

```
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```

```
// 1. Print 1 to n without using loops
```

```
import java.util.Scanner;
class PrintNum{

    static void printN(int n){

        if( n<=0 ){

            return;
        }

        printN(n-1);
        System.out.print(n + " ");

    }

    public static void main(String args[]){

        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the Number n :");
        int a = sc.nextInt();

        System.out.println("Numbers from 1 to " + a + ":");

        printN(a);

    }

    -----
```

```
//2. Sum of natural numbers using recursion
```

```
import java.util.Scanner;
class SumNum{

    static int sum(int n){

        if(n==0){

            return 0;

        }
        else{

            return n + sum(n-1);

        }

    }

}
```

```
public static void main(String args[]){

    Scanner sc = new Scanner(System.in);
    System.out.println("Enter a number : ");
    int a = sc.nextInt();
```

```
    int res = sum(a);
```

```
    System.out.println("your result is : "+res);
```

```
}
```

```
}
```

```
// 3. Mean of Array using Recursion
```

```
import java.util.Scanner;
```

```
class MeanArray
```

```
{
```

```
    static int avgArray(int arr[],int size)
```

```
    {
```

```
        int sum=0;
```

```
        if(size<=0)
```

```
        {
```

```
            return sum;
```

```
        }
```

```
        else
```

```
        {
```

```
            sum = arr[size-1]+avgArray(arr,size-1);
```

```
        }
```

```
        return sum;
```

```
    }
```

```
public static void main(String arg[])
```

```
{
```

```
    Scanner sc = new Scanner(System.in);
```

```
    System.out.println("Enter the size of an Array: ");
```

```
    int size = sc.nextInt();
```

```
    int arr[] = new int[size];
```

```
    System.out.println("Enter the array elements");
```

```
    for(int i=0; i<arr.length;i++)
```

```
    {
```

```
        arr[i]=sc.nextInt();
```

```
    }
```

```
    int avg = avgArray(arr,arr.length)/size;
```

```
    System.out.println( "Average of this array is "+avg);
```

```
}  
}
```

//4. Sum of array elements using recursion

```
import java.util.Scanner;  
class SumOfElm  
{  
  
    static int sum(int arr[],int size)  
    {  
        int sum = 0;  
        if(size<=0)  
        {  
            return sum;  
        }  
        else  
        {  
            sum = arr[size-1]+sum(arr,size-1);  
        }  
        return sum;  
    }  
  
    public static void main(String args[])  
    {  
  
        Scanner sc =new Scanner(System.in);  
        System.out.println("Enter the size of an array: ");  
        int size = sc.nextInt();  
        int arr[] = new int[size];  
        int i=0;  
        System.out.println("Enter the array elements: ");  
  
        for( int element : arr )  
        {  
            arr[i++] = sc.nextInt();  
        }  
        System.out.println("Total Sum of array elements is : "+sum(arr,size));  
  
    }  
  
}
```

//7.Print reverse of a string using recursion

```
import java.util.Scanner;  
class RevString  
{
```

```
static String rev(char[] a, int i )
{
    char b[] = new char[a.length];
    if(i<0)
    {
        return "";
    }
    else
    {
        b[a.length-1-i] = a[i];
        return b[a.length-1-i]+rev(a, i-1);
    }
}
```

```
public static void main(String args[])
{
    Scanner sc =new Scanner(System.in);
    String str = sc.nextLine();
    char a[] = str.toCharArray();
    String Reversed = rev(a,a.length);
    System.out.println(str+"is reversed to "+Reversed);
}

}
```
