Inf2C Software Engineering 2018-19
Coursework 2
Creating a software design for an auction house system

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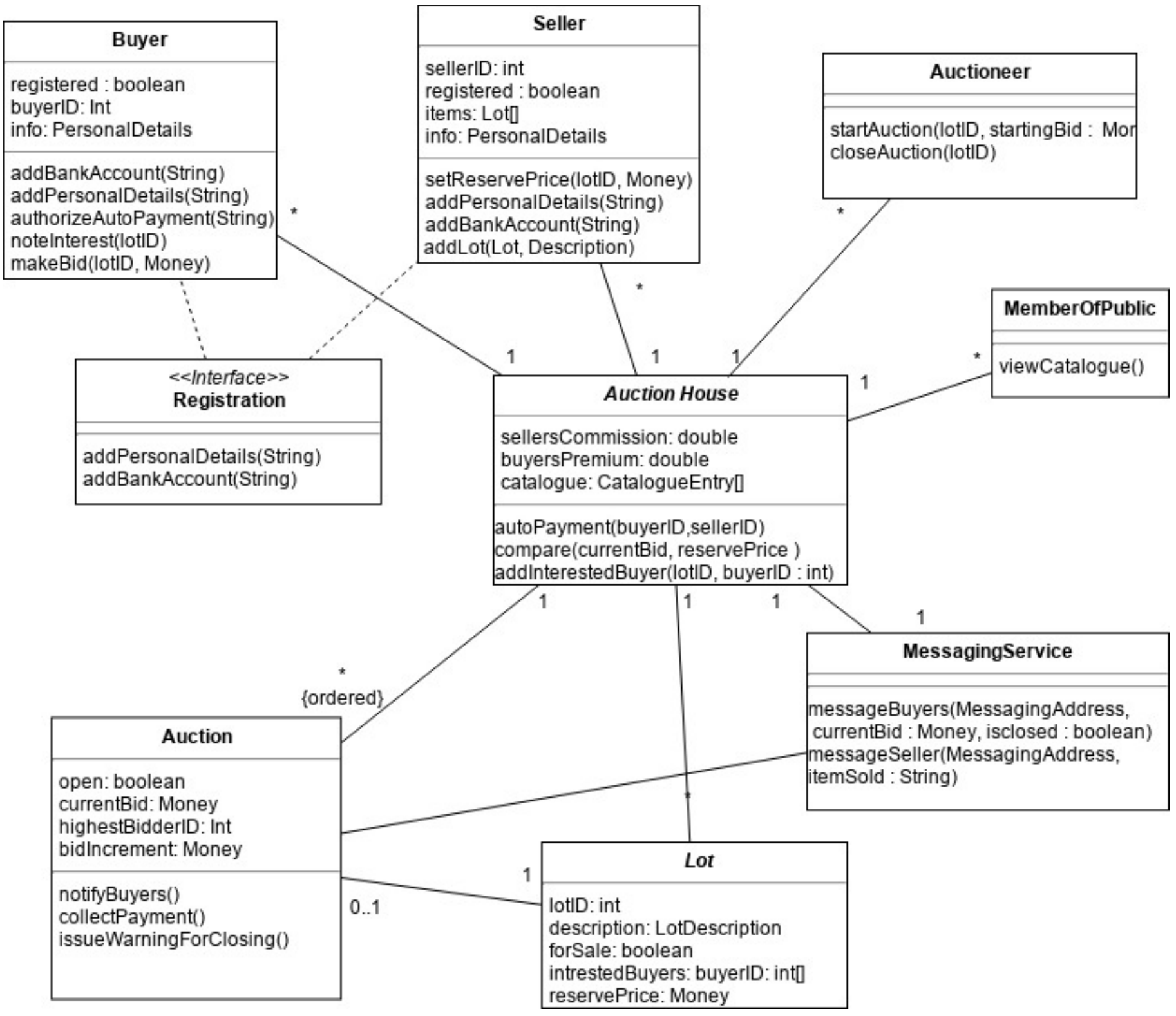
1 Introduction:

This system will be used to digitize select tasks and services like bidding and money transfers for Auld Reekie Auction House. While still inviting people to gather in a room for auctions, this will allow buyers to be off-site and participate in the auction.

2.1 UML Class Model Diagram



2.2 High-level description

- **Registration** interface is assumed to receive a formatted string from an online form so it can just iterate through the personal- and bank information one-by-one.
- *Buyer* in the introduction given above means a user, who have successfully completed the above mentioned registration process which includes **addBankAccount(String) ,addPersonalDetails(String) and authorizeAutoPayment(String)**.
- We assume that the seller's commission and the buyer's premium doubles in the **Auction House** class is a constant for all auctions set by the auction house
- **autoPayment(buyerID,sellerID)** method in the **Auction House class** is taking care of the payment including the calculations with the seller's commission and the buyer's premium and does the transfer using the **BankingService** class's method **transfer(senderAccount : String, senderAuthorisation : String, recieverAccount : String, amount : Money)**.
- We decided that **currentBid:Int** in the **Auction** class is also used to determine the hammer price when the auction closes, we considered it redundant to save it separately
- Saving the highest bidder's identity in the **Auction** class as an ID instead of a full Buyer object, we are increasing the performance when it is the most needed, as this data is subject to quick changing at the start of an auction.

- In the figure above, we see that **notifyBuyers()** method in **Auction** class iterates through the list of IDs stored in the lot, to to call **messageBuyers(MessagingAddress,currentBid : Money, isclosed : boolean)** method to message all buyers regarding new auctions, new highest bid, and the closure of the auction including the hammer price and winner of the auction. This design choice gives an easy to use messaging loop to automate things.

- In Buyer and Seller classes the **registered: boolean** attribute is there to distinguish between fully registered users and halfway complete registrations, while still allowing to save the process of the partially complete ones for better user experience.

2.3.1 UML sequence diagram