OOP PRACTICAL 3

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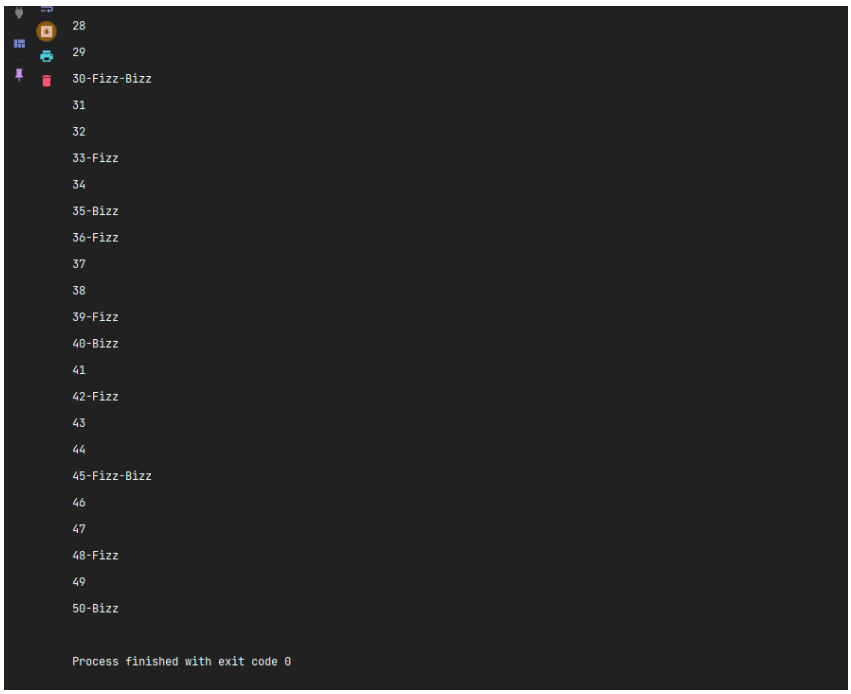
Course Code: 2CS302

Course Name: Object Oriented Programming

Practical-3A

```
import java.util.*;
public class oops_practical {
    public static void main(String[] args) {
        //Prac 3A
        display dis=new display();
        dis.ans();
    }
}
class display{
    void ans(){
        int che=0;
        for(int i=1;i<=50;i++){
            che=0;
            System.out.print(i);
            if(i%3==0 && i%5==0){
                System.out.print("-Fizz-Bizz");
                che=1;
            }
            if(i%3==0 && che==0){
                System.out.print("-Fizz");
            }
            if(i%5==0 && che==0){
                System.out.print("-Bizz");
            }
            System.out.print("\n");
        }
    }
}
}
```

