National Bank Bias Detector Challenge

Retail traders often lose money not because of poor market knowledge, but because of **behavioral biases** that distort decision-making. Your mission is to build a tool that helps traders **understand their own behavior**, detect harmful patterns in their trading history, and receive **personalized insights** to improve future performance.

You will create a prototype "Bias Detector" that analyzes uploaded or mock trading data, identifies common psychological biases, and presents clear, actionable feedback.

What you Will Build

1. Trading History Input

Teams must support **one or more** of the following:

- File upload (CSV/Excel) with trading records:
  - mock datasets are provided for your training
  - a new dataset will be given to you during the judging process (it will be 20 times larger than the mock datasets)
- A simple UI form to add sample trades

Trading history should include fields such as:

- Timestamp
- Buy/sell
- Asset
- Quantity
- Entry & exit price
- P/L
- Account balance

Bias Detection Components

Your tool should automatically analyze the data and identify *at least the following* behavioral biases:

1. Overtrading

Identify patterns like:

- Excessive number of trades relative to balance size
- Frequent switching of positions
- Trading after large losses or wins
- Time-based clustering (e.g., opening too many trades in a single hour)

Goal: Show users when they may be trading too often, ignoring strategy discipline.

2. Loss Aversion

Detect behaviors such as:

- Letting losing trades run too long
- Closing winning trades too early
- Unbalanced risk/reward ratios
- Higher average loss size than average win size

Goal: Highlight where fear of losses may be impairing rational decision-making.

3. Revenge Trading

Identify emotional and reactive patterns:

- Opening larger trades immediately after a loss
- Increased risk-taking following negative P/L streaks

Goal: Help users recognize when they're trying to "win back" losses impulsively.

Feedback & Recommendations

The tool should provide:

- **Bias summaries** ("You may be overtrading during high-volatility periods.")

- **Graphical insights** (charts, timelines, heatmaps)

- **Personalized suggestions**, such as:

    o   Daily trade limits

    o   Setting stop-loss discipline

    o   Cooling-off periods

    o   Journaling prompts for trading psychology

OPTIONAL:

- Identify more kinds of biases

- Portfolio optimization suggestions

- Sentiment analysis of trader notes

- Risk profile scoring

- AI model predicting future bias-triggering situations

- An AI "trading coach" chatbot

- Stress or emotional state tagging

Judging Criteria

⭐ **1. Performance**

- Speed of the analysis

- Scalability of your solution

⭐ 2. Creativity

- Innovative UX/UI solutions

- Unique visualizations

- Smart use of AI/ML or rule-based detection

- Novel ways to make behavioral insights engaging

⭐ 3. Behavioral Finance Insight

Judges will look for:

- Accurate understanding of behavioral biases

- Meaningful signals derived from real trader patterns

- Clear explanations that make sense to a non-expert user

- Depth of psychological interpretation

⭐ 4. Personalization

The best projects will:

- Adapt insights to the individual trader

- Provide tailored recommendations (not generic tips)

- Support dynamic feedback based on trading history