

Q1 : Given an integer, find out the sum of its digits using recursion.

Input: n= 1234

Output: 10

Explanation: 1+2+3+4=10

```
Solution: import java.util.Scanner;

public class sumSeries {
    public static int sum(int n){
        if(n==0){
            return 0;
        }
        return sum(n+1)+n;
    }
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the element:");
        int n=sc.nextInt();
        System.out.println(sum(n));
    }
}
```

Output:10

Q2: Given a number n. Find the sum of natural numbers till n but with alternate signs.

That means if n = 5 then you have to return 1-2+3-4+5 = 3 as your answer.

Constraints : $0 \leq n \leq 1e6$

Input1 : n = 10

Output 1 : -5

Explanation : 1-2+3-4+5-6+7-8+9-10 = -5

Input 2 : n = 5

Output 2 : 3

```
Solution: import java.util.Scanner;

public class SumOfseries {
    public static int sumSeries(int n){
        if(n==0){
            return 0;
        }
        if(n%2==0){
            return sumSeries(n-1)-n;
        }
        else{
            return sumSeries(n-1)+n;
        }
    }

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

```

Scanner sc=new Scanner(System.in);
System.out.println("please enter the elemnt:");
int n=sc.nextInt();
System.out.println(sumSeries(n));
}
}

```

Output: -5

Q3: Print the max value of the array [13, 1, -3, 22, 5].

Solution: `import java.util.Scanner;`

```

public class MaxInArray {
    public static int max(int arr[],int idx){
        if(idx==arr.length-1){
            return arr[idx];
        }else{
            int SmallAnswer=max(arr, idx+1);
            return Math.max(SmallAnswer, arr[idx]);
        }
    }
}

public static void main(String[] args) {
    int arr[]={13,1,-3,22,5};

    System.out.println(max(arr, 0));
}
}

```

Output:

```

PS C:\Users\DELL\Desktop> cd "c:\Users\DELL\Desktop\pwjava\java\name.java\name.java\" ; if ($?) { javac MaxInArray.java } ; if ($?) { java MaxInArray }

```

22

```

PS C:\Users\DELL\Desktop\pwjava\java\name.java\name.java>

```

Q4 : Find the sum of the values of the array [92, 23, 15, -20, 10].

Solution: `import java.util.Scanner;`

```

public class MaxInArray {
    public static int sum(int arr[],int idx){
        if(idx==arr.length){
            return arr[idx];
        }else{
            int SmallAnswer=sum(arr, idx+1);
            return sum+arr[idx];
        }
    }
}

public static void main(String[] args) {
    int arr[]={92, 23, 15, -20, 10};

    System.out.println(max(arr, 0));
}
}

```

Output:120