

L11

InsufficientFunds.java

```
public class InsufficientFunds extends RuntimeException{
    public InsufficientFunds(){

    }
    public InsufficientFunds(String msg){
        super(msg); // use superclass constructor
    }
}
```

BankAccount.java

```
public class BankAccount{
    private double balance;
    public BankAccount(){
        balance = 0;
    }
    public BankAccount(double initialBalance){
        balance = initialBalance;
    }
    public void deposit(double amount){
        balance = balance + amount;
    }
    public void withdraw(double amount){
        if(amount <= balance)
            balance = balance - amount;
        else{
            InsufficientFunds myEx = new InsufficientFunds("Amount Exceeds Balance");
            throw myEx;
        }
    }
}
```

```
public double getBalance(){  
    return balance;  
}  
}
```

CheckingAccount.java

```
public class CheckingAccount extends BankAccount  
{  
    private int transactionCount;  
    public CheckingAccount(){  
        transactionCount = 0;  
    }  
    public CheckingAccount(double initialBalance){  
        super(initialBalance); //use the super class constructor that's already coded  
        transactionCount = 0;  
    }  
    public void deposit(double amount){  
        super.deposit(amount);  
        transactionCount = transactionCount + 1;  
    }  
    public void withdraw(double amount){  
        super.withdraw(amount);  
        transactionCount = transactionCount + 1;  
    }  
    public void deductFees(){  
        if (transactionCount > 3){  
            double fee = 2.0*(transactionCount - 3);  
            super.withdraw(fee);  
        }  
        transactionCount = 0;  
    }  
}
```

BankAccountTest.java

```
import java.util.*;
```

```
public class BankAccountTest
{
    public static void main(String[] args)
    {
        Scanner myScanner = new Scanner(System.in);
        System.out.print("Enter initial checking account balance: ");
        double amount = Double.parseDouble(myScanner.nextLine());
        CheckingAccount myChecking = new CheckingAccount(amount);
        System.out.println("D - Deposit into checking");
        System.out.println("W - Withdraw from checking");
        System.out.println("P - End of month processing");
        System.out.println("S - Show account balance");
        System.out.println("E - Exit the program");
        boolean done = false;
        while (!done)
        {
            System.out.print("> ");
            String choice = myScanner.nextLine();
            if (choice.equalsIgnoreCase("D"))
            {
                System.out.print("Enter amount to deposit: ");
                amount = Double.parseDouble(myScanner.nextLine());
                myChecking.deposit(amount);
            }
            else if (choice.equalsIgnoreCase("W")) {
                try {
                    System.out.print("Enter amount to withdraw: ");
                    amount = Double.parseDouble(myScanner.nextLine());
                    myChecking.withdraw(amount);
                } catch (InsufficientFunds myEx) {
                    System.out.println(myEx.getMessage());
                    System.out.println("Transaction Aborted!");
                }
            }
            else if (choice.equalsIgnoreCase("P"))
                myChecking.deductFees();
            else if (choice.equalsIgnoreCase("S"))
                System.out.println("Checking balance: " + myChecking.getBalance());
            else if (choice.equalsIgnoreCase("E"))
                done = true;
            else
                continue;
        }
    }
}
```

```
        System.out.println("Invalid menu choice - please re-enter");
    }
    System.out.println("Goodbye!");
}
}
```

Revision #1

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