INPUT/OUTPUT



Practical-3B

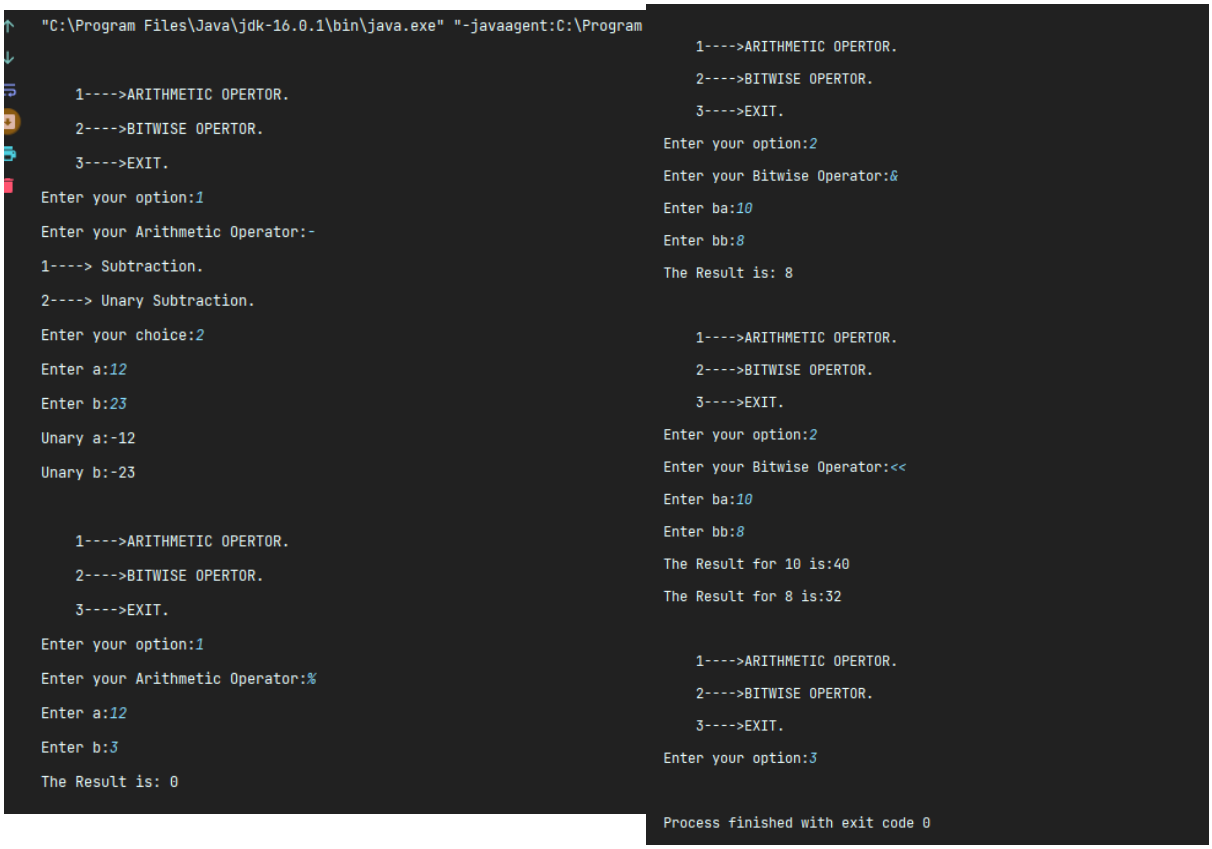
```java
import java.util.*;
public class oops_practical {
    public static void main(String[] args) {
//practical 3B
        Scanner sc=new Scanner(System.in);
        while(true){
            System.out.print("\n\t1---->ARITHMETIC OPERTOR.");
            System.out.print("\n\t2---->BITWISE OPERTOR.");
            System.out.print("\n\t3---->EXIT.");
            System.out.print("\nEnter your option:");
            int ch=sc.nextInt();
            switch(ch){
                case 1:
                    int sum=0;
                    System.out.print("Enter your Arithmetic Operator:");
                    String op=sc.next();
                    switch (op){
                        //Addition
                        case "+":
                            System.out.print("Enter a:");
                            int a=sc.nextInt();
                            System.out.print("Enter b:");
                            int b=sc.nextInt();
                            sum=a+b;
                            System.out.println("The Result is: "+sum);
                            break;
                        //Subtraction
                        case "-":
                            System.out.print("1----> Subtraction.\n");
                            System.out.print("2---->  Unary Subtraction.\n");
                            System.out.print("Enter your choice:");
                            int c1=sc.nextInt();
                            System.out.print("Enter a:");
                            int a1=sc.nextInt();
                            System.out.print("Enter b:");
                            int b1=sc.nextInt();
                            switch (c1){
                                case 1:
                                    sum=a1-b1;
                                    System.out.print("The Result is: "+sum);
                                    break;
                                case 2:
                                    int c=-a1;
                                    int d=-b1;
                                    System.out.println("Unary a:"+c);
                                    System.out.println("Unary b:"+d);
                                    break;
                                default:
                                    System.out.println("Wrong choice!!");

                            }
```

```
                    break;
                //Multiplication
                case "*":
                    System.out.print("Enter a:");
                    int a2=sc.nextInt();
                    System.out.print("Enter b:");
                    int b2=sc.nextInt();
                    sum=a2*b2;
                    System.out.println("The Result is: "+sum);
                    break;
                //Division(Quotient)
                case "/":
                    System.out.print("Enter a:");
                    int a3=sc.nextInt();
                    System.out.print("Enter b:");
                    int b3=sc.nextInt();
                    sum=a3/b3;
                    System.out.println("The Result is: "+sum);
                    break;
                //Division(Remainder)
                case "%":
                    System.out.print("Enter a:");
                    int a4=sc.nextInt();
                    System.out.print("Enter b:");
                    int b4=sc.nextInt();
                    sum=a4%b4;
                    System.out.println("The Result is: "+sum);
                    break;
                default:
                    System.out.print("Wrong Arithematic Operator.");
                    break;
            }
            break;
        case 2:
            int sum1=0;
            int sum2=0;
            System.out.print("Enter your Bitwise Operator:");
            String bop=sc.next();
            switch(bop){
                //Bitwise OR
                case "|":
                    System.out.print("Enter ba:");
                    int ba=sc.nextInt();
                    System.out.print("Enter bb:");
                    int bb=sc.nextInt();
                    sum1=ba|bb;
                    System.out.println("The Result is: "+sum1);
                    break;
                //Bitwise AND
                case "&":
                    System.out.print("Enter ba:");
                    int ba1=sc.nextInt();
                    System.out.print("Enter bb:");
                    int bb1=sc.nextInt();
                    sum1=ba1&bb1;
                    System.out.println("The Result is: "+sum1);
                    break;
                //Botwise XOR
                case "^":
                    System.out.print("Enter ba:");
                    int ba2=sc.nextInt();
                    System.out.print("Enter bb:");
                    int bb2=sc.nextInt();
                    sum1=ba2^bb2;
                    System.out.println("The Result is "+sum1);
                    break;
                //Bitwise Complement
                case "~":
```

```
                        System.out.print("Enter ba:");
                        int ba3=sc.nextInt();
                        System.out.print("Enter bb:");
                        int bb3=sc.nextInt();
                        sum2=~ba3;
                        sum1=~bb3;
                        System.out.println("The Result for "+ba3+" is:"+sum2);
                        System.out.println("The Result for "+bb3+" is:"+sum1);
                        break;
                    //Bitwise Left shift
                    case "<<":
                        System.out.print("Enter ba:");
                        int ba4=sc.nextInt();
                        System.out.print("Enter bb:");
                        int bb4=sc.nextInt();
                        sum2=ba4<<2;
                        sum1=bb4<<2;
                        System.out.println("The Result for "+ba4+" is:"+sum2);
                        System.out.println("The Result for "+bb4+" is:"+sum1);
                        break;
                    //Bitwise Right Wise
                    case ">>":
                        System.out.print("Enter ba:");
                        int ba5=sc.nextInt();
                        System.out.print("Enter bb:");
                        int bb5=sc.nextInt();
                        sum2=ba5>>2;
                        sum1=bb5>>2;
                        System.out.println("The Result for "+ba5+" is:"+sum2);
                        System.out.println("The Result for "+bb5+" is:"+sum1);
                        break;
                        //Increment
                    case "++":
                        System.out.print("Enter ba:");
                        int ba6=sc.nextInt();
                        System.out.print("Enter bb:");
                        int bb6=sc.nextInt();
                        sum1=ba6++;
                        sum2=bb6++;
                        System.out.println("The Result for "+ba6+" is:"+sum2);
                        System.out.println("The Result for "+bb6+" is:"+sum1);
                        break;
                    case "--":
                        System.out.print("Enter ba:");
                        int ba7=sc.nextInt();
                        System.out.print("Enter bb:");
                        int bb7=sc.nextInt();
                        sum1=ba7--;
                        sum2=bb7--;
                        System.out.println("The Result for "+ba7+" is:"+sum2);
                        System.out.println("The Result for "+bb7+" is:"+sum1);
                        break;
                    default:
                        System.out.print("Wrong Bitwise Operator.");
                }
                break;
            case 3:
                System.exit(0);
            default:
                System.out.print("Wrong choice!!");
                break;
        }
    }
}
}
```

