Lab Exercise (Chapter 6: Part 1)

Description of the Problem

Draw the UML class diagram and write the Java codes for the requirement below:
Create a class named 'Account' that maintains the balance of a bank account. A typical bank services many accounts, each with its own balance, so you need to declares an instance variable named 'balance' of type *double*, thus every instance (or you call it object) of class 'Account' will contain its own copy of 'balance'.

It's common for someone opening an account to deposit money immediately, so the class should have a constructor that receives a parameter 'initialBalance' of type *double* that will set the start balance. And you should also create three methods for the class which are:

1. **Credit** method to credit (add) the balance of the account. This method should receive a parameter amount in type *double* and will not return anything.
2. **Debit** method to debit (deduct) the balance of the account. This method should receive a parameter amount in type *double* and will not return anything. Ensure that the debit amount does not exceed the account's balance. If it does, the balance should be left unchanged and the method should print a message indicating "Debit amount exceeded account balance".
3. **getBalance** method to get the balance reading of the account.

Now create your main program class named 'AccountTest' to test your 'Account' class above. This 'AccountTest' class should contain the 'main' method. And, in this 'AccountTest' program, you should try to create two 'Account' instances (or object) and name it 'account1' and 'account2' with initial balance of 50.00 and 8.93 respectively.

Then print out the balance of the 'account1' and 'account2'.

Then ask the user to enter an amount type *double* to be credited for 'account1' and 'account2' by using the method intput.nextDouble().

Then print out the balance of the 'account1' and 'account2'.

Then ask the user to enter an amount type *double* to be debited for 'account1' and 'account2' by using the method intput.nextDouble().

Then print out the balance of the 'account1' and 'account2'.

Finally, improve your program by adding a 'total' class variable to store the total of money available in the bank repository (Hint: use keyword ***static***). Update the total every time an account's balance is updated by using the 'increaseTotal' and 'decreaseTotal' method. Then, print out the total at the end of your output by calling the 'getTotal' method.

Sample Output:

```
account1 balance: $50.00
account2 balance: $8.93

Enter amount to be deposited for account1: 2.50
Enter amount to be deposited for account2: 3.00

account1 balance: $52.50
account2 balance: $11.93

Enter amount to be withdrawn for account1: 11.00
Enter amount to be withdrawn for account2: 1.90

account1 balance: $41.50
account2 balance: $10.03

Total balance of all accounts is: 51.53
```