Claims

1. An apparatus comprising:

a memory;

a network interface;

at least one processor to:

generate a plurality of queue data structures in the memory;

designate some of the plurality of queue data structures as buy queues;

designate some of the plurality of queue data structures as sell queues;

receive, via the network interface, a plurality of data packets indicative of buy orders and sell orders, each data packet further comprising a respective quantity;

store the buy orders and the sell orders in the buy queues and the sell queues respectively;

receive, via the network interface, data regarding a price of an item from a trusted remote server at a predetermined time;

only in response to receiving the price at the predetermined time, identify the buy orders and the sell orders for the item stored in the queue data structures that satisfy the price received from the trusted remote server;

identify a given buy order for the item whose quantity satisfies a given sell order for the item; and

in response to identifying the given buy order satisfying the given sell order, execute an electronic trade between the given buy order and the given sell order at the price received from the trusted remote server.

2. The apparatus of claim 1, wherein the data packets are encrypted.

3. The apparatus of claim 1, wherein the data packets are encoded in a predetermined format.

4. The apparatus of claim 1, wherein the at least one processor is further configured to:

receive a command to cancel the given buy order or the given sell order; and

remove the given buy order or the given sell order from a respective queue, in response to determining that the quantity of the given buy order does not satisfy the given sell order.

5. The apparatus of claim 4, wherein the at least one processor is further configured to reject the command to cancel, in response to determining that the quantity of the given buy order satisfies the given sell order.

6. The apparatus of claim 1, wherein the at least one processor is further configured to broadcast an indication of the electronic trade between the given buy order and the given sell order.

7. The apparatus of claim 1, wherein the at least one processor is further configured to broadcast an indication of the electronic trade between the given buy order and the given sell order, in response to determining that the quantity meets a threshold quantity.

8. The apparatus of claim 1, wherein the processor is configured to determine a timing for processing the plurality of queues.

9. The apparatus of claim 1, wherein the at least one processor is further configured to store a plurality of buy orders and sell orders for a particular item across multiple respective buy queues and sell queues.

10. The apparatus of claim 1, wherein the at least one processor is further configured to order each of the plurality of queues based on a predetermined priority.

11. A method comprising:

generating, by at least one processor, a plurality of queue data structures in a memory;

designating, by the at least one processor, the some of the plurality of queue data structures as buy queues;

designating, by the at least one processor, some of the plurality of queue data structures as sell queues;

receiving, by the at least one processor, via a network interface, a plurality of data packets indicative of buy orders and sell orders, each data packet further comprising a respective quantity;

storing, by the at least one processor, the buy orders and the sell orders in the buy queues and the sell queues respectively;

receiving, by the at least one processor, via the network interface, data regarding a price of an item from a trusted remote server at a predetermined time;

only in response to receiving the price at the predetermined time, identifying, by the at least one processor, the buy orders and the sell orders for the item stored in the queue data structures that satisfy the price received from the trusted remote server;

identifying, by the at least one processor, a given buy order for the item whose quantity satisfies a given sell order for the item; and

in response to identifying the given buy order satisfying the given sell order, executing, by the at least one processor, an electronic trade between the given buy order and the given sell order at the price received from the trusted remote server.

12. The method of claim 11, wherein the data packets are encrypted.

13. The method of claim 11, wherein the data packets are encoded in a predetermined format.

14. The method of claim 11, further comprising

receiving, by the at least one processor, a command to cancel the given buy order or the given sell order; and

removing, by the at least one processor, the given buy order or the given sell order from a respective queue, in response to determining that the quantity of the given buy order does not satisfy the given sell order.

15. The method of claim 14, further comprising rejecting, by the at least one processor, the command to cancel, in response to determining that the quantity of the given buy order satisfies the given sell order.

16. The method of claim 11, further comprising broadcasting, by the at least one processor, an indication of the electronic trade between the given buy order and the given sell order.

17. The method of claim 11, further comprising broadcasting, by the at least one processor, an indication of the electronic trade between the given buy order and the given sell order, in response to determining that the quantity meets a threshold quantity.

18. The method of claim 11, further comprising determining, by the at least one processor, a timing for processing the plurality of queues.

19. The method of claim 11, further comprising storing, by the at least one processor, a plurality of buy orders and sell orders for a particular item across multiple respective buy queues and sell queues.

20. The method of claim 11, further comprising ordering, by the at least one processor, each of the plurality of queues based on a predetermined priority.