EX NO: 1(a)

DATE:

OPERATORS

Aim:

To write a java program using operators

Algorithm:

Step1: start the process

Step 2: Create a Class and Objects for the program.

Step 3: Get the user input values.

Step 4: To perform operators like Arithmetic operator, Relational operator, Assignment Operator, Logical operator,ternary operator,Unary Operator,bitwise and shift operator by calling objects.

Step 5: Displaying all the operators is executed successfully.

Step 6: Create an another class for the control statement

Step 7: select user choice to perform operations like

1. Fibanocci series
2. Palindrome number
3. Prime number
4. Exit

Step 8: If user choice is 1, Go to fibanocci series, and get the value from user for n to Display the fibanocci number.

Step 9: If user choice is 2, then go to the palindrome number and check whether the given Number is palindrome or not.

Step 10: If user choice is 3, go to the prime number and get the value from user for n, to Display the n number of prime number.

Step 11: To display the result, Stop the process.

CODING:

```
package experiment_1;

import java.util.Scanner;

public class operator2 {

public static void main(String[] args) {
		Scanner sc=new Scanner(System.in);
		operator2 obj1=new operator2();
		System.out.println("Enter the value a: ");
		int a=sc.nextInt();
		System.out.println("\nEnter the value b: ");
		int b=sc.nextInt();
		System.out.println("Enter the value c: ");
		int c=sc.nextInt();
		obj1.arithmetic(a,b);
		obj1.relational(a,b);
		obj1.assignment(a);
		obj1.logical(a,b,c);
		obj1.Unary(a);
		obj1.ternary(a,b);
		obj1.bitwise(a,b);
		obj1.shift(a,b);

		}
		public void arithmetic(int a,int b)
		{
		System.out.println("\nArithmetic Operators\n");
		System.out.println("a+b= "+(a+b));
		System.out.println("a-b= "+(a-b));
		System.out.println("a*b= "+(a*b));
		System.out.println("a/b= "+(a/b));
		System.out.println("a%b= "+(a%b));
		}
		public void relational(int a,int b)
		{
		System.out.println("\nRelational Operators");
		System.out.println("a==b "+ (a == b));
		System.out.println("a!=b "+(a != b));
		System.out.println("a>b "+(a > b));
		System.out.println("a<b "+(a < b));
		System.out.println("a>=b "+(a >= b));
		System.out.println("a<=b "+(a <= b));
		}
		public void assignment(int a)
		{
		 System.out.println("\nAssignment operators\n");
		 int var=a;
```

```
 System.out.println("var using =: " + var);
 var += a;
 System.out.println("var using +=: " + var);
 var *= a;
 System.out.println("var using *=: " + var);
 }
public void logical(int a,int b,int c)
{
 System.out.println("\nLogical operators");
 System.out.println("(a > b) && (a > c)= "+((a > b) && (a >       c)));
  System.out.println("(a > b) && (a < c)= "+((a > b) && (a < c)));
  System.out.println("(a < b) || (a > b)= "+((a < b) || (a > b)));
  System.out.println("(a > b) || (a < b)= "+((a > b) || (a < b)));
  System.out.println("!(a == b)= "+!(a == b));
}
public void Unary(int a)
{
  System.out.println("\nUnary operators");
  int result1, result2;
  System.out.println("Value of a: " + a); // increment operator
  result1 = ++a;
  System.out.println("After increment: " + result1);
  System.out.println("Value of a: " + a);// decrement operator
  result2 = --a;
  System.out.println("After decrement: " + result2);
}
public void ternary(int a,int b)
{
        int res=(a>b)?a:b;
        System.out.println("\nTernary Operators");
        System.out.println("Greater number is: "+res);
}
public void bitwise(int a,int b)
{
        System.out.println("\nBitwise Operators");
        System.out.println("a&b = " + (a & b));
        System.out.println("a|b = " + (a | b));
        System.out.println("a^b = " + (a ^ b));
        System.out.println("~a = " + ~a);
        a &= b;
        System.out.println("a= " + a);
}
public void shift(int a,int b)
{
        System.out.println("\n Shift Operators");
        System.out.println("a= "+a+"\t a<<2= ");
        System.out.println(a<<2);
        System.out.println("a= "+a+"\t a>>2= ");
        System.out.println(a>>2);
}}
```

OUTPUT:

```
Enter the value a:
10
Enter the value b:
5
Enter the value c:
2
```

Arithmetic Operators

```
a+b= 15
a-b= 5
a*b= 50
a/b= 2
a%b= 0
```

Relational Operators

```
a==b false
a!=b true
a>b true
a<b false
a>=b true
a<=b false
```

Assignment operators

```
var using =: 10
var using +=: 20
var using *=: 200
```

Logical operators

```
(a > b) && (a > c)= true
(a > b) && (a < c)= false
(a < b) || (a > b)= true
(a > b) || (a < b)= true
!(a == b)= true
```

Unary operators

```
Value of a: 10
After increment: 11
Value of a: 11
After decrement: 10
Ternary Operators
Greater number is: 10
```

Bitwise Operators

```
a&b = 0
a|b = 15
a^b = 15
~a = -11
a= 0
```

Shift Operators

```
a= 10    a<<2= 40
 a= 10   a>>2= 2
```

1(b)CONTROL STATEMENTS

CODING:

```
 package experiment_1;
import java.util.*;
public class controlstatements {
static Scanner scan=new Scanner(System.in);
public static void main(String[] args) {

    System.out.println("1.Fibonaci\n 2.Palindrome\n 3.Prime number\n 0.Exit");
    int choice;
    do {
    System.out.println("Enter the choice:");
    choice=scan.nextInt();
    int n;

    switch(choice) {
    case 1:{
    System.out.println("The Fibonaci Series");
    System.out.println("Enter the n");
    n=scan.nextInt();
    fibonaci(n);break;
    }
    case 2:{
    System.out.println("Palindrome number");
    palindrome();break;
    }
    case 3:{
    System.out.println("The Prime Series");
    System.out.println("Enter the n");
    n=scan.nextInt();prime(n);
    }
    default:System.out.println("Exit");break;
    }
    }while(choice!=0);
    }
    public static int fibonaci(int n) {
    int a=0;
    int b=1;
    int c=0;
    System.out.print(a+" "+b+" ");
    for(int i=3;i<=n;i++) {
    c=a+b;
    System.out.print(c+" ");
    a=b;
    b=c;
    }
    System.out.println();
    return 0;
    }
    public static void palindrome() {
```

```
System.out.println("Enter the number:");
int a=scan.nextInt();
int r,s=0,t=a;
while(a>0) {
r=a%10;
s=(s*10)+r;
a/=10;
}
if(t==s) {
System.out.println("palindrome");
}
else {
System.out.println("not palindrome");
}
}
public static void prime(int n) {
int i=0;
do {

if(i%2!=0) {
System.out.print(i + " ");
}
i++;
}while(i<=n);
}
}
```

OUTPUT:

```
 1.Fibonaci
 2.Palindrome
 3.Prime number
 4.Exit
Enter the choice:
1
The Fibonaci Series
Enter the n
3
0 1 1
Enter the choice:
2
Palindrome number
Enter the number:
143
not palindrome
Enter the choice:
3
The Prime Series
Enter the n
1 3 5
Exit
```

Result:

Thus the program by using operators and control statements is executed successfully.