Testing for Auction Server

1. **To check if the revenue is equal to the total money spent**

I calculated the total money spent by adding money spent by each bidder and compared it with revenue. If it comes to be equal then the auction server is working.

2. **Stretched the parameters to the limit so that it start to crash**

I increased the server "Auction Server" variables to the following :

maxBidCount = 1000
maxSellerItems = 2000
serverCapacity = 8000

Next I started changing the number of sellers and bidders in "Simulation"

nrsellers = 800
nrbidders = 70

The auction server started malfunctioning and started showing many buyers didn't spend any money,

 but didn't break down so I kept increasing the "nrsellers"

Finally it broke down at nrsellers = 2000 and showed the following error and my mac flashes out for a quick second.

```
Exception in thread "main" java.lang.OutOfMemoryError: unable to create new native thread
      at java.lang.Thread.start0(Native Method)
      at java.lang.Thread.start(Thread.java:673)
      at Simulation.main(Simulation.java:41)
```

Probable reasons – Out of memory so new threads couldn't be created.

3. **Checked SoldItemsCount()** for different values and figured out that all the items were getting added because itemUnbid() was not implemented right and it was showing all the items are getting sold no matter what so changed it..

4. Included print statements and found duplicate items were being added to the itemsAndItems. So removed it in submitBid().
5. For synchronization issues, I removed synchronization from methods and tried putting locks with individual variables which were accessed by the threads.

For a small number of sellers and bidders the revenue generated was equal to money spent by bidders..

When I increased the nrbidders above a limit. The revenue generated came out to be not unequal.. Hence a fault in auction server..