INPUT/OUTPUT



```
"C:\Program Files\Java\jdk-16.0.1\bin\java.exe" "-javaagent:C:\Program

    1---->ARITHMETIC OPERTOR.
    2---->BITWISE OPERTOR.
    3---->EXIT.
Enter your option:1
Enter your Arithmetic Operator:-
1----> Subtraction.
2----> Unary Subtraction.
Enter your choice:2
Enter a:12
Enter b:23
Unary a:-12
Unary b:-23

    1---->ARITHMETIC OPERTOR.
    2---->BITWISE OPERTOR.
    3---->EXIT.
Enter your option:1
Enter your Arithmetic Operator:%
Enter a:12
Enter b:3
The Result is: 0

    1---->ARITHMETIC OPERTOR.
    2---->BITWISE OPERTOR.
    3---->EXIT.
Enter your option:2
Enter your Bitwise Operator:&
Enter ba:10
Enter bb:8
The Result is: 8

    1---->ARITHMETIC OPERTOR.
    2---->BITWISE OPERTOR.
    3---->EXIT.
Enter your option:2
Enter your Bitwise Operator:<<
Enter ba:10
Enter bb:8
The Result for 10 is:40
The Result for 8 is:32

    1---->ARITHMETIC OPERTOR.
    2---->BITWISE OPERTOR.
    3---->EXIT.
Enter your option:3

Process finished with exit code 0
```

