JAIn STREET

INSOLVENT finance Club

SOI'25 Algorithmic Trading

Submission Deadline: 14th July 2025
Timeline: A 2-week Competition

1 Introduction

INSOLVENT presents a 2-week hands-on Stock Algo Trading Competition for rookie quants. Algorithmic trading uses pre-programmed rules to "execute trades at speeds a human trader can't achieve."

New to Algo Trading? No worries—we've got you covered!
Join the **Discord server**, for a step-by-step procedure along with high-quality resources, and capture your profit.

2 Overview

- **Goal:** Build a robust automated stock trading algorithm with maximum return.
- Students will be given 10 stocks and develop a statistically backed algorithm which gives good returns on majority of them.
- **Data-set** Market CSV, which consist of historical stock price data in OHLCV format.
- Using Python libraries, you have to build your algorithm over the CSV. You can use Google Colab or Jupyter Notebook.
- After building your algorithm, backtest it on historical data to estimate how it would have performed.
- At the end, compute Value-at-Risk (VaR).
- **Resources link** provides comprehensive materials for strategy evaluation and risk analysis.

3 Some Points to Keep in Mind

- While building your algorithm, a high return may still accompany a high VaR, indicating huge losses during downturns (is your strategy accounting for that?).
- Many traders create algorithms that perform well on historical data but overfit, and when deployed in real-time markets, fail miserably.
- The mindset should be: *"Data-driven, systematic thinking. There are no emotions in trades."*

4 Rules & Guidelines

- The tools and resources will be provided via Discord. Join it for more info.
- The Discord server also has a *Discussions* section, where you can ask doubts and request hints for errors.
- This competition is a **mandatory project** for all new club members.
- This is the entry point for club recruitment, as well as for the inter-IIT Quant Problem Statement.
- Any changes or mishandling of the data will be considered incorrect, and your submission will not be accepted.
- Final performance will be tested on a completely new dataset, and winners will be announced based on the judging criteria. (account for over-fitting)
- Your strategy should not have look ahead bias.
- Strategy evaluation should include backtesting with proper risk analysis and variance assessment.
- Calculate strategy drawdowns, win rate, maximum drawdown, and Sharpe ratio for comprehensive analysis.
- Focus on volatility of returns and risk-to-reward ratio for advanced risk analysis.
- You will be having an initial amount of **100000**.

5 Bonus Section

- Using fundamental analysis, develop industry-specific algorithms for enhanced performance evaluation.

6 Judging Criteria

- Uniqueness & out-of-box thinking – 20%
- Backtesting (with the condition it doesn't overfit new data) – 20%
- VaR performance – 20%
- Report – 15%
- Sharpe Ratio – 25%

7 Submission Guidelines

- Submit **one .zip file** following this structure:

```
{name}.zip
 Strategy1
    Report.pdf
    Strategy1.ipynb
 Strategy2
     Report.pdf
     Strategy2.ipynb
```

- Any additions or changes will be communicated via Discord & Mail.