**Trading Order Board – Solution**

**Requirements**

A trading marketplace has a new requirement to display to its users the demand for silver bars on the market. They would like to have a Trading Order Board' that can provide them with the order summary with orders with the same price merged together and sorted lowest price first for sell orders and highest price first for buy orders.

**How to build**

Use maven command line to run tests and package this application

mvn clean install

**Technologies**

The following technologies used for the ‘Live Order Board’ application:

* Dependency injection – Spring 4 with JSR-330 annotations
* Concurrent Hash Map – In-memory database
* Lombok – Assist with boilerplate code in domain objects
* Junit – Unit testing
* Spring test – Integration testing
* Cucumber – Acceptance testing using Spring and Java
* Mockito – Mocking dependencies
* Hamcrest – For assertion of test results

**Assumptions**

* To get order summary, user must provide the type of order, i.e. SELL or BUY.
* Validation on Order quantity and price are not required at this time.
* Database validation for non-existing or duplicate orders is not required at this time.
* Java doc is only required for client facing interface

**Scenarios**

See the following feature file:

trading-order-board/src/test/resources/

imran.trading.order.board.acceptance.trading-order-board.feature

Scenarios also listed on next page …

**Scenario**: Register a sell order consists of user id, order quantity and price per kg.

Given a sell order with:

|  |  |  |  |
| --- | --- | --- | --- |
| **User id** | **Quantity** | **Price** | **Type** |
| user1 | 3.5 | 306 | SELL |

When the order is registered in the trading order board service

Then the trading order board should provide the following summary for "sell" orders:

|  |  |
| --- | --- |
| **Quantity** | **Price** |
| 3.5 | 306 |

**Scenario**: Cancel a registered order with the given order id.

Given a buy order with:

|  |  |  |  |
| --- | --- | --- | --- |
| **User id** | **Quantity** | **Price** | **Type** |
| user2 | 1.2 | 310 | BUY |

When the order is registered in the trading order board service

And when I cancel this order

Then the trading order board should provide blank summary for "buy" orders

**Scenario**: The sell orders for the same price should be merged together (even when they are from different users). Also the sell orders on trading order board are ordered with lowest prices first.

Given multiple sell orders with:

|  |  |  |  |
| --- | --- | --- | --- |
| **User id** | **Quantity** | **Price** | **Type** |
| user1 | 3.5 | 306 | SELL |
| user2 | 1.2 | 310 | SELL |
| user3 | 1.5 | 307 | SELL |
| user4 | 2.0 | 306 | SELL |

When these order are registered in the trading order board service

Then the trading order board should provide the following summary for "sell" orders:

|  |  |
| --- | --- |
| **Quantity** | **Price** |
| 5.5 | 306 |
| 1.5 | 307 |
| 1.2 | 310 |

And sell orders are ordered with lowest price first

**Scenario**: The buy orders for the same price should be merged together (even when they are from different users). Also the sell orders on live order board are ordered with highest prices first.

Given multiple buy orders with:

|  |  |  |  |
| --- | --- | --- | --- |
| **User id** | **Quantity** | **Price** | **Type** |
| user1 | 3.5 | 306 | BUY |
| user2 | 1.2 | 310 | BUY |
| user3 | 1.5 | 307 | BUY |
| user4 | 2.0 | 306 | BUY |

When these order are registered in the trading order board service

Then the trading order board should provide the following summary for "buy" orders:

|  |  |
| --- | --- |
| **Quantity** | **Price** |
| 1.2 | 310 |
| 1.5 | 307 |
| 5.5 | 306 |

And buy orders are ordered with highest price first

**Code Coverage**

