OBJECT OREANTED PROGRAMMING LAB02

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Lab02_Task01

Given the following class, called NumberHolder, write some code that creates an instance of the class, initializes its two member variables, and then displays the value of each member variable.

public class NumberHolder {

    public int anInt;

    public float aFloat;

}

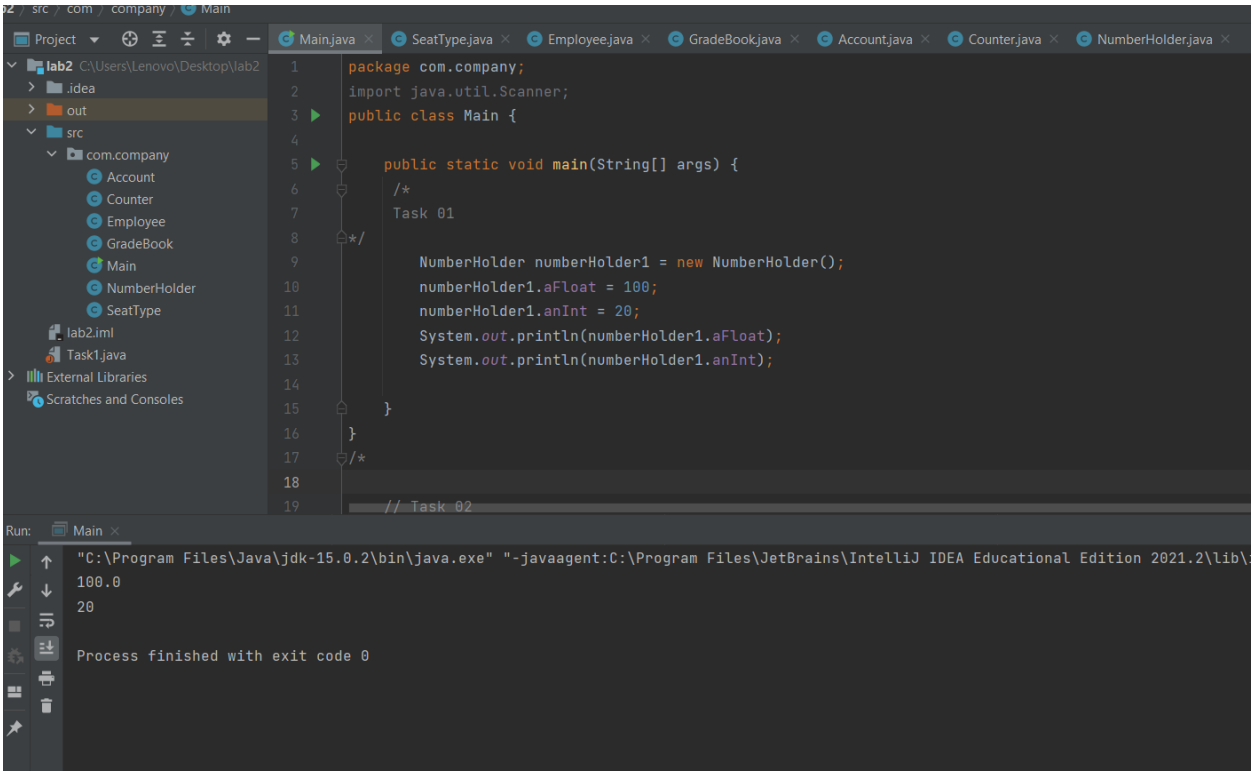
```java
package com.company;

public class NumberHolder {

    public int anInt;
    public float aFloat;

}

