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## Data Science/ Analytics Intern – Round-0 Assignment (Trader Performance vs Market Sentiment)

Hello
Thanks for applying for the **Data Science Intern** role at **Primetrade.ai**.

As the first step in the hiring process, please complete the short assignment below. Candidates who meet the acceptance criteria will be shortlisted for an interview.

**Expected effort:** ~2–3 hours
**Deadline:** Submit within **2 days** of receiving this email *(If you need 1–2 extra days, reply with your ETA.)*

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# Objective

Analyze how **market sentiment (Fear/Greed)** relates to **trader behavior and performance** on Hyperliquid. Your goal is to uncover patterns that could inform smarter trading strategies.

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# Datasets

You will work with 2 datasets:

### 1) Bitcoin Market Sentiment (Fear/Greed)

Columns: `Date`, `Classification` (Fear / Greed)
Link: *https://drive.google.com/file/d/1PgQC0tO8XN-wqkNyghWc_-mnrYv_nhSf/view?usp=sharing*

### 2) Historical Trader Data (Hyperliquid)

Includes fields like: `account`, `symbol`, `execution price`, `size`, `side`, `time`, `start position`, `event`, `closedPnL`, `leverage`, etc.

Link: https://drive.google.com/file/d/1IAfLZwu6rJzyWKgBToqwSmmVYU6VbjVs/view?usp=sharing

Please check for the download symbol in the left link

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# Tasks (What to do)

## Part A — Data preparation (must-have)

1. Load both datasets and document:
    - number of rows/columns
    - missing values / duplicates
2. Convert timestamps and align the datasets by **date** (daily level is fine).
3. Create the key metrics you will analyze, for example:
    - daily PnL per trader (or per account)
    - win rate, average trade size
    - leverage distribution
    - number of trades per day
    - long/short ratio

## Part B — Analysis (must-have)

Answer these questions with evidence:

1. Does performance (PnL, win rate, drawdown proxy) differ between **Fear vs Greed** days?
2. Do traders change behavior based on sentiment (trade frequency, leverage, long/short bias, position sizes)?
3. Identify 2–3 segments (examples):
    - high leverage vs low leverage traders
    - frequent vs infrequent traders
    - consistent winners vs inconsistent traders
4. Provide at least **3 insights** backed by charts/tables.

## Part C — “Actionable output” (must-have)

Propose **2 strategy ideas** or “rules of thumb” based on your findings.
Example: “During Fear days, reduce leverage for segment X; increase trade frequency only for segment Y.”

## Bonus (optional)

- Simple predictive model:
    - Predict next-day trader profitability bucket or volatility of PnL using sentiment + behavior features
- Clustering traders into behavioral archetypes
- A lightweight dashboard (Streamlit) to explore results

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# Deliverables (What to submit)

Please submit **one** of the following:

### Option 1 (Preferred): GitHub repo

Include:

- Notebook (`.ipynb`) or script
- `README.md` with setup + how to run
- Output charts/tables
- A short write-up (max 1 page) OR a markdown section summarizing:
    - methodology
    - insights
    - strategy recommendations

### Option 2: Google Drive folder

Same contents as above.

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# Evaluation criteria (How we shortlist)

We score based on:

- Data cleaning + correctness of merges/alignment
- Strength of reasoning (not just plots)
- Quality of insights (actionable, not generic)
- Clarity of communication (structured write-up)
- Reproducibility (clean notebook, clear steps)

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# How to Apply

Email your **resume + submission link** to:

- hello@anything.ai
- joydip@anything.ai
- chetan@primetrade.ai
  sonika@primetrade.ai

**Subject:** `Junior Data Scientist – Trader Behavior Insights`

We'll notify shortlisted candidates by Saturday after submission.

Thanks,
Sonika
Primetrade.ai Hiring Team

Whitelist : sonika@primetrade.ai , sonika@bajarangs.com emails to avoid missing of notifications

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