

Solution Review: Implement an Account Class using Polymorphism

This review provides a detailed analysis to solve the 'Implement an Account Class using Polymorphism' challenge.

WE'LL COVER THE FOLLOWING ^

- Solution
 - Explanation

Solution

```
// Account Class
class Account {

    protected double balance; // protected variable

    public Account(double balance) { // parametrized constructor
        this.balance = balance;
    }

    // member functions
    public void Deposit(double amount){}
    public void Withdraw(double amount){}
    public void printBalance(){}
```

```
}

// Savings class extended from Account class
class Savings extends Account {

    double interestRate = 0.8; // member variable

    public Savings(int balance) { // parametrized constructor
        super(balance); // calling base class constructor
    }

    // Implementation of member functions
    public void Deposit(double amount) {
        balance += amount + (amount * interestRate);
    }

    public void Withdraw(double amount) {
        balance -= amount + (amount * interestRate);
    }
}
```

```

    public void printBalance() {
        System.out.println("Balance in your saving account: " + balance);
    }
}

// Current class extended from the Account class
class Current extends Account {

    public Current(int balance) { // Parametrized constructor
        super(balance); // calling base class constructor
    }

    // Implementation of public member functions
    public void Deposit(double amount) {
        balance += amount;
    }

    public void Withdraw(double amount) {
        balance -= amount;
    }

    public void printBalance() {
        System.out.println("Balance in your current account: " + balance);
    }
}

class Demo {

    public static void main(String args[]) {
        // creating savings account object
        Account SAccount = new Savings(50000);

        SAccount.Deposit(1000);
        SAccount.printBalance();

        SAccount.Withdraw(3000);
        SAccount.printBalance();

        System.out.println();

        // creating current account object
        Account CAccount = new Current(50000);
        CAccount.Deposit(1000);
        CAccount.printBalance();

        CAccount.Withdraw(3000);
        CAccount.printBalance();
    }
}

```



Explanation

- We have implemented the `Account` class which has the `balance` double variable, and three public methods **`Deposit(double amount)`**,

`Withdraw(double amount)` and **`printBalance()`**

- Implemented `Savings` and `Current` classes extended from the `Account` class through the `extend` keyword
- `Savings` class has private double **`interestRate`** variable and following methods:
 - `Withdraw(double amount)` deducts *amount* from the *balance* with *interestRate*
 - `Deposit(double amount)` adds *amount* in the *balance* with *interestRate*
 - `printBalance()` displays the balance in the *account*
- `Current` class has following methods:
 - `Withdraw(double amount)` deducts *amount* from *balance*
 - `Deposit(double amount)` adds *amount* in *balance*
 - `printBalance()` displays the balance in the *account*
- Created *Savings* and *Current* object by calling parametrized constructors of the classes and printed their balance by calling their respective methods