1. Nick Wright CSC406 Take Home Test

2. Java Code

*/\* This program is intended to create eBay objects and allow for bids to be placed through the use of threads*  
*\* There are three classes, test1part2 and forSale, bidding\*/*  
*import* java.util.concurrent.ExecutorService;  
import java.util.concurrent.Executors;  
import java.util.concurrent.locks.Lock;  
import java.util.concurrent.locks.ReentrantLock;  
  
/\*test1part2 holds the main method\*/  
public class test1part2 {  
 public static void main(String[] args){  
 *//creating the thread pool*  
ExecutorService executor= Executors.*newFixedThreadPool*(6);  
 *//creating the forSale object*  
forSale painting = new forSale("Dutch Masters Oil Painting", 5000.0, 60000,18490,17050,4827);  
  
 *//painting.MyBid(4827,5283,8000,18481);*  
 *//executing threads*  
executor.execute(new bidding(painting,4827,5283,4000,18481));  
 executor.execute(new bidding(painting,4827,4681,15000, 18482));  
 executor.execute(new bidding(painting,4827,5283,14500,18483));  
 executor.execute(new bidding(painting,4827,5283,17500,18485));  
 executor.execute(new bidding(painting,4827,4681,25000,18489));  
 executor.execute(new bidding(painting,4827,5283,32000,18495));  
 *//shutting down the executor*  
executor.shutdown();  
 }*//end of main*  
  
 */\*class forSale holds the constructor for the eBay objects, and has function MyBid which*  
 *\* allows for bids to be placed on the eBay object\*/*  
public static class forSale{  
 *//creating variables*  
private String ItemDes; *//this is a character string to describe the item*  
private double Buyitnow; *// This is the price to buy the item now*  
private double Currentbid;*//this is the current bid on the object*  
private double Minbid;*// this is the minimum opening bid on the object*  
private double Newbid;*// this is the new bid submitted for the object under consideration by the eBay software*  
private int timedone; *// this is the time the auction will close.*  
 *// eBay measures all bid closure times from 0 minutes beginning midnight Dec 31 for the entire year.*  
private int ctime;*// current time.*  
private int itemno;*//this is the unique Item number given to an item sold on eBay*  
private int bidno;*//this is a unique bidder number for the bidder holding the current high bid on an item*  
private int sold;*// item sold indicator 0=not sold, 1=sold*  
  
 *//creating a lock*  
private static Lock *lock* = new ReentrantLock();  
  
 *//creating the constructor*  
public forSale(String itemdes1, double minbid1, int buyitnow1, int timedone1, int ctime1, int itemno1){  
 *//setting variables equal to their counterparts*  
ItemDes = itemdes1;  
 Minbid = minbid1;  
 Buyitnow = buyitnow1;  
 timedone = timedone1;  
 ctime = ctime1;  
 itemno = itemno1;  
  
 Currentbid = 0; *//item has not yet been bid on*  
sold = 0;*//item has not yet been sold*  
}*//end of constructor*  
  
 *//creating function MyBid*  
public void MyBid(int itemnoBid, int bidnoBid, double bidamtBid, int ctimeBid){  
 *lock*.lock(); *//locking so that only one user may place a bid at a time*  
 *//checking to see if the item is available for purchase*  
if(sold==1){*//if item is not available for purchase, alert bidder*  
System.*out*.println("Sorry user "+bidnoBid+", item "+itemnoBid+" is no longer avaiable for purchase.");  
 System.*out*.flush();  
 }else{*//item is available for purchase*  
 *//creating condition for characteristic #2*  
if(bidamtBid>=Buyitnow){  
 System.*out*.println("Great job "+bidnoBid+", you just bought "+itemnoBid+", "+ItemDes+" for "+bidamtBid+" amount!");  
 System.*out*.flush();  
 sold = 1; *//setting sold to 1 so that it is unavailable for purchase*  
}  
 *//creating a condition for characteristic #3*  
if((bidamtBid<=Currentbid)&&(bidamtBid<=Minbid)){  
 System.*out*.println("Sorry "+bidnoBid+", this is not enough for "+itemnoBid+", "+ItemDes);  
 System.*out*.flush();  
 }  
 *//creating a condition for characteristic #4*  
if(ctimeBid>timedone){  
 System.*out*.println("Sorry "+bidnoBid+", you have run out of time to purchase "+itemnoBid+", "+ItemDes);  
 System.*out*.flush();  
 }  
 *//creating a condition for characteristic #5*  
if((bidamtBid>Currentbid)&&(bidamtBid>=Minbid)){  
 Currentbid = bidamtBid;  
 bidno = bidnoBid;  
 ctime = ctimeBid;  
 System.*out*.println("Congratulations "+bidnoBid+", you are currently the highest bidder for "+itemnoBid+  
 ", "+ItemDes+", but keep watching, good stuff goes fast on eBay.");  
 System.*out*.flush();  
 }  
 }*//end of else*  
 *lock*.unlock();*//unlocking*  
}*//end of MyBid*  
}*//end of forSale*  
  
 */\*class bidding allows implements runnable and runs using function MyBid\*/*  
public static class bidding implements Runnable{  
 *//this is the eBay item being bid upon*  
forSale item;  
  
 *//creating variables for the bidding information*  
int itemnoBidding;  
 int bidnoBidding;  
 double bidamtBidding;  
 int ctimeBidding;  
  
 *//creating constructor*  
public bidding(forSale x, int itemnoBid, int bidnoBid, double bidamtBid, int ctimeBid){  
 item = x;  
 itemnoBidding = itemnoBid;  
 bidnoBidding = bidnoBid;  
 bidamtBidding = bidamtBid;  
 ctimeBidding = ctimeBid;  
 }  
 public void run(){  
 item.MyBid(itemnoBidding,bidnoBidding,bidamtBidding,ctimeBidding);  
 }  
 }  
}*//end of test1part2*

3. Class Documentation

**public class test1part2**

**test1part2 Data**

The follwojng data is within the main method of this class

ExecutorService executor= Executors.newFixedThreadPool(6);

forSale painting = new forSale

**test1part2 functions**

public static void main(String[] args)

**public static class forSale**

**forSale Data**

private String ItemDes;

private double Buyitnow;

private double Currentbid;

private double Minbid;

private double Newbid;

private int timedone;

private int ctime;

private int itemno;

private int bidno;

private int sold;

private static Lock lock = new ReentrantLock();

**forSale Functions**

public forSale(String itemdes1, double minbid1, int buyitnow1, int timedone1, int ctime1, int itemno1){

public void MyBid(int itemnoBid, int bidnoBid, double bidamtBid, int ctimeBid){

**public static class bidding** implements Runnable

**bidding Data**

forSale item;

int itemnoBidding;

int bidnoBidding;

double bidamtBidding;

int ctimeBidding;

**bidding Functions**

public bidding(forSale x, int itemnoBid, int bidnoBid, double bidamtBid, int ctimeBid){

public void run(){

4. code output

Congratulations 4681, you are currently the highest bidder for 4827, Dutch Masters Oil Painting, but keep watching, good stuff goes fast on eBay.

Congratulations 5283, you are currently the highest bidder for 4827, Dutch Masters Oil Painting, but keep watching, good stuff goes fast on eBay.

Congratulations 4681, you are currently the highest bidder for 4827, Dutch Masters Oil Painting, but keep watching, good stuff goes fast on eBay.

Sorry 5283, you have run out of time to purchase 4827, Dutch Masters Oil Painting

Congratulations 5283, you are currently the highest bidder for 4827, Dutch Masters Oil Painting, but keep watching, good stuff goes fast on eBay.

Process finished with exit code 0