**Analysis of Binance Accounts Based on Historical Trade Data**

**Objective:**To analyze historical trade data from various Binanceaccounts over 90 days and rank them based on financial performance metrics.

**Methodology:**

1. **Data Cleaning and Parsing:**
   * Loaded the dataset containing trade histories.
   * Parsed the JSON strings in the Trade\_History column to extract structured trade information.
2. **Financial Metrics Calculation:**
   * Calculated key performance metrics for each account, including:
     + ROI (Return on Investment): Indicates the percentage gain or loss relative to the initial investment.
     + PnL (Profit and Loss): The net profit or loss realized from trades.
     + Sharpe Ratio: Measures risk-adjusted returns by comparing average returns to standard deviation.
     + Maximum Drawdown (MDD): The largest drop from a peak to a trough in the account's equity curve.
     + Win Rate: The percentage of trades that resulted in a profit.
     + Win Positions: The total number of profitable trades.
     + Total Positions: The total number of trades executed.
3. **Ranking Algorithm:**
   * Assigned weights to each metric based on importance and calculated a composite score for each account:
     + ROI: 30%
     + PnL: 25%
     + Sharpe Ratio: 20%
     + Maximum Drawdown: 15% (lower values are better)
     + Win Rate: 10%
   * Ranked accounts based on the composite score, with higher scores indicating better performance.
4. **Top 20 Accounts:**
   * Extracted the top 20 accounts based on their composite scores.

**Findings:**

* **The top-performing account had the highest score of 18,108.51, indicating superior ROI, PnL, and risk-adjusted returns.**
* **Accounts with higher Sharpe Ratios and lower Maximum Drawdowns tended to rank better, reflecting consistent and stable performance.**
* **The top accounts demonstrated strong profitability with minimal drawdowns, highlighting their effective trading strategies.**

**Assumptions:**

* **The data is assumed to be accurate and representative of each account's trading performance over the specified period.**
* **Metrics are calculated based on available trade data and may not capture external factors influencing account performance.**