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Atreyu Trading

Backtesting Your Quant Strategies Using IBKR's TWS API

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QUANT TRADING & BACK TESTING

Quant Trading is the process of using a systematic set of trading rules (followed without discretion) that have an expected outcome. It is a testable and systematic approach to trading.

Back Testing is the process of evaluating these trading rules against historical data and recording their performance and P&L with and without costs.

IN THE WEBINAR

- In this webinar we will show how to build an automated strategy from initial back-testing with historical data to paper trading and finally live trading.
- We will explore the steps in creating a simple trading signal based on an SMA (Simple Moving Average). It places a buy order as the current price rises above the SMA and a sell order as it falls below.
- As part of implementing this strategy we will create controls to ensure that only one order is active at any time by checking the order status and the current position.
- The objective of this webinar is for you to have a clear understanding of the steps to gather data, run a back test, build the controls to run a strategy in paper and live trading and view the results on the TWS front-end.

PART I HOW TO SETUP YOUR DEVELOPMENT AND TRADING ENVIRONMENT

- Step 1: Create a python environment and install the Backtrader

```
python3 -m venv ./env  
source ./env/bin/activate  
pip install backtrader
```

- Step 2: Download and install the latest TWS API - <https://interactivebrokers.github.io/#>
- Step 3: Download and install the Atreyu Backtrader API - <https://github.com/atreyuxtrading/atreyu-backtrader-api>

Reference:

<https://www.tradersinsight.news/ibkr-quant-news/back-testing-on-ibkr-with-backtrader-part-i/>

PART II HOW TO USE IBKR HISTORICAL DATA WITHIN BACKTRADER

- Step 1: Create a Test Printer
- Step 2: Retrieve Simple BID_ASK Historical Data
- Step 3: Using IB Historical Data to Drive a Strategy

Reference:

<https://www.tradersinsight.news/ibkr-quant-news/retrieving-historical-data-from-ibkr/>

PART III HOW TO USE VARIOUS TYPES OF REAL-TIME DATA TO RUN STRATEGIES

- Step 1: Retrieve 5-Second Real-time Bars from IB
- Step 2: Use Real-time Tick by Tick Data

Reference:

<https://www.tradersinsight.news/ibkr-quant-news/ibkr-market-data-from-real-time-bars-to-ticks/>

PART IV & PART V HOW TO BACK TEST, PAPER TRADE AND GO LIVE!

- Step 1: Create a Simple Buy/Sell Strategy
- Step 2: Paper Trading on IBKR
- Step 3: Onward to Live Trading

References:

<https://www.tradersinsight.news/ibkr-quant-news/from-back-test-to-paper-trading/>

<https://www.tradersinsight.news/ibkr-quant-news/from-paper-trading-to-real-trading-monitoring-debug-and-go-live/>

DETAILED TUTORIAL LINKS AND GITHUB REPOSITORY

<https://www.tradersinsight.news/category/contributors/atreyu-trading-services/>

<https://github.com/atreyuxtrading/atreyu-backtrader-api>

“Back testing is a tool to reject a strategy, not to accept it.”

Q&A

Please contact info@atreyugroup.com for questions or suggestions for future webinars

Visit the IBKR API Center for Downloads, Resources and Technical Details
<https://www.interactivebrokers.com/en/trading/ib-api.php>