## **Title**: Analyzing Trader Behavior Against Market Sentiment

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This analysis explores how trader behavior (profitability, volume, direction) changes depending on Bitcoin market sentiment—specifically, during periods of *Fear* vs *Greed*. Using two datasets—one with historical trader transactions and one with market sentiment—we merged and analyzed behavior patterns to discover signals that could lead to smarter trading strategies.

#### **📌 2. Methodology**

* Loaded and cleaned two datasets:  
  + Trader behavior (execution price, size, profit/loss)
  + Market sentiment (date-wise classification: Fear or Greed)
* Merged the datasets using the date field
* Performed exploratory data analysis (EDA) using Python (Pandas, Seaborn)
* Created visualizations to compare behavior in different sentiment states

#### **📌 3. Key Insights**

* **Profitability**: Traders had slightly higher profits during *Greed*, but there were more extreme losses and profits during *Fear*.
* **Trade Volume**: Trade sizes (in USD) were generally higher during *Greed*, indicating more aggressive trading.
* **Side (Long/Short)**: Long trades dominated *Greed*, while short trades increased during *Fear*.
* **Coins**: BTC and ETH showed consistent profitability across both sentiments. Altcoins had more varied performance.

#### **📌 4. Conclusion**

There is a strong connection between trader behavior and market sentiment. Traders tend to:

* Take more risk during *Greed* (larger positions, long trades)
* Be more cautious or speculative during *Fear* (short trades)

These insights can help in building automated sentiment-aware trading strategies.

#### **📌 5. Recommendations**

* Use real-time sentiment classification as a trading signal
* Adjust trade size or leverage based on fear/greed
* Build dashboards that monitor sentiment and alert when shifts occur