```

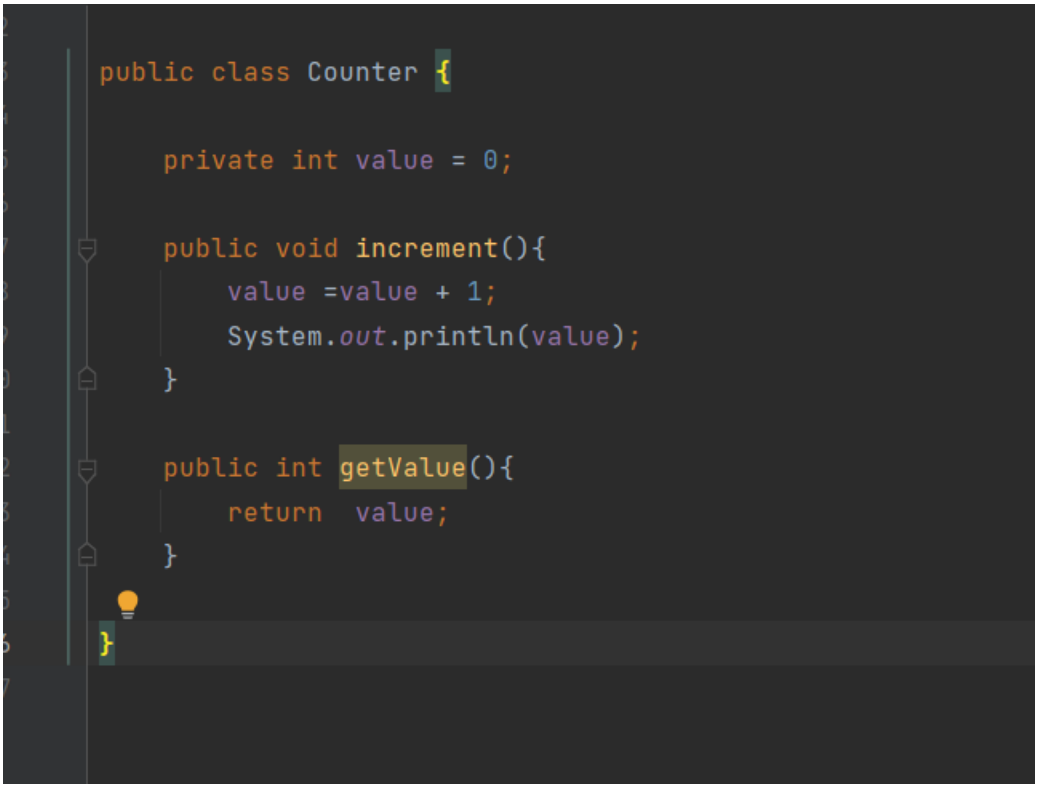

Project
lab2 C:\Users\Lenovo\Desktop\lab2
.idea
out
src
com.company
Account
Counter
Employee
GradeBook
Main
NumberHolder
SeatType
lab2.iml
Task1.java
External Libraries
Scratches and Consoles
Main.java
SeatType.java
Employee.java
GradeBook.java
Account.java
Counter.java
NumberHolder.java
package com.company;
import java.util.Scanner;
public class Main {
public static void main(String[] args) {
/*
Task 01
*/
NumberHolder numberHolder1 = new NumberHolder();
numberHolder1.aFloat = 100;
numberHolder1.anInt = 20;
System.out.println(numberHolder1.aFloat);
System.out.println(numberHolder1.anInt);
}
}
/*
// Task 02
Run:
Main
"C:\Program Files\Java\jdk-15.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Educational Edition 2021.2\lib\
100.0
20
Process finished with exit code 0

Lab02_Task02

Write a very simple but complete class. The class represents a counter that counts 0, 1, 2, 3, 4,....

- The name of the class should be Counter.
- It has one private instance variable representing the value of the counter.
- It has two instance methods:
    - increment() adds one to the counter value, and
    - getValue() returns the current counter value.

Write a complete definition for the class, Counter.