Practical-3C

```
import java.util.*;
public class oops_practical {
    public static void main(String[] args) {
        //Practical 3C
        Scanner sc=new Scanner(System.in);
        Scanner cs=new Scanner(System.in);

System.out.print("**********************************************************************
**********");

System.out.print("\n**********************************************************************
**********\n");
        System.out.print("Roll No:-");
        String r=sc.next();
        System.out.print("Semester:-");
        int s=sc.nextInt();
        System.out.print("Name:-");
```

```
        String n1=cs.nextLine();

System.out.print("**************************************************************
**********");

System.out.print("\n**************************************************************
***********\n");
        System.out.println("Marks:");
        System.out.print("Enter your marks for Maths:");
        float sub1=sc.nextFloat();
        if(sub1<0 || sub1>100){
            System.out.println("Wrong marks!!!");
            System.exit(0);
        }
        System.out.print("Enter your marks for Physics:");
        float sub2=sc.nextFloat();
        if(sub2<0 || sub2>100){
            System.out.println("Wrong marks!!!");
            System.exit(0);
        }
        System.out.print("Enter your marks for Chemistry:");
        float sub3=sc.nextFloat();
        if(sub3<0 || sub3>100){
            System.out.println("Wrong marks!!!");
            System.exit(0);
        }
        System.out.print("Enter your marks for Biology:");
        float sub4=sc.nextFloat();
        if(sub4<0 || sub4>100){
            System.out.println("Wrong marks!!!");
            System.exit(0);
        }
        System.out.print("Enter your marks for English:");
        float sub5=sc.nextFloat();
        if(sub5<0 || sub5>100){
            System.out.println("Wrong marks!!!");
            System.exit(0);
        }

System.out.print("**************************************************************
**********");

System.out.print("\n**************************************************************
***********\n");
        System.out.println("Report Card of "+n1);
        System.out.println("Roll No:"+r);
        System.out.println("Semester:"+s);
        float avg=(sub1+sub2+sub3+sub4+sub5)/5.0f;
        if(90<=avg && avg<=100){
            System.out.println("Grade is A+");
            System.out.println("Percentage is:"+avg);
        }
        else if(80<=avg && avg<90){
            System.out.println("Grade is A");
            System.out.println("Percentage is:"+avg);
        }
        else if(70<=avg && avg<80){
            System.out.println("Grade is B+");
            System.out.println("Percentage is:"+avg);
        }
        else if(60<=avg && avg<70){
            System.out.println("Grade is B");
            System.out.println("Percentage is:"+avg);
        }
        else if(50<=avg && avg<60){
            System.out.println("Grade is C+");
            System.out.println("Percentage is:"+avg);
        }
```

```
        else if(40<=avg && avg<50){
            System.out.println("Grade is C");
            System.out.println("Percentage is:"+avg);
        }
        else{
            System.out.println("You Failed!");
            System.out.println("Percentage is:"+avg);
        }
    }
    }
```

