QUANT-A-THON

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Problem Statement

Design and implement a **momentum trading strategy** in Python on the following stocks:

- **Apple Inc. (AAPL)**
- **Facebook/Meta (META)**
- **Tesla (TSLA)**
- **JP Morgan (JPM)**
- **Amazon (AMZN)**

Requirements

Data Requirements

- Use **daily price data from 2015-2024** for strategy development and backtesting
- Divide the dataset into training and testing periods

Strategy Implementation

- Implement **a momentum-based trading strategy** in Python
- Include clear entry and exit rules
- **Document your approach to calculating momentum signals**

Performance Evaluation

Strategies will be evaluated based on the following key metrics:

- **Returns**
- **Sharpe Ratio**
- **Drawdown**
- **Alpha**
- **Beta**

Submission Format

- Submit well-documented Python code with clear comments
- Include visualization of performance metrics
- Provide a brief report explaining your strategy's logic and results

Bonus Points (Optional)

- Implement machine learning algorithms to enhance the momentum strategy
- Deploy your strategy for paper trading on QuantInsti Blueshift
- Include out-of-sample testing results

Important Note

LLM-generated content is not encouraged. Participants should demonstrate their own understanding and implementation skills.

Blueshift Implementation Guide

To implement and test your strategy on Blueshift:

1. Register on the platform: https://blueshift.quantinsti.com/
2. Familiarize yourself with the available templates on the home page to understand the Python structure
3. Reference the Python libraries supported on Blueshift: https://blueshift.quantinsti.com/api-docs/howtos.html#what-is-the-python-support-on-blueshift
4. For paper trading (bonus points), use the "Go Live" button and select Alpaca Paper trading as broker

Evaluation Criteria

Strategies will be **primarily ranked based on the quantitative metrics** (Returns, Alpha, Beta, Sharpe, Drawdown), with additional consideration for:

- Code quality and documentation
- Originality and innovation in approach
- Implementation of best practices in algorithmic trading

Submission Deadline

11:30 PM
17-April-2025