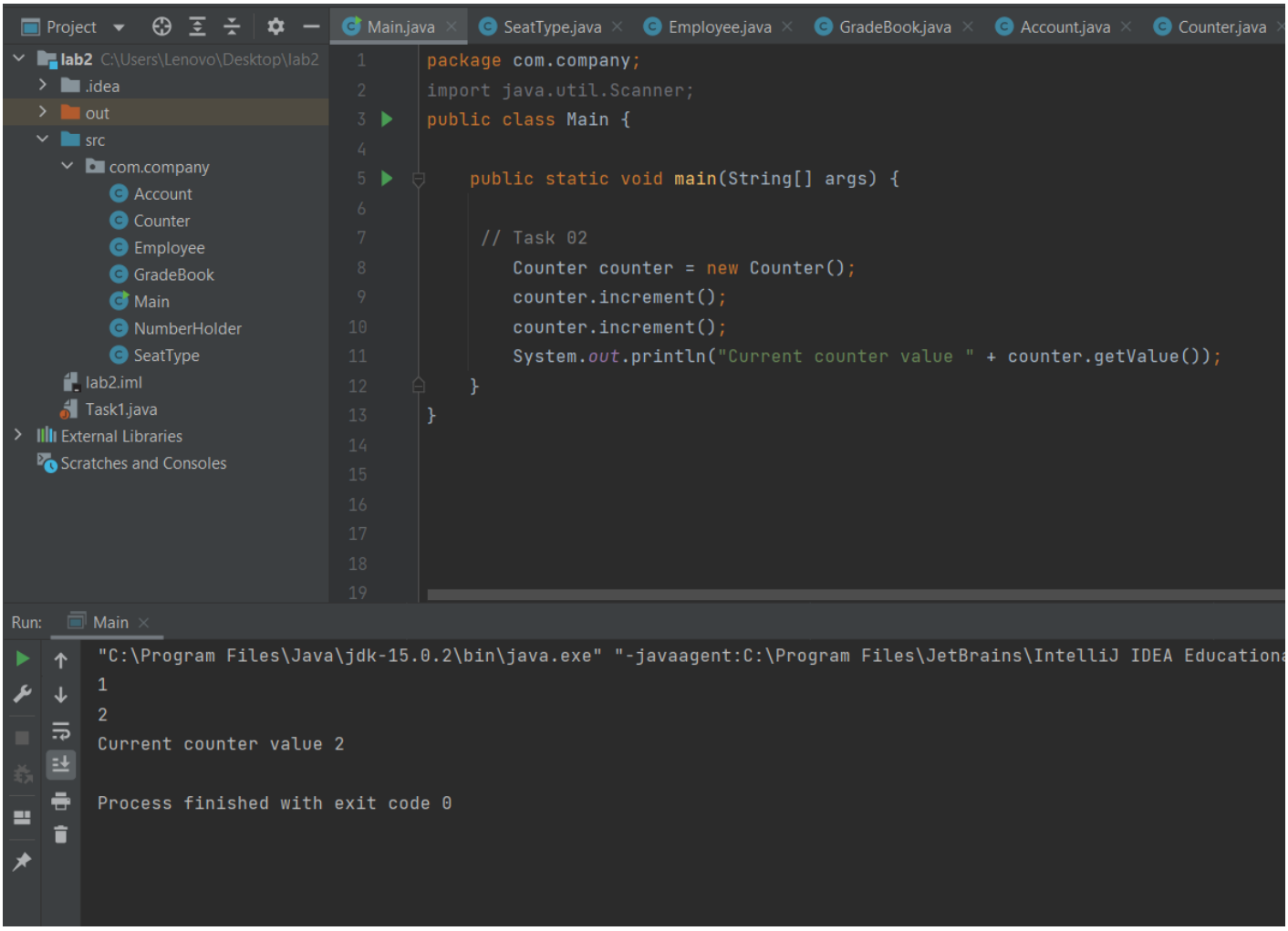
```
public class Counter {

    private int value = 0;

    public void increment(){
        value =value + 1;
        System.out.println(value);
    }

    public int getValue(){
        return  value;
    }

}
```