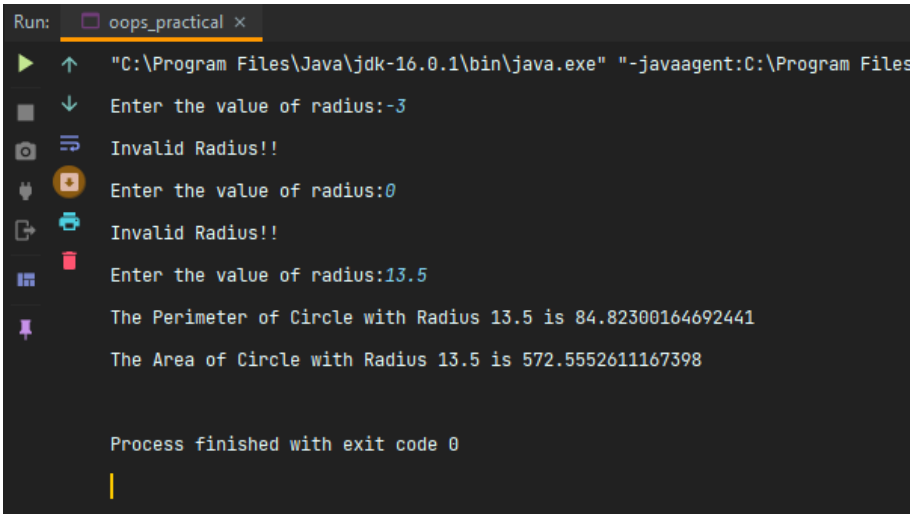
Input/Output:

```
*******************************************************************************
*******************************************************************************
Roll No:- 220bce057
Semester:-3
Name:- Devasy
*******************************************************************************
*******************************************************************************
Marks:
Enter your marks for Maths:99
Enter your marks for Physics:98
Enter your marks for Chemistry:99
Enter your marks for Biology:98
Enter your marks for English:96
*******************************************************************************
*******************************************************************************
Report Card of Aryan Pandi
Roll No:20BCE020
Semester:3
Grade is A+
Percentage is:98.0
```

Practical-3D

```
import java.util.*;
public class oops_practical {
    public static void main(String[] args) {
        //Prac 3D
        Scanner sc=new Scanner(System.in);
        double area,perimeter;
        double rad;
        do{
            System.out.print("Enter the value of radius:");
             rad = sc.nextDouble();
            if (rad <= 0) {
                System.out.println("Invalid Radius!!");
            }
        }while(rad<=0);
            perimeter=Math.PI*rad*2;
            area=Math.PI*rad*rad;
            System.out.println("The Perimeter of Circle with Radius "+rad+" is
"+perimeter);
            System.out.println("The Area of Circle with Radius "+rad+" is "+area);
    }
    }
```

INPUT/OUTPUT



THEORETICAL PRINCIPLES USED:

This is the simple program for calculating the perimeter and area of the circle with the value of radius taken from the user. The do while loop is there to take input from user till user has input a radius > 0.