Lab 3

Assignment 1:

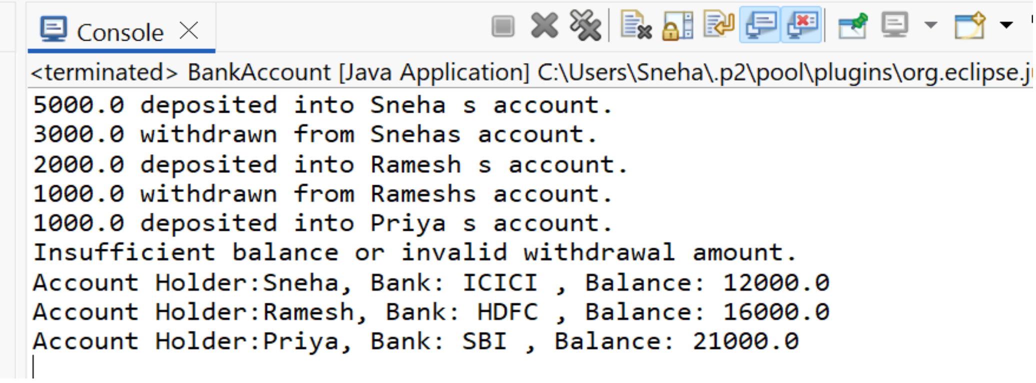
- Create a BankAccount class that
- BankAccount class should have three fields accountHolderName (String), bankName(String), accountBalance(double).
- Create a constructor that takes account holder’s name, bank name and initial balance.
- Add three methods to the interface – getBalance(), deposit() and withdraw().
- Implement all three methods.
- In the main method create three bank accounts with different account holder names and ICICI, HDFC and SBI as bank names.
- Deposit and withdraw money for each account. Display the account balance.

Source Code:

```
package labque;

// BankAccount.java
public class BankAccount {

    //Fields
    private String accountHolderName;
    private String bankName;
    private double accountBalance;

    // Constructor
    public BankAccount(String accountHolderName, String bankName, double
accountBalance)  {
        this.accountHolderName =accountHolderName;
        this.bankName = bankName;
        this.accountBalance = accountBalance;
    }

    // Method to get balance
    public double getBalance() {
        return accountBalance;
    }

    // Deposit method
    public void deposit(double amount) {
        if (amount > 0) {
            accountBalance += amount;
            System.out.println(amount + " deposited into " + accountHolderName
+ " s account.");
        }
        else {
            System.out.println("Invalid deposit amount.");
        }
    }
// withdraw method
    public void withdraw(double amount) {
        if (amount > 0 && amount <= accountBalance)  {
            accountBalance -=amount;
            System.out.println(amount + " withdrawn from " +
accountHolderName + "s account.");
        } else {
            System.out.println("Insufficient balance or invalid withdrawal
amount.");
        }
    }
    // Display account details
    public void displayAccount() {
        System.out.println("Account Holder:" + accountHolderName + ", Bank: " +
bankName + " , Balance: " + accountBalance);
    }

    // Main class
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        // Create 3 bank accounts
        BankAccount acc1 = new BankAccount("Sneha", "ICICI", 10000);
        BankAccount acc2 = new BankAccount("Ramesh", "HDFC", 15000);
        BankAccount acc3 = new BankAccount("Priya", "SBI", 20000);

        // Deposit and withdraw
        acc1.deposit(5000);
        acc1.withdraw(3000);

        acc2.deposit(2000);
        acc2.withdraw(1000);

        acc3.deposit(1000);
```

```
                acc3.withdraw(25000);  // Invalid withdrawal

                // Display accounts
                acc1.displayAccount();
                acc2.displayAccount();
                acc3.displayAccount();

        }
}
```

Output:



```
<terminated> BankAccount [Java Application] C:\Users\Sneha\.p2\pool\plugins\org.eclipse.j
5000.0 deposited into Sneha s account.
3000.0 withdrawn from Snehas account.
2000.0 deposited into Ramesh s account.
1000.0 withdrawn from Rameshs account.
1000.0 deposited into Priya s account.
Insufficient balance or invalid withdrawal amount.
Account Holder:Sneha, Bank: ICICI , Balance: 12000.0
Account Holder:Ramesh, Bank: HDFC , Balance: 16000.0
Account Holder:Priya, Bank: SBI , Balance: 21000.0
```

Assignment 2:

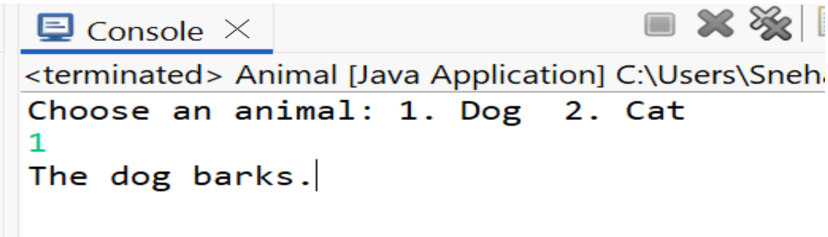
- Write a Java program that demonstrates method overriding by creating a superclass called Animal and two subclasses called Dog and Cat.
- The Animal class should have a method called makeSound(), which simply prints “The animal makes a sound”.
- The Dog and Cat classes should override this method to print “The Cat/ The Dog meows/barks” respectively.
- The program should allow the user to create and display objects of each class.

Source Code:

```
package labque;

import java.util.Scanner;

class Animal {
    public void makeSound() {
        System.out.println("The animal makes a sound.");
    }
}
```

```
class Dog extends Animal {
    @Override
    public void makeSound() {
        System.out.println("The dog barks.");
    }
}

class Cat extends Animal {
    @Override
    public void makeSound() {
        System.out.println("The cat meows.");
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.println("Choose an animal: 1. Dog  2. Cat");
        int choice = sc.nextInt();

        Animal animal;
        if (choice == 1) {
            animal = new Dog();
        } else if (choice == 2) {
            animal = new Cat();
        } else {
            animal = new Animal();
        }

        animal.makeSound();
        sc.close();
    }
}
```

Output:



```
<terminated> Animal [Java Application] C:\Users\Sneh
Choose an animal: 1. Dog  2. Cat
1
The dog barks.
```