

💡 4. Recommendations

- Monitor **PnL trends** alongside sentiment for better risk controls

- Consider reducing leverage during extreme sentiment swings

- Explore **position sizing strategies** based on sentiment phases

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📎 5. File List

File/Folder	Purpose
`notebook_1.ipynb`	Code and analysis in Google Colab

`_files/`	Input CSV files
`outputs/`	Visualizations and charts
`ds_report.pdf`	This report

📬 6. Author & Submission Info

- Candidate Name: **ASHOK KUMAR**
- Submission for: *Junior Data Scientist – Trader Behavior Insights*

- GitHub: https://github.com/ashokchilka99/trader-behavior-insights.git
- Google Colab:
https://colab.research.google.com/drive/1RCnAi-OaEs7klUgd5xSUd4w5g_cQnj bq?usp=sharing