**Trader Behavior & Market Sentiment Analysis**

This project analyzes the relationship between trader behavior and overall market sentiment to uncover hidden trends that can guide smarter trading strategies.

**Objective**

* Investigate how key trading metrics such as **profitability**, **risk**, and **volume** align or diverge from market sentiment signals of **fear vs greed**.
* Use merged data combining trader transaction records and sentiment scores to explore potential predictive signals.
* Identify actionable insights that can inform more effective trading decisions.

**Data**

* **Trader Data:** Contains detailed trade information including executed prices, position sizes, profit & loss, fees, and timestamps.
* **Sentiment Data:** Market sentiment indicators categorized as fear or greed, with associated sentiment scores over time.
* **Merged Dataset:** Combined and cleaned dataset aligning trade events with corresponding sentiment values by timestamp.

**Analysis Approach**

* Calculated key trading behavior metrics:
  + **Profitability ratio:** Closed PnL relative to trade size
  + **Risk proxy:** Absolute token size traded
  + **Trade volume:** USD value of trades
* Aggregated sentiment data hourly and merged with trading records.
* Visualized distributions and outliers of trading metrics.
* Explored correlations between trading metrics and sentiment scores.
* Examined lead-lag relationships between sentiment changes and profitability.
* Note: Leverage analysis was not possible due to missing explicit leverage or margin data.

**Outcomes**

* Identified patterns where trading profitability and risk exposure correlate with shifts in market sentiment.
* Provided foundational insights for integrating sentiment signals into trading strategy development.