NESTED CLASSES

In this coding exercise, you will develop a Java program to represent an Cash Register system that interacts with a cashier. You will need to build Java classes, including nested classes and inherited classses.

1. A Transaction.java class that has the following members
   - 1.1. An integer field ***id*** that is a unique identifier assigned to each transaction starting from 1. This field will be private and has only public getter. It should not be set manually.
   - 1.2. A double field ***amount*** that stores the amount in dollars per transaction.
   - 1.3. A LocalDateTime field ***dateTime*** that stores the transaction date and time.This field will be private and has only public getter. It should not be set manually.
   - 1.4. Has only one overload constructor that takes the amount as an argument.
   - 1.5. A ***String toString()*** that returns the Transaction in the following format
     - a) Transaction{Id=1, Amount=100.0, DateTime=2021-03-16T20:28:48.322174857}
   - 1.6. You can use private setters and other helper methods and fields if needed.
2. A Comparison interface that has the following abstract method
   - 2.1. int compare(Object objectA, Object objectB) method that is used to compare two objects
3. CashRegister.java class has the following members
   - 3.1. A Transaction array **transactions** that stores all the transactions *It will have initial size 100. This field will be private and not have public getter and setter.*
   - 3.2. ***void putCash(double amount)*** method that creates and stores the transaction with the specified amount in the ***transactions*** array. Calls the ***doubleTransactionArray()*** method if it is needed.
   - 3.3. A private method ***void doubleTransactionArray()*** that *If* ***transactions*** array *is filled fully , all elements in the array will be copied to a new array which will have double size of the old array. The new array will have the same reference,* ***transactions.***
   - 3.4. This class has only default constructor.
4. In the CashRegister class in the same file, create the following inner class
   - 4.1. class TransactionReporter
     - a) no fields
     - b) ***double reportCash()*** method that reports the total money in the Cash Register
     - c) ***Transaction reportMax()*** method that return the transaction with the maximum amount
     - d) ***Transaction reportMin()*** method that return the transaction with the minimum amount
     - e) ***int compareTransactions(Comparison comparison,Transaction transactionA, Transaction transactionB)*** method. In this method just call and returns ***comparison.compare(transactionA, transactionB)***
     - f) ***Transaction getTransaction(int index)*** method that returns the transaction object at specified index.
5. TestCashRegister class that has only ***void test()*** method and does the followings
   - 5.1. Create an object of CashRegister class whose name will be ***cashRegister***
   - 5.2. In a for loop make calls putCash(amount) method to create 300 transactions. The amount in the first transaction will be 5 and will be incremented by 5 for each transaction.
   - 5.3. Create an object of the TransactionReporter class whose name will be ***transactionReporter***
     - a) calls its all methods and prints the result.
     - b) To call ***compareTransactions(Comparison comparison,Transaction transactionA, Transaction transactionB)*** you should create an anonymous class that implements the Comparison interface.

c) To implement int compare(Object a, Object b) method of the Comparison interface
    - if amount of two transaction is equal returns 0
    - if amount of the transaction a is bigger than the amount of the transaction b returns 1
    - if amount of the transaction b is bigger than the amount of the transaction a returns 2
    - if a or b is null then returns -1

d) Then compare 1. and 300. transactions.