Project
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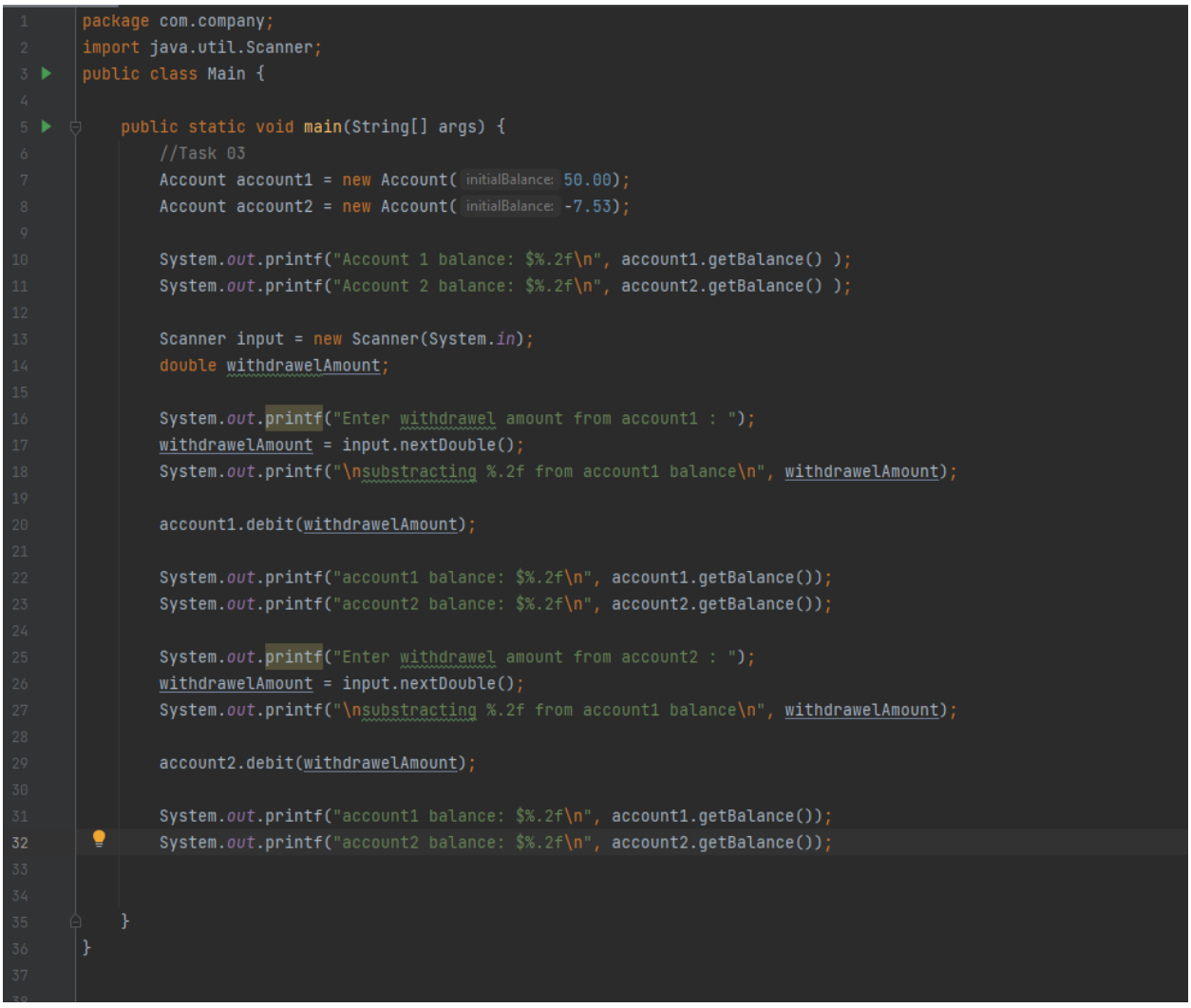
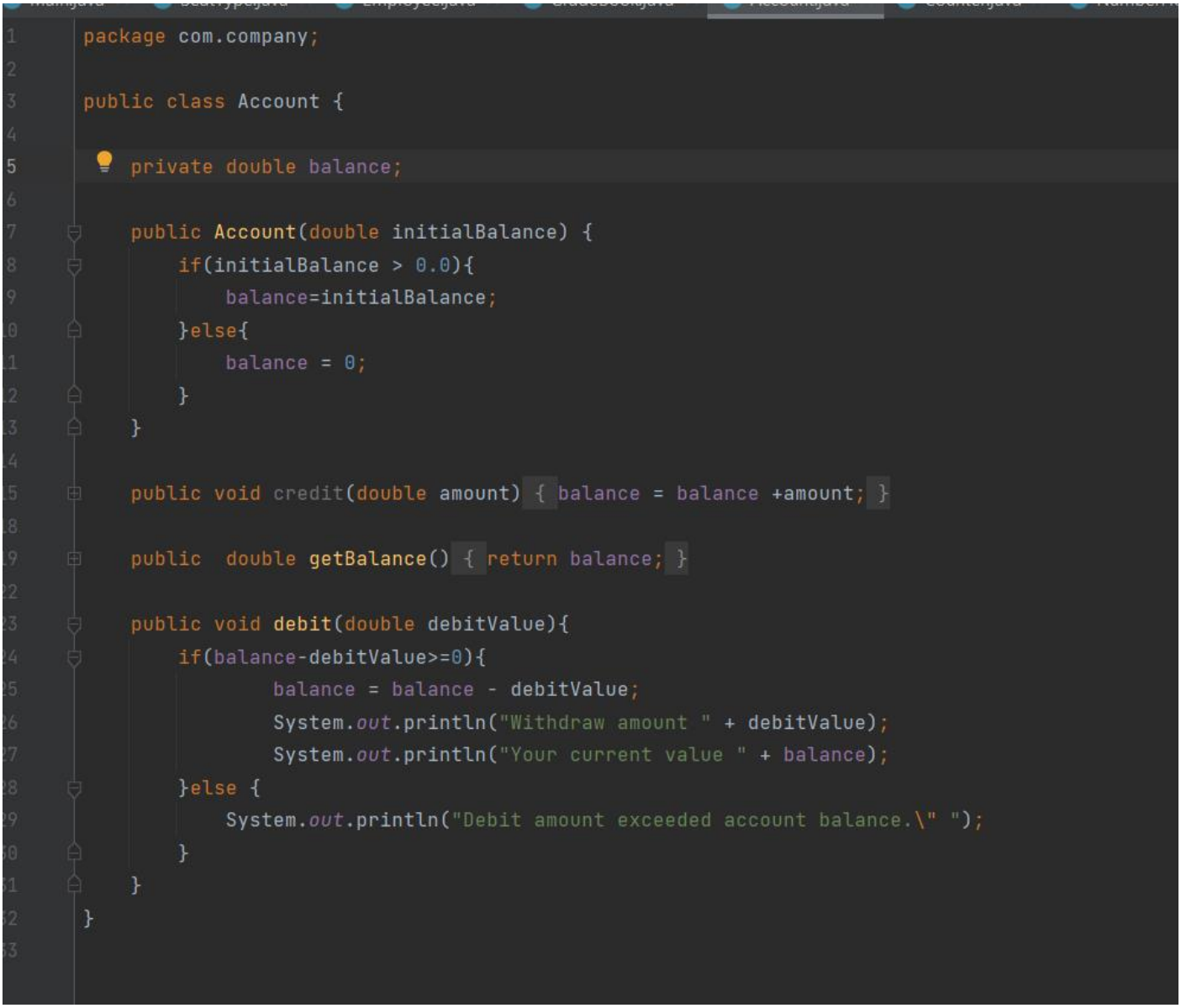
Task1.java
External Libraries
Scratches and Consoles
Main.java
SeatType.java
Employee.java
GradeBook.java
Account.java
Counter.java
package com.company;
import java.util.Scanner;
public class Main {
public static void main(String[] args) {
// Task 02
Counter counter = new Counter();
counter.increment();
counter.increment();
System.out.println("Current counter value " + counter.getValue());
}
}
Run:
Main
"C:\Program Files\Java\jdk-15.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Educationa
1
2
Current counter value 2
Process finished with exit code 0

