## 1. Market Sentiment Frequency

**Chart Type**: Countplot  
**Data Source**: Fear & Greed Index (classification column)

This chart shows how frequently different market sentiments like Fear, Greed, Extreme Fear, and Extreme Greed occur over the dataset.

The most frequent sentiment is **Fear**, indicating risk-averse behavior dominates.

**Extreme Greed** occurs the least.

This sets the psychological backdrop for understanding trader behavior.

## 2. Fear & Greed Index Over Time

**Chart Type**: Lineplot  
**Data Source**: Fear & Greed Index (date, value, classification)

The chart visualizes how the Fear & Greed score (ranging from 0 to 100) changes over time, color-coded by classification.

Sentiment **fluctuates significantly** across the timeline.

Sharp dips indicate market panic (Extreme Fear), while peaks suggest optimism (Greed).

Important for aligning behavioral trading data with market emotion trends.

## 3. Closed PnL Distribution

**Chart Type**: Histogram  
**Data Source**: Trader Data (Closed PnL)

Shows the spread of profit and loss across all trades:

Most trades are clustered around **small gains or losses**.

Some trades show large profits or losses (outliers).

This provides a general picture of trading profitability and risk exposure.

## 4. Profit Ratio Distribution (PnL / Size USD)

**Chart Type**: Histogram  
**Data Source**: Derived (Closed PnL / Size USD)

Calculates how much profit was made per dollar invested.

Most ratios are **close to zero**, implying moderate or no profit.

High ratios may indicate **high leverage** or very successful trades.

This metric is used as a proxy to assess trading **efficiency and risk**.

## 5. Profit vs Volume Category

**Chart Type**: Boxplot  
**Volume Categories**:

Low (< $100)

Medium ($100–$999)

High (≥ $1000)

Compares profits across different trade volumes:

**Low-volume trades** tend to have tighter, safer profit ranges.

**High-volume trades** show a wider spread, indicating **higher risk and reward**.

This helps reveal how trade size impacts outcome.

## 6. Profit by Side (BUY/SELL)

**Chart Type**: Boxplot  
**Data Source**: Side, Closed PnL

Analyzes profitability based on whether the trade was a **BUY** or **SELL**:

Differences may arise due to **market trend**, **timing**, or **bias**.

One side may consistently outperform the other.

Useful for evaluating directional effectiveness in trading strategies.

## 7. Profit by Direction

**Chart Type**: Boxplot  
**Data Source**: Direction, Closed PnL

Shows how profit varies based on declared **Direction** (Buy/Sell):

Provides a second layer of analysis compared to Side.

Helps validate whether **directional intent** leads to better/worse outcomes.

Useful for understanding trader behavior intent vs result.

## 8. Position Change vs Closed PnL

**Chart Type**: Scatterplot  
**Data Source**: Derived (Size Tokens - Start Position)

Shows how the change in position size relates to profit/loss:

Large changes can be associated with **higher volatility** in outcomes.

Smaller position changes tend to result in **more stable profits**.

A key visualization to understand **trader aggressiveness or leverage** usage.