

INSTITUTE OF ENGINEERING & MANAGEMENT

Department of Computer Science & Engineering



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Subject Name : OOP Lab

Assignment No. : Day 4

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1. Design a class to represent a Bank Account. Include the following things:

Fields

- Name of the depositor
- Address of the depositor
- Account number
- Balance amount in the account

Methods

- To assign initial values
- To deposit an amount
- To withdraw an amount after checking balance
- To display the name, address, and balance of a customer

From main() method create object and call these methods.

Ans:

```
import java.util.*;

class prog1class2 {
    static String name, address, anumber;
    static int balance;
```

```
prog1class2() {  
    name = address = anumber = "";  
    balance = 0;  
}  
  
void deposit(int x) {  
    balance += x;  
}  
  
void withdraw(int x) {  
    if (balance >= x)  
        balance = balance - x;  
    else  
        System.out.println(x + " is bigger than " + balance);  
}  
  
void display() {  
    System.out.println("The name is " + name);  
    System.out.println("The address is " + address);  
    System.out.println("The account number is " + anumber);  
    System.out.println("The current balance is " + balance);  
}  
}
```

```
class prog1 {
    static Scanner sc = new Scanner(System.in);

    public static void main(String[] args) {
        prog1class2 obj1 = new prog1class2();
        System.out.println("Enter the name, address , account number and account balance in this
order ");
        obj1.name = sc.nextLine();
        obj1.address = sc.nextLine();
        obj1.anumber = sc.nextLine();
        int bal = sc.nextInt();
        obj1.deposit(bal);
        System.out.println("Enter the amount to be withdrawn from the account ");
        int w = sc.nextInt();
        obj1.withdraw(w);
        obj1.display();
    }
}
```

Output:

```
PS D:\College shit\5th sem\OOPs\Day 4> java prog1
Enter the name, address , account number and account balance in this order
Saptarshi Mondal
Bardhaman
12019002002039
420
Enter the amount to be withdrawn from the account
69
The name is Saptarshi Mondal
The address is Bardhaman
The account number is 12019002002039
The current balance is 351
```

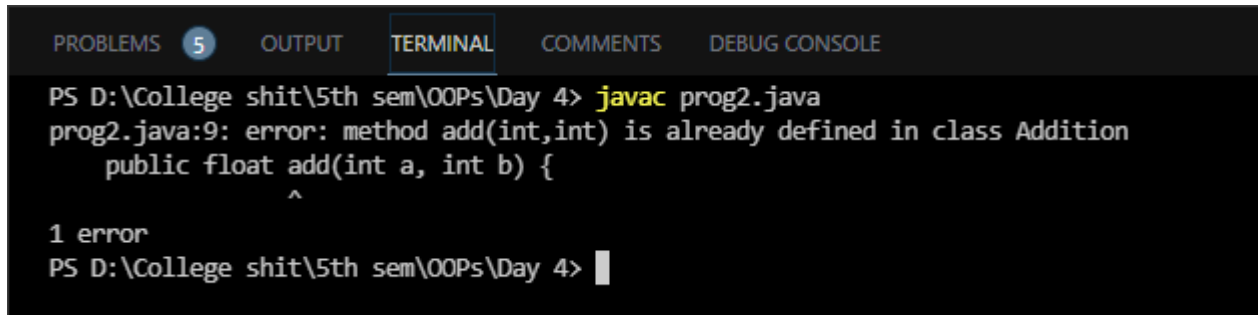
2. Create a class and determine if method overloading holds good for return type of methods or not.