Lab02_Task03

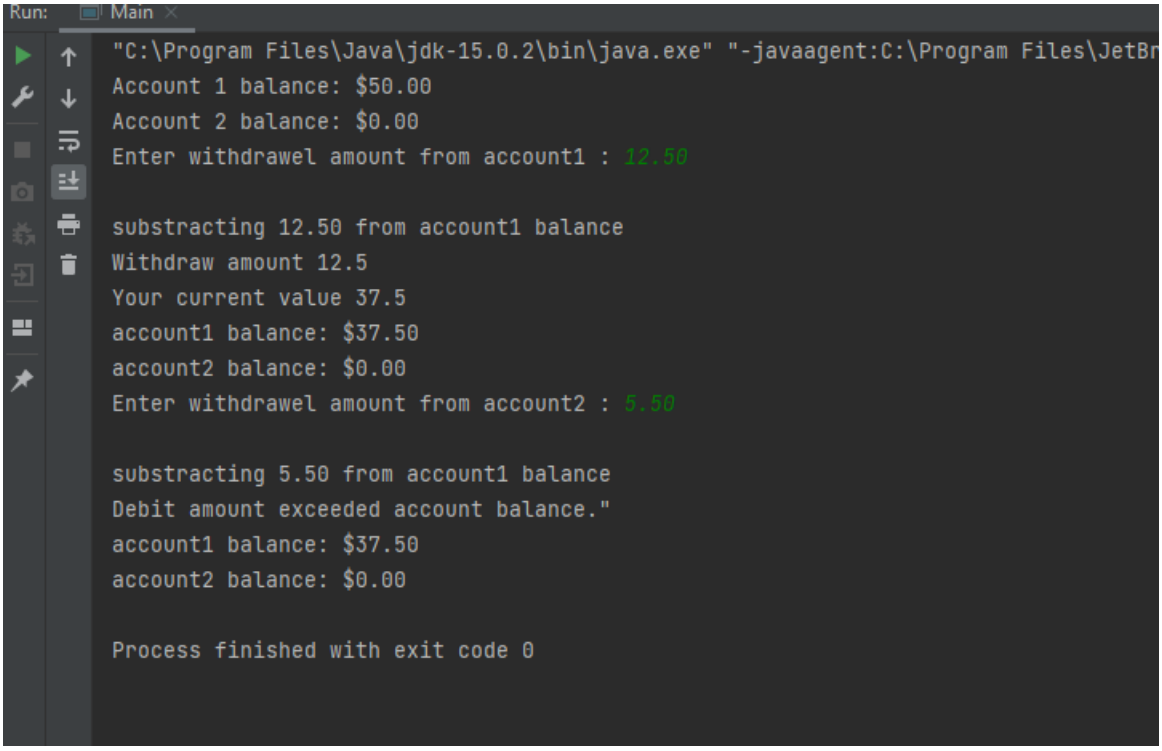
Modify class Account (Fig. 1) to provide a method called debit that withdraws money from an Account. Ensure that the debit amount does not exceed the Account's balance. If it does, the balance should be left unchanged and the method should print a message indicating "Debit amount exceeded account balance." Modify class AccountTest (Fig. 2) to test method debit.



```java
package com.company;
import java.util.Scanner;
public class Main {

    public static void main(String[] args) {
        //Task 03
        Account account1 = new Account( initialBalance: 50.00);
        Account account2 = new Account( initialBalance: -7.53);

        System.out.printf("Account 1 balance: $%.2f\n", account1.getBalance() );
        System.out.printf("Account 2 balance: $%.2f\n", account2.getBalance() );

        Scanner input = new Scanner(System.in);
        double withdrawelAmount;

        System.out.printf("Enter withdrawel amount from account1 : ");
        withdrawelAmount = input.nextDouble();
        System.out.printf("\nsubstracting %.2f from account1 balance\n", withdrawelAmount);

        account1.debit(withdrawelAmount);

        System.out.printf("account1 balance: $%.2f\n", account1.getBalance());
        System.out.printf("account2 balance: $%.2f\n", account2.getBalance());

        System.out.printf("Enter withdrawel amount from account2 : ");
        withdrawelAmount = input.nextDouble();
        System.out.printf("\nsubstracting %.2f from account1 balance\n", withdrawelAmount);

        account2.debit(withdrawelAmount);

        System.out.printf("account1 balance: $%.2f\n", account1.getBalance());
        System.out.printf("account2 balance: $%.2f\n", account2.getBalance());


    }
}
```



```java
package com.company;

public class Account {

    private double balance;

    public Account(double initialBalance) {
        if(initialBalance > 0.0){
            balance=initialBalance;
        }else{
            balance = 0;
        }
    }

    public void credit(double amount) { balance = balance +amount; }

    public  double getBalance() { return balance; }

    public void debit(double debitValue){
        if(balance-debitValue>=0){
                balance = balance - debitValue;
                System.out.println("Withdraw amount " + debitValue);
                System.out.println("Your current value " + balance);
        }else {
            System.out.println("Debit amount exceeded account balance.\" ");
        }
    }
}
```


Run:
Main
"C:\Program Files\Java\jdk-15.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBr
Account 1 balance: $50.00
Account 2 balance: $0.00
Enter withdrawel amount from account1 : 12.50
substracting 12.50 from account1 balance
Withdraw amount 12.5
Your current value 37.5
account1 balance: $37.50
account2 balance: $0.00
Enter withdrawel amount from account2 : 5.50
substracting 5.50 from account1 balance
Debit amount exceeded account balance."
account1 balance: $37.50
account2 balance: $0.00
Process finished with exit code 0