Lab Programs:

1.a Write a java program that takes two integer operands and one operator from the user, perform Arithmetic operations and then prints the result.

```
package jk;
import java.util.Scanner;
public class First
{

	public static void main(String[] args)
	{
		int a,b;
		String ch;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a and b values");
		  a=sc.nextInt();
		  b=sc.nextInt();
		System.out.println("Enter choice");
		  ch=sc.next();
		switch(ch)
		{
		case "+": System.out.println(a+b); break;
		case "-": System.out.println(a-b); break;
		case "*": System.out.println(a*b); break;
		case "/": System.out.println((float)a/(float)b); break;
		case "%": System.out.println(a%b); break;
		default: System.out.println("Invalid operator"); break;
		}
	}

}
```

```
Enter a and b values
10
3
Enter choice
/
3.3333333
```

1.b Write a java program to print the first n terms of Fibonacci series.

```
package jk;
import java.util.Scanner;
public class Fib
{
	public static void main(String[] args)
	{
		int n,i,first,second,next;

		System.out.println("enter the value of n");
		Scanner sc=new Scanner(System.in);
		n=sc.nextInt();

		first=0;
		second=1;

		System.out.println("Fibonacci numbers are:\n");

		System.out.print(first+"\t"+second);

		for(i=2;i<=n-1;i++)
		{
		next=first+second;
		System.out.print("\t"+next);
		first=second;
		second=next;
		}
	}
}
```

```
enter the value of n
6
Fibonacci numbers are:

0	1	1	2	3	5
```

2.a Write a Java program to demonstrate method overloading to create a class called Calculator with three methods named Demo with different type of parameters and print the computed results.

```
package jk;

import java.util.Scanner;

public class Calculator
{
	int a;

	void Demo(int a,int b)
	{
	 System.out.print((a+b)+"\t"+(a-b)+"\t"+(a*b)+"\t"+((float)a/(float)b)+"\n");
	}
	void Demo(int a,int b,int c)
	{
	 System.out.print((a+b+c)+"\t"+(a-b-c)+"\t"+(a*b*c)+"\t"+((float)a/(float)b/(float)c)+"\n");
	}
	void Demo(int a,int b,int c,int d)
	{
	System.out.print((a+b+c+d)+"\t"+(a-b-c-d)+"\t"+(a*b*c*d)+"\t"+((float)a/(float)b/(float)c/(float)d));
	}

	public static void main( String s[ ] )
	   {
	        Calculator obj = new Calculator();
	        int a,b,c,d;

	       Scanner sc=new Scanner(System.in);
	       System.out.println("Enter the values of a,b,c,d");

	        a=sc.nextInt();   b=sc.nextInt();
	        c=sc.nextInt();   d=sc.nextInt();

	       obj.Demo(a,b);
	       obj.Demo(a,b,c);
	       obj.Demo(a,b,c,d);
	   }
}
```

Output:

```
Enter the values of a,b,c,d
1 2 3 4
3       -1      2       0.5
6       -4      6       0.16666667
10      -8      24      0.041666668
```

2.b Write a Java program to demonstrate constructor overloading to calculate the area of a rectangle and circle.

```
package jk;

public class Area
{
 int r,l,b;
       Area (int r)
       {
              this.r=r;
       }
       Area (int l,int b)
       {
              this.l=l;
              this.b=b;
       }
       public static void main(String[] args)
       {
       Area obj1=new Area(2);
       Area obj2=new Area(3,4);

       System.out.println("Area of a Circle:");
          System.out.println(3.142*obj1.r*obj1.r);
       System.out.println("Area of a Rectangle:");
          System.out.println(obj2.l*obj2.b);
       }
}
```

```
//we can also write without using this keyword
Area (int rad)
{
  r = rad ;
}
Area(int len , int br )
{
  l=len ; b=br ;
}
```

Output:

```
Area of a Circle:
12.568
Area of a Rectangle:
12
```