**Lab - ANP-C9531 - OOPS**

**Assignment-1.**

**● Create a BankAccount class that**

**● BankAccount class should have three fields accoundHolderName (String), bankName(String), accountBalance(double).**

**● Create a constructor that takes account holder’s name, bankname 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 withdifferent account holders names and ICICI, HDFC and SBI as banknames.**

**● Deposit and withdraw money for each account. Displaytheaccount balance.**

**CODE:**

**package assigmnet4;**

**class BankAccount {**

**private String accountHolderName;**

**private String bankName;**

**private double accountBalance;**

**// Constructor to initialize the account details**

**public BankAccount(String accountHolderName, String bankName, double initialBalance) {**

**this.accountHolderName = accountHolderName;**

**this.bankName = bankName;**

**this.accountBalance = initialBalance;**

**}**

**// Method to get the current balance**

**public double getBalance() {**

**return accountBalance;**

**}**

**// Method to deposit money into the account**

**public void deposit(double amount) {**

**if (amount > 0) {**

**accountBalance += amount;**

**System.out.println("Deposited " + amount + " to " + accountHolderName + "'s account.");**

**} else {r**

**System.out.println("Deposit amount must be positive.");**

**}**

**// Method to withdraw money from the account**

**public void withdraw(double amount) {**

**if (amount > 0 && amount <= accountBalance) {**

**accountBalance -= amount;**

**System.out.println("Withdrew " + amount + " from " + accountHolderName + "'s account.");**

**} else {**

**System.out.println("Insufficient balance or invalid amount.");**

**}**

**}**

**}**

**public class Main {**

**public static void main(String[] args) {**

**// Create three bank accounts with different account holders and banks**

**BankAccount account1 = new BankAccount("Alice", "ICICI", 1000.0);**

**BankAccount account2 = new BankAccount("Bob", "HDFC", 2000.0);**

**BankAccount account3 = new BankAccount("Charlie", "SBI", 3000.0);**

**// Deposit and withdraw money for each account**

**account1.deposit(500.0);**

**account1.withdraw(200.0);**

**System.out.println(account1.accountHolderName + "'s balance: " + account1.getBalance());**

**account2.deposit(1000.0);**

**account2.withdraw(500.0);**

**System.out.println(account2.accountHolderName + "'s balance: " + account2.getBalance());**

**account3.deposit(1500.0);**

**account3.withdraw(1000.0);**

**System.out.println(account3.accountHolderName + "'s balance: " + account3.getBalance());**

**}**

**}**

**Output :**

**Deposited 500.0 to Alice's account.**

**Withdrew 200.0 from Alice's account.**

**Alice's balance: 1300.0**

**Deposited 1000.0 to Bob's account.**

**Withdrew 500.0 from Bob's account.**

**Bob's balance: 2500.0**

**Deposited 1500.0 to Charlie's account.**

**Withdrew 1000.0 from Charlie's account.**

**Charlie's balance: 3500.0**

**Assignment-2.**

**● Write a Java program that demonstrates method overridingbycreating a superclass called Animal and two subclasses calledDogand Cat.**

**● The Animal class should have a method called makeSound(), whichsimply prints "The animal makes a sound."**

**● The Dog and Cat classes should override this method to print "TheCat/The dog meows/barks" respectively.**

**● The program should allow the user to create and display objectsof each class.**

**Code :**

**// Superclass Animal**

**class Animal {**

**// Method to make a sound**

**public void makeSound() {**

**System.out.println("The animal makes a sound.");**

**}**

**}**

**// Subclass Dog, extending Animal**

**class Dog extends Animal {**

**// Override makeSound method for Dog**

**@Override**

**public void makeSound() {**

**System.out.println("The dog barks.");**

**}**

**}**

**// Subclass Cat, extending Animal**

**class Cat extends Animal {**

**// Override makeSound method for Cat**

**@Override**

**public void makeSound() {**

**System.out.println("The cat meows.");**

**}**

**}**

**// Main class**

**public class Main {**

**public static void main(String[] args) {**

**// Create instances of Animal, Dog, and Cat**

**Animal genericAnimal = new Animal();**

**Dog dog = new Dog();**

**Cat cat = new Cat();**

**// Displaying sound for each object**

**System.out.println("Animal Sound:");**

**genericAnimal.makeSound(); // Calls Animal's makeSound()**

**System.out.println("Dog Sound:");**

**dog.makeSound(); // Calls Dog's makeSound()**

**System.out.println("Cat Sound:");**

**cat.makeSound(); // Calls Cat's makeSound()**

**}**

**}**

**Output :**

**Animal Sound:**

**The animal makes a sound.**

**Dog Sound:**

**The dog barks.**

**Cat Sound:**

**The cat meows.**