Homework 7
CSS 162 – Programming Methodology

In this assignment, you will update the Money, Date, Bill, and ArrayList classes from previous homeworks using new ideas that we have discussed in class. Build a driver to test the functionality. Your code should compile with your driver, but note that you will want to test your code more fully, as I will also do.

1. Fix any privacy (and other) errors that were noted in your comments for the previous iteration of this homework.

2. Modify the Money, Date, and Bill class to implement the Comparable interface. The supplied driver performs a simple test on this. Remember that compareTo takes an Object parameter and you should check to make sure that the object is actually a Money object.

3. Modify the Money, Date, and Bill classes to implement the Cloneable interface. Note that Money and Date can simply copy their private instance variables, since they store only primitive and immutable types. However, you will need to override the clone method, to make it public, since it is protected in the Object class. The Bill class will need to do more, since it incorporates the Money and Date classes, which are mutable. Note that it can (and should) use the clone methods of those classes. Be sure to remove any use of the copy constructor for Money, Date, and Bill in the rest of the code (the definition can exist, but don't use it in other classes; use the clone method instead).

4. Build a class ExpenseAccount that extends your ArrayList. You should remove the limit on the number of bills that can be placed in an account by making your ArrayList dynamically resize itself.

5. Modify Money, Bill, and Date to implement the Serializable interface.

6. There is a separate extra credit portion that builds on this assignment.