

CS3307a Observer Pattern - Questions 5-8

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Question 5

Code included in *src* folder.

Question 6

2 main classes exist: Subject and Bidder. A Bidder object is an instance of the class Bidder that represents a bidder in an auction. The bidder can instantiate itself and gather information from the subject. The sub-class SpBidder was made to demonstrate how the program would work with subclasses assuming there were different types of bidders in the auction (ie. ones with priority, different currencies...).

A Subject object is an instance of the class Subject and represents the 'auction house'. The subject class contains a vector of all the bidders and uses this to update all of them. This is the only example of coupling between the two classes in this particular design. A bid is made through the bid() function which is part of the Subject class. Once a bid is made, all the bidders are notified through the notify() function.

The Bidder class is the Observer and the Subject class is the Subject. The above explanation demonstrates how the Subject is the core that prompts the observer and the observer is the variable for abstraction which calls back to the subject.

Question 7

```
Observer: ADD NEW BIDDER
Subject: NEW BIDDER ADDED
Observer: ADD NEW BIDDER
Subject: NEW BIDDER ADDED
Subject: UPDATE BID
Subject: NOTIFY BIDDERS: NEW BID: 14
Subject: NOTIFYING BIDDERS...
Observer: GATHERING NEW BID INFO
Observer: GATHERING NEW BID INFO
Subject: UPDATE BID
Subject: NOTIFY BIDDERS: NEW BID: 7
Subject: NOTIFYING BIDDERS...
Observer: GATHERING NEW BID INFO
Observer: GATHERING NEW BID INFO
```

Question 8

1. We have learned that having multiple inheritance can overwhelm a system and have drastic effects on performance.
2. We have learned about the difficulty of trying to decrease the amount of coupling. Often times a certain level of coupling will be required and the difficulty is about figuring out WHERE to include it that makes the most sense.
3. We have learned that large-scale notifications can be executed in a way such that the amount of observers has little impact on performance.