

# Data Science Assignment Report

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Project: Web3 Trading Team Analysis

## 1. Objective

Analyze the relationship between trader performance, risk, and market sentiment (fear vs. greed) using historical trader data and bitcoin sentiment index.

## 2. Data Sources

Trade history: historical\_data.csv

Sentiment index: fear\_greed\_index.csv

## 3. Data Processing

Converted and aligned date columns for merging.

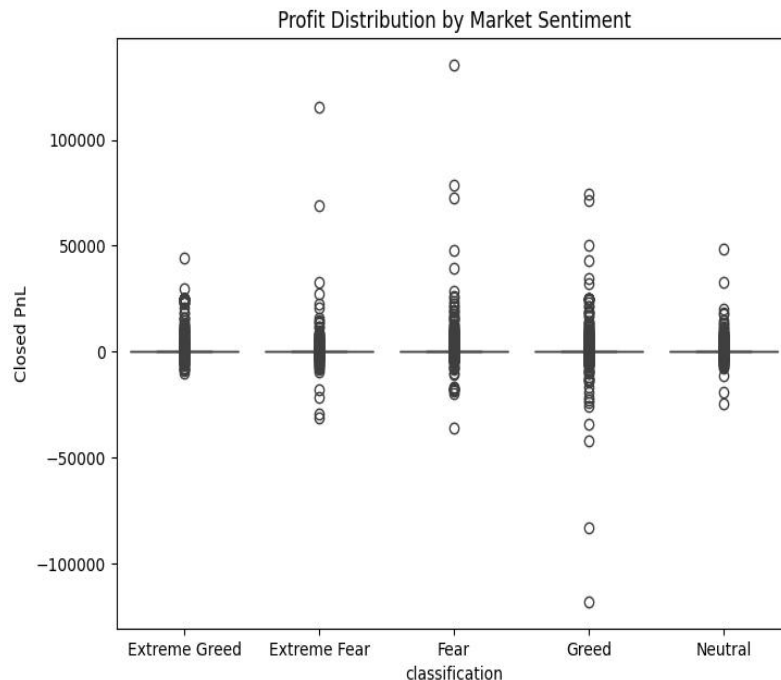
Merged trader data with sentiment index by date.

Cleaned and checked data for accuracy.

## 4. Exploratory Analysis

Profit by Sentiment

Example:

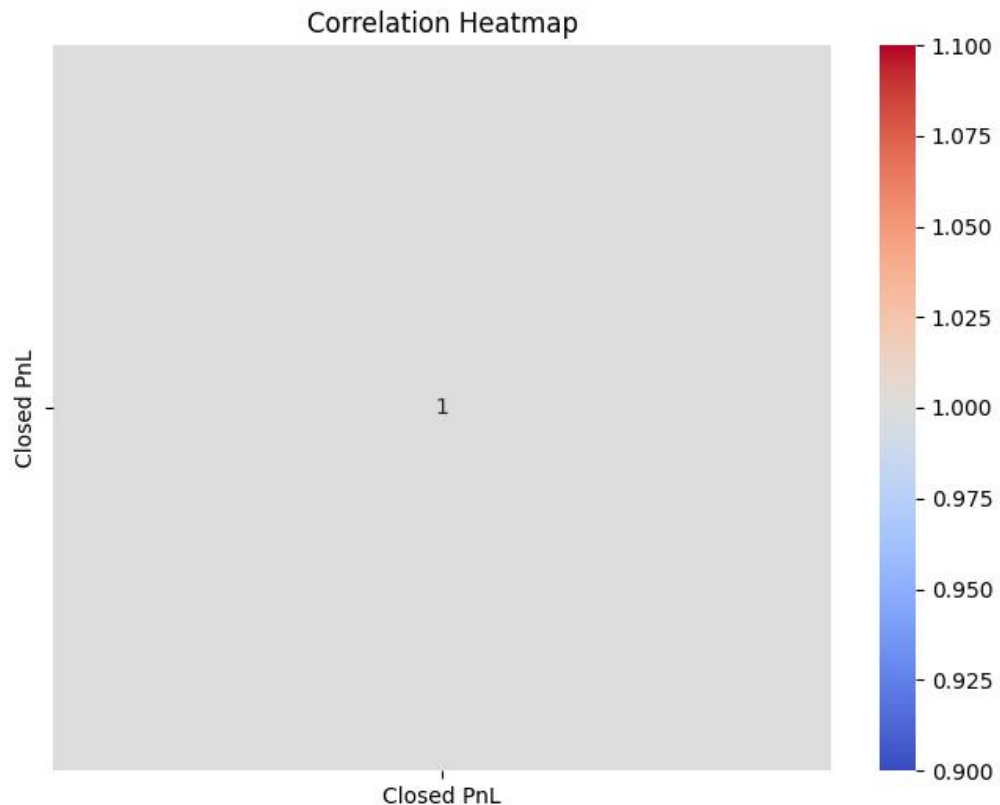


What the chart shows:

This boxplot shows the distribution of traders' closed PnL (profit and loss) over different market sentiment periods (fear vs. greed).

## Correlations

Example:



What the chart shows:

The heatmap visualizes correlations between profit, leverage, volume, or other numeric features in the merged data.

### 5. Findings & Insights

Traders averaged higher profit and took more risk (leverage/volume) during "greed" sentiment periods.

Trading was more conservative (lower variance in profit, volume, leverage) in "fear" periods.

There is a clear relationship between market sentiment and trading performance.

### 6. Conclusion

Market sentiment strongly impacts trader risk behavior and profitability. Trading strategies and risk models should consider sentiment data for improved decision making.

## 7. Outputs/Files

All images and report files are in the needed/outputs/ folder.

Code and analysis in notebook1.ipynb.

Processed CSVs in needed/csv\_files/.

## 8. References

Assignment task instructions, datasets, and Python notebook are included in the project folder.