

GoQuant Bootcamp (Coinbase Track)

Program Overview

This bootcamp program encompasses comprehensive implementation of exchange connectivity through the Multiprocessor architecture. The program progresses through four key phases: architectural analysis and system setup, core functionality implementation including authentication and instrument management, development of trading and market operations, and finally system optimization and documentation. Throughout these phases, focus remains on building robust trading capabilities, real-time market data integration, and subscription-based updates, all validated through extensive testing procedures. The implementation emphasizes system stability, error handling, and performance optimization, culminating in a production-ready gateway system with complete API documentation and verified endpoint mappings.

Weekly Structure

Week 1: System setup and MPA study

Objective

Master the MPA architecture and design patterns

Tasks

1. Configure and validate OEMS system environment
2. Analyze AbstractGateway architectural patterns and design principles
3. Examine virtual and pure virtual function implementation strategies
4. Evaluate reference gateway implementation
5. Establish mapping between gateway functions and exchange API endpoints

Key Results

1. Demonstrate comprehensive understanding of gateway architecture through technical review
2. Develop detailed exchange-specific documentation that:
 - a. Maps AbstractGateway functions to corresponding exchange endpoints
 - b. Documents implementation requirements based on reference gateway

Week 2: Gateway Setup, Instruments, Authentication and Error Codes

Objective

Set up the basic gateway with instruments, authentication, error codes operations.

Tasks

1. Implement the functions to get and register instruments from the exchange
2. Set up gateway with basic login functionality with proper authentication methods
3. Implement the logout functionality
4. Design the error code maps for the exchange
5. Extend the testing suite for login operations for the exchange

Key results

1. Complete instrument registration with verified OEMS integration
2. Validated authentication flow with successful login/logout cycles
3. Comprehensive error handling for authentication edge cases
4. Demonstrated system stability under authentication stress testing

Week 3: Private, Public and Data Client Implementation

Objective

Implement Comprehensive Trading, Market Data, and Subscription Functionality

Tasks

Private Client

1. Place order
 - a. Limit and Market Orders
2. Cancel order
 - a. Cancel order by Internal order ID
 - b. Cancel order by exchange order ID
3. Modify Order
4. Private data parser
5. Testing scripts for the above operations

Public Client

1. Order book
2. Last Trades
3. Ticker
4. Public data parser
5. Testing scripts for the above operations

Subscription/Data Client

1. Account Snapshot
2. Position Snapshot
3. Order Update Snapshot
4. Open orders snapshot
5. Testing script to validate the above operations

Key Results

1. Verified implementation of all trading, market data, and subscription operations
2. Comprehensive test coverage with diverse scenarios
3. Demonstrated system reliability through successful test execution

Week 4: Stress Testing, Optimizations, Documentation and Reflection

Objectives

Finalizing the gateway design by stress testing, documentation and reflection on the bootcamp.

Tasks

1. Expand test coverage for edge case handling
2. Develop algorithm testing frameworks
3. Optimize gateway performance and reliability
4. Create comprehensive technical documentation

Key Results

1. Validated gateway implementation with complete test coverage
2. Detailed API endpoint documentation and implementation guide

Roses & Thorns : Reflection Session

A Roses and Thorns reflection is a simple yet effective feedback method where participants share both positive experiences ("roses") and challenges ("thorns") from a given period or project. This balanced approach encourages honest dialogue while ensuring both achievements and areas for growth are acknowledged, making it useful for everything from daily check-ins to project retrospectives.