QS Server design

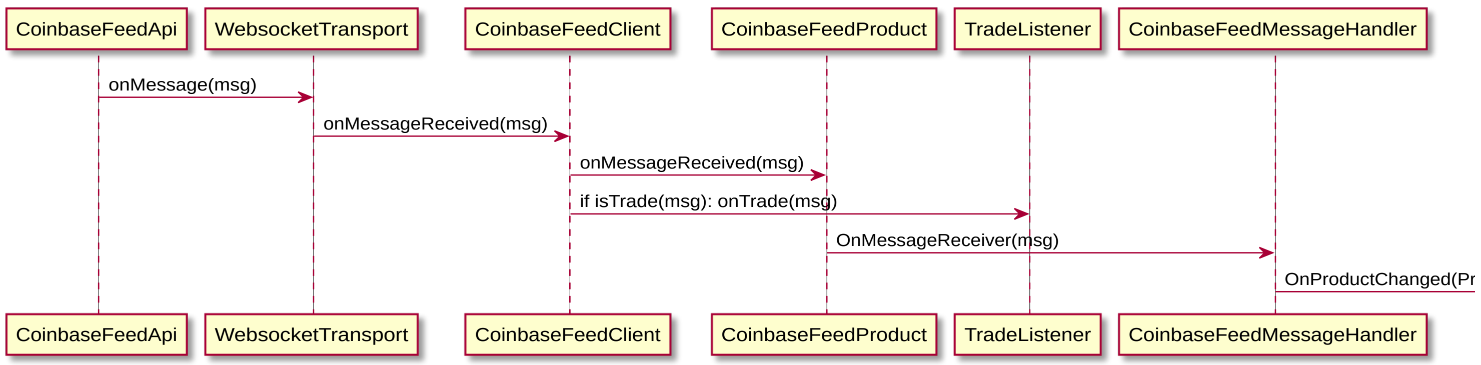
Server is dividen into 4 parts:

1. FeedClient which should provide feed messages for the rest of the system
2. Market (business logic) responsible for synchronization between productIds and clients
3. ClientService responsible for registering and subscibing clients
4. Publishing services implementing publish subscribe pattern for streaming orderbook updates and trade messages

FeedClient side

Coinbase FeedClient sequence diagram

WebsocketTransport feed message reception by MessageReceiver interface. It shows example of implementation for Coinbase



- WebsocketTransport is responsible for Websocket layer and communication between Coinbase/other websocket api with the rest of the qs server
- CoinbaseFeedClient implements MessageReceiver interface and provides initial logic related to the Coinbase api - mainly message dispatching
- CoinbaseFeedProduct implements logic responsib le for ensuring that messages comes in the right order by ensuring that all sequence numbers are consecutive
- CoinbaseFeedMessageHandler creates ProductChanges from messages. It binds generic qs-server business logic with Coinbase specific.

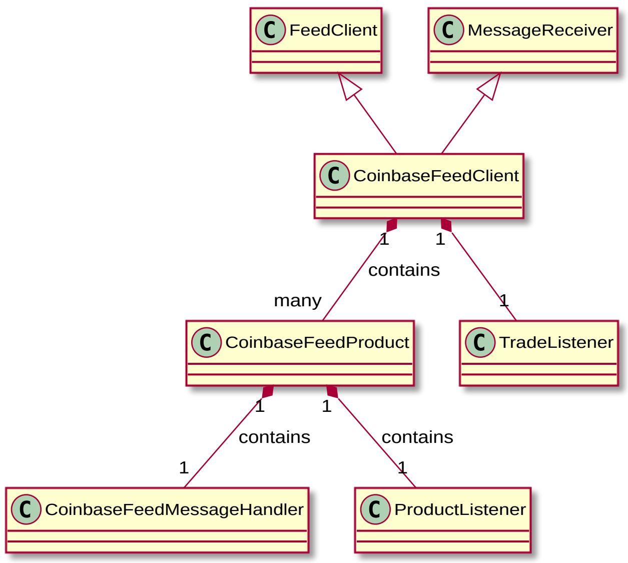
FeedClient class diagram

CoinbaseFeedClient implements FeedClient interface and contains all CoinbaseFeedProducts. On message reception it calls onMessageReceived() only on CoinbaseFeedProduct which listens for received productId.

CoinbaseFeedProduct listens only for one productId and implements logic specific to coinbase api - requesting all orderbook entries at the beggining, queuing messages and ensuring the order of messages by checking sequence number.

