**CS 602 Fall 2017**

**Programming Assignment 1**

**Due Date: Sept. 25, 2017**

In this assignment, you will be implementing a cash register which will keep track of different currency units that are kept in the register. For simplicity, we will restrict currency units to pennies, dimes, quarters, one dollar, ten dollar and twenty dollar bills. We start with a specified quantity of these currency units and the following three transactions can be done repeatedly with the cash register:

1. Payment of a certain amount for an item by a customer with some currency units that may require excess payment to be handed to the customer if possible, otherwise no payment is accepted. For example, an item may cost $7.50 and the customer may hand out a $10 bill and the remaining change of $2.50 should be handed out in whatever currency units there are in the register. If this change is not possible, you should return the $10 bill.
2. Addition of certain quantity of a currency unit. For example you may want to add 50 quarters to cash register to allow more quarters to be handed out as change.
3. Removal of certain quantity of a currency unit. For example you may have too many dimes which you may want to remove from the cash register.

For (a), make change with the smallest number of currency units possible from the cash register. To make change $2.50 for example, it should be 2 $1 bills and 2 quarters provided there are at least 2 $1 bills and 2 quarters available in the cash register. If the cash register has only one 1$ bill and 4 quarters and 10 dimes instead, the change should be 1 $1 bill, 4 quarters and 5 dimes.

I have provided a skeletal implementation to help you get started (Check Moodle). You just need to complete different functions and do more testing in the main() function. Submit only the CashRegister.java file with your name added in comments section.

**Grading:**

If your program does not compile you do not get any credit. I will test the program with 8 test case inputs, each worth 10 points. If your program crashes for a test case, you will not receive any credit for that test case; if it gives wrong answer, you will get a partial credit depending on the output.

The remaining 20 points will be awarded for the program coding, logic and style.