Ans:

```
class Addition {  
  
    public int add(int a, int b) {  
  
        int sum = a + b;  
        return sum;  
    }  
  
    public float add(int a, int b) {  
  
        int sum = a + b;  
        return sum;  
    }  
}  
  
class prog2 {  
    public static void main(String[] args) {  
  
        Addition ob = new Addition();  
        int sum1 = ob.add(1, 2);  
    }  
}
```

```
        System.out.println("sum of the two integer value :" + sum1);  
        float sum2 = ob.add(1, 2);  
        System.out.println("sum of the three integer value :" + sum2);  
    }  
}
```

Output:



The screenshot shows an IDE terminal window with a dark theme. At the top, there is a tab bar with four tabs: 'PROBLEMS' (with a blue circle containing the number 5), 'OUTPUT', 'TERMINAL' (which is selected and highlighted with a blue border), and 'DEBUG CONSOLE'. Below the tabs, the terminal displays the command 'javac prog2.java' and the resulting error message: 'prog2.java:9: error: method add(int,int) is already defined in class Addition'. The error message is followed by a code snippet 'public float add(int a, int b) {' with a caret (^) pointing to the 'add' method name. Below the error message, it says '1 error'. The terminal prompt 'PS D:\College shit\5th sem\OOPs\Day 4>' is visible at the bottom, followed by a cursor.

```
PS D:\College shit\5th sem\OOPs\Day 4> javac prog2.java  
prog2.java:9: error: method add(int,int) is already defined in class Addition  
    public float add(int a, int b) {  
                ^  
1 error  
PS D:\College shit\5th sem\OOPs\Day 4> |
```

3. Overload the constructors for classes Area and Volume of a rectangular figure and display its area and volume. Area is the superclass and Volume is the subclass.

Ans:

```
class Area {
    double length, breadth, area;

    Area(double w, double h) {
        length = w;
        breadth = h;
    }

    Area(double len) {
        length = breadth = len;
    }

    Area() {
        length = breadth = 0;
    }

    double areacalc() {
        return length * breadth;
    }
}
```



```
class Volume extends Area {
    double vol, height;

    Volume(double l, double b, double h) {
        length = l;
        breadth = b;
        height = h;
    }

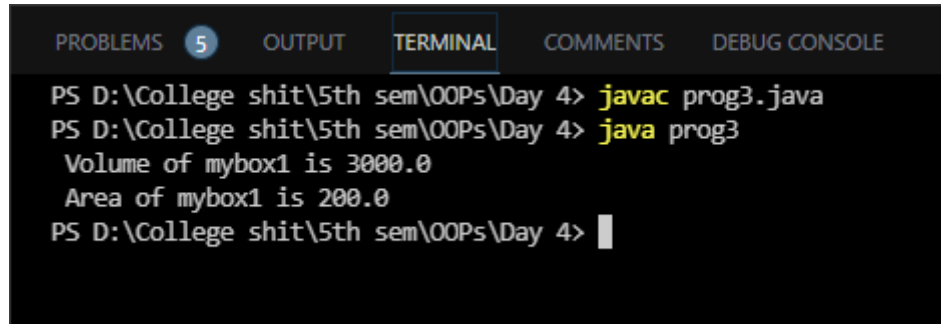
    Volume() {
        height = 0;
    }

    double volcalc() {
        return areacalc() * height;
    }
}

public class prog3 {
    public static void main(String args[]) {
        Volume mybox1 = new Volume(10, 20, 15);
        double vol, areax;
        vol = mybox1.volcalc();
    }
}
```

```
        areax = mybox1.areacalc();  
        System.out.println(" Volume of mybox1 is " + vol);  
        System.out.println(" Area of mybox1 is " + areax);  
    }  
}
```

Output:



The screenshot shows an IDE interface with a terminal window. The terminal has tabs for PROBLEMS (5), OUTPUT, TERMINAL (selected), COMMENTS, and DEBUG CONSOLE. The terminal output shows the execution of a Java program, displaying the volume and area of a box.

```
PS D:\College shit\5th sem\00Ps\Day 4> javac prog3.java  
PS D:\College shit\5th sem\00Ps\Day 4> java prog3  
Volume of mybox1 is 3000.0  
Area of mybox1 is 200.0  
PS D:\College shit\5th sem\00Ps\Day 4> |
```