```
import java.util.*;
interface Defination
{   public void Add();
 public void Sub();
 public void Multi();
 public void SinValue();
    public void CosValue();
 public void TanValue();
 public void LogValue();
 public void Factorial();
 public void Swap();
 public void SquareRoot();
}
class Operation implements Defination
{   public void Add()
 {
  Scanner obj = new Scanner(System.in);
  int input,total=0;
  System.out.println("Enter The Range Of Number For Addition : ");
  try{
  input=obj.nextInt();

     int[] range=new int [input];
  for(int i=0;i<input;i++)
  {
        System.out.print("Enter The Number : ");
        range[i]=obj.nextInt();

   total=total+range[i];
  }
```

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 System.out.print("Entered Number Is :");
 for(int i=0;i<input;i++)
 {
  System.out.print(range[i]+" ");
 }
      System.out.println("Sum Of Input Numbers Is : "+total);
 }
  catch(Exception e)
 {
  System.out.println("Please Enter Valid Number !!");
 }

}
public void Sub()
{   int Total,input,input2;
 Scanner obj = new Scanner(System.in);
 System.out.println("Enter The Two Number for Subtract :");
 System.out.print("Enter The 1st Number : ");
 input=obj.nextInt();
    System.out.print("Enter The 2nd Number : ");
    input2=obj.nextInt();

   Total=input-input2;
   System.out.println("The Subtraction of "+input2+" - "+input+" is : "+Total);



}
public void Multi()
{   int i,Total=1,input;
 Scanner obj = new Scanner(System.in);
```

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System.out.println("Enter The Range Of Number For Multiplcation : ");
 input=obj.nextInt();
 int[] range=new int [input];
for(i=0;i<input;i++)
{   System.out.print("Enter The Number : ");
      range[i]=obj.nextInt();
 Total=Total*range[i];
}
System.out.print("Entered Number are :");
for(i=0;i<input;i++)
{
 System.out.print(range[i]+" ");
}
     System.out.println("\nMultiplication Of Input Numbers Is : "+Total);
}
public void SinValue()
{   Scanner obj=new Scanner(System.in);
  System.out.print("Find The Value Sine ");
  System.out.println("Enter the Choice :");
  System.out.println("1. Enter the value in Degree.");
  System.out.println("2. Enter the value in Radian.");
  int input =obj.nextInt();
  double output,input2;
  if(input==1)
  {
      System.out.println("Enter The Angle :");
   input2 =obj.nextDouble();
  double degree=Math.toRadians(input2);
  output=Math.sin(degree);
  System.out.println("The Value of Sin("+input2+") is "+output);
  }
```

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 else if(input==2)
 {
 System.out.println("Enter The Angle :");
  input2 =obj.nextInt();
 output=Math.sin(input2);
 System.out.println("The Value of Sin("+input2+") is "+output);
 }
 else
 {
  System.out.println("! Please Enter valid Nubmer !");
 }
}
  public void CosValue()
{   Scanner obj=new Scanner(System.in);
 System.out.print("Find The Value Cosine ");
 System.out.println("Enter the Choice :");
 System.out.println("1. Enter the value in Degree.");
 System.out.println("2. Enter the value in Radian.");
 int input =obj.nextInt();
 double output,input2;
 if(input==1)
 {
     System.out.println("Enter The Angle :");
  input2 =obj.nextDouble();
 double degree=Math.toRadians(input2);
 output=Math.cos(degree);
 System.out.println("The Value of Cos("+input2+") is "+output);
  }
 else if(input==2)
 {
 System.out.println("Enter The Angle :");
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   input2 =obj.nextInt();
  output=Math.cos(input2);
  System.out.println("The Value of Cos("+input2+") is "+output);
  }
  else
  {
   System.out.println("! Please Enter valid Nubmer !");
  }
}
public void TanValue()
{   Scanner obj=new Scanner(System.in);
  System.out.print("Find The Value Tangent ");
  System.out.println("Enter the Choice :");
  System.out.println("1. Enter the value in degree.");
  System.out.println("2. Enter the value in Radian.");
  double input =obj.nextInt();
  double output,input2;
  if(input==1)
  {  System.out.println("Enter The Angle :");
   input2 =obj.nextDouble();
  double degree=Math.toRadians(input2);
  output=Math.tan(degree);
  System.out.println("The Value of Tan("+input2+") is "+output);
  }
  else if(input==2)
  {  System.out.println("Enter The Angle :");
   input2 =obj.nextInt();
  output=Math.tan(input2);
  System.out.println("The Value of Tan("+input2+") is "+output);
  }
  else
```

```
 {
      System.out.println("! Please Enter valid Nubmer !");
 }
}
public void LogValue()
{   double output,input;
 Scanner obj = new Scanner(System.in);
 System.out.println("<---- Find a value oF Log (Base 10) ---->\nEnter The Number : ");
 input =obj.nextDouble();
 output = Math.log10(input);
 System.out.println("The Value of Log10("+input+") is "+output);
}
public void Factorial()
{  System.out.println("Find a Factorial, Enter The Number : ");
 Scanner obj= new Scanner(System.in);
 long  input=obj.nextInt();
 long  factorial=1;
 for(long j=input;j>=1;j--)
 {
  factorial=factorial*j;
 }
 System.out.println("The Factorial OF "+input+" is "+factorial);
}
public void Swap()
{  System.out.println(" Enter The Two Number : ");
 Scanner obj= new Scanner(System.in);
 System.out.print("Enter The Value Of A : ");
 int input=obj.nextInt();
 System.out.print("Enter The Value Of B : ");
 int input2=obj.nextInt();
 input =input+input2;
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 input2=input-input2;
 input = input-input2;
 System.out.println("The Value Of A : "+input+"\nThe Value Of B : "+input2);
}
 public void SquareRoot()
{    Scanner obj=new Scanner(System.in);
   System.out.print("Enter The Number For SquareRoot Value ");
   double input =obj.nextInt();
   double output = Math.sqrt(input);
   System.out.println("The squareRoot value of "+input+" is "+output);
 }
}
class Choice extends Operation
{
public void Disp()
  {
   Scanner obj=new Scanner(System.in);
   loop: while(true)
     {
 System.out.println("\n\nPlease Chose The operation :\n");
 System.out.println(" 1. Addition");
 System.out.println(" 2. Subtraction");
 System.out.println(" 3. Multiplication");
 System.out.println(" 4. Value Of Sin");
   System.out.println(" 5. Value Of Cos");
 System.out.println(" 6. Value Of Tan");
 System.out.println(" 7. Value Of Log");
 System.out.println(" 8. Factorial");
 System.out.println(" 9. Swaping");
 System.out.println(" 10.SquareRoot");
 System.out.println(" 11.Exit\n");
```

```
System.out.print("Enter The choice Number : ");
int input =obj.nextInt();
switch(input)
      {    case 1:
   Add();
      break ;
     case 2:
       Sub();
      break;
     case 3:
      Multi();
    break;
     case 4:
    SinValue();
   break;
     case 5:
      CosValue();
    break;
  case 6:
     TanValue();
     break;
  case 7:
      LogValue();
   break;
   case 8:
    Factorial();
     break;
  case 9:
     Swap();
     break;
  case 10:
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      SquareRoot();
      break;
    case 11:
      break loop;
       default :
     System.out.println("!Please Enter  Valid Number !");
    }
     }
 }
}
public class calculator
{
 public static void main(String[] arg)
 {
  Choice obj=new Choice();
  obj.Disp();
 }
}
```