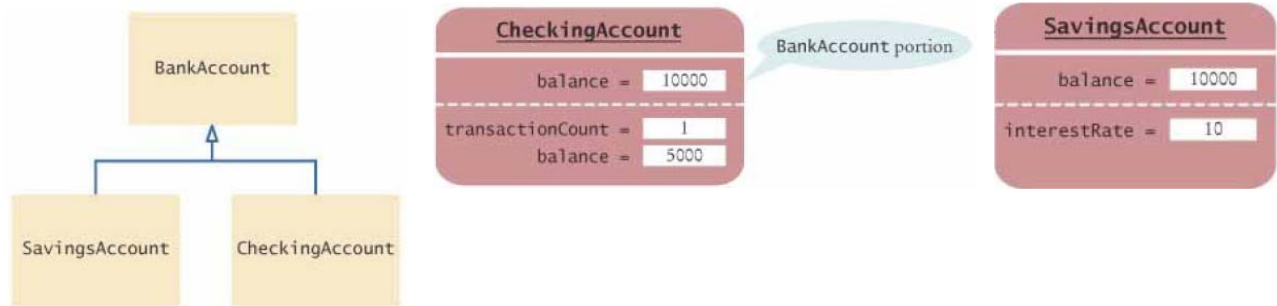


Abstract classes. Object class Problem 2.



Add a `TimeDepositAccount` class to the bank account hierarchy in the previous exercise. The time deposit account is just like a savings account, but you promise to leave the money in the account for a particular number of months, and there is a penalty for early withdrawal. Construct the account with the interest rate and the number of months to maturity. In the `addInterest` method, decrement the count of months. If the count is positive during a withdrawal, charge the withdrawal penalty. Use the following class as your tester class:

```
/**
 * This program tests the BankAccount class and its subclasses.
 */
public class TimeDepositTester {
    public static void main(String[] args) {
        SavingsAccount momsSavings = new SavingsAccount(5);
        CheckingAccount harrysChecking = new CheckingAccount(100);
        TimeDepositAccount collegeFund = new TimeDepositAccount(10, 3);
        momsSavings.deposit(10000);
        momsSavings.transfer(2000, harrysChecking);
        harrysChecking.withdraw(1500);
        harrysChecking.withdraw(80);
        momsSavings.transfer(1000, harrysChecking);
        harrysChecking.withdraw(400);
        momsSavings.transfer(3000, collegeFund);
        collegeFund.withdraw(800);
        // simulate end of month
        momsSavings.addInterest();
        collegeFund.addInterest();
        harrysChecking.deductFees();
        System.out.println("Mom's savings balance: " + momsSavings.getBalance());
        System.out.println("Expected: 4200");
        System.out.println("Harry's checking balance: " +
            harrysChecking.getBalance());
        System.out.println("Expected: 1116");
        System.out.println("College fund's time deposit balance: " +
            collegeFund.getBalance());
        System.out.println("Expected: 2398");
    }
}
```