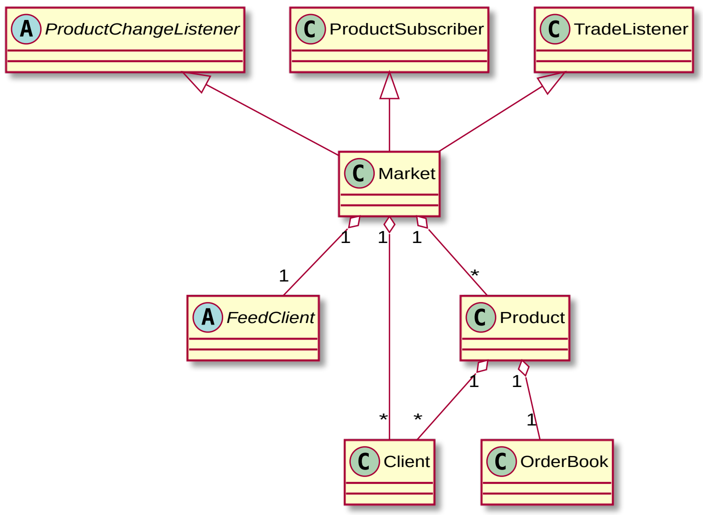
CoinbaseFeedMessageHandler receives coinbase message for specific productId and creates ProductChange from it. Then it notifies Product though ProductChangeListener interface.

Any market api which provides feed messaging might implement FeedClient interface in a similar way and use some part of the existing implementation if possible.



Market class diagram

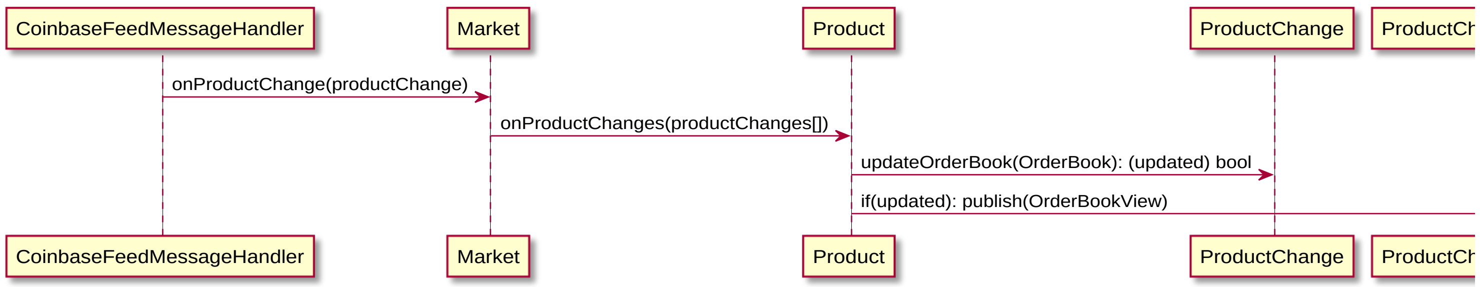
Simple top level class diagram which shows compositions of the main domain parts



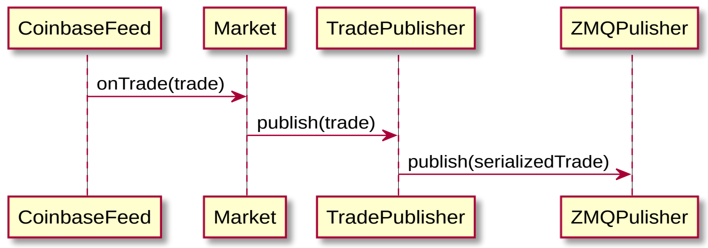
Publisher part:

Classes wchich implements ProductChange interface encapsulates logic related to specifig changes. New ProductChange might be added and FeedClient interface implementation can create it. In Coinbase use case CoinbaseFeedMessageHandler class creates concrete ProductChange's

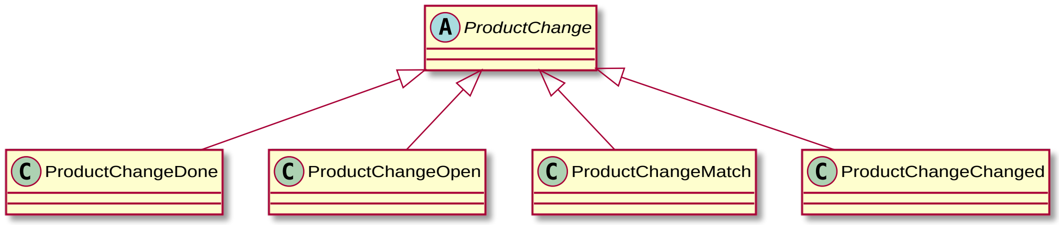
Product changed:


CoinbaseFeedMessageHandler
Market
Product
ProductChange
ProductCh
onProductChange(productChange)
onProductChanges(productChanges[])
updateOrderBook(OrderBook): (updated) bool
if(updated): publish(OrderBookView)
CoinbaseFeedMessageHandler
Market
Product
ProductChange
ProductCh

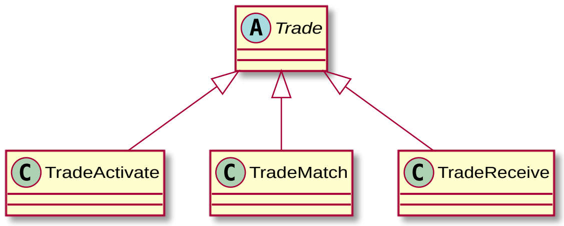
Trade received:



ProductData subclasses



ProductData subclasses


Trade
TradeActivate
TradeMatch
TradeReceive