Inf-2c Software Engineering

Course Work 3

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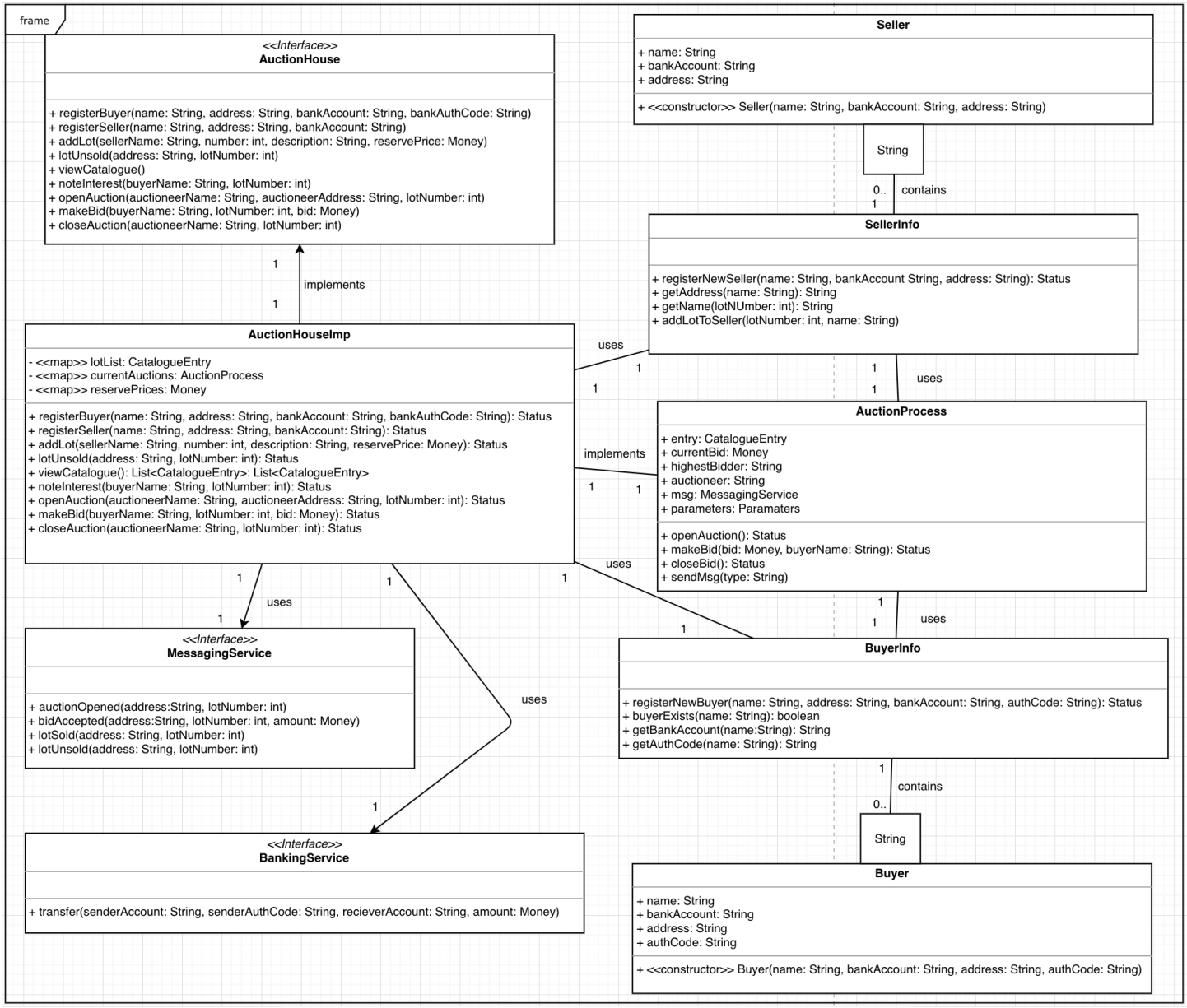
1 UML Class Diagram



2 High Level Description

- As in the previous course work, we follow a Façade design pattern. This serves to create a front class for the system which will provide access to the user to the functionality in the system. This prevents over complication as users only interact with a single class.

- In our implementation of the Façade pattern, we have an AuctionHouse interface which is then, for the most part, implemented in the AuctionHouseImp class. I say partially as some of the AuctionHouseImp methods are implemented in the AuctionProcess class as per instruction. Instructions in AuctionProcess are related to the methods concerned after the opening of an auction and sales.

- The AuctionHouseImp class, contains multiple maps as fields. In its implementation, these sets are Hashmaps. This provides easy storing and looking up of specific information through unique keys, unique to some stored data. This also allow pairing of data such as lotNumber and current auctioning processes.

- The AuctionHouseImp class further utilizes the methods provided by two additional interfaces, specifically the MessagingService and BankingService interfaces.

- The MessagingService interface functions to register when actions occur in the system. These events include events as a lot being sold or an auction opened. This helps the system keep track of the events that have happened and are expected to happen.

- The BankingService interface is used in the AuctionHouseImp class for transferring funds between accounts and customers.

- The AuctionProcess class implements some methods not implemented by the AuctionHouseImp class. Examples include openAuction or closeBid. Corresponsing functions in AuctionHouseImp serves as an interface for such methods.

- The SellerInfo class acts as a database for all the info necessary of the sellers participating in the auction house. As this is a database, the HashMap data structure pattern has been implemented between SellerInfo and Seller. The box containing String below the Seller class, each Seller is identified with a unique String within a HashMap within SellerInfo. This String refers to the name of the seller.

- The BuyerInfo works very similar to SellerInfo. Again, a HashMap is used with a String as the key. Here the String key is also again the name of the buyer.

- Finally, many classes provided in the skeleton, such as Money or Parameters are not included in the UML diagram as per instruction. They are, however, occasionally used as fields in the classes.

3 Implementation decisions

- For all the data structures used i.e. reservePrices, sellerInfo, buyerInfo, etc. we chose to use HashMaps. This is because these data points have unique fields, such as seller name or buyer name that lets the data easily be picked out by this unique field/key.
- We decided to create two separate classes for buyers and sellers to keep everything more organized and simpler.