**Recursion in java**

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

Input: n= 1234

Output: 10

Explanation: 1+2+3+4=10

Ans:- import java.io.\*;

import java.util.\*;

public class Main

{ static int func(int n)

{

if (n == 0)

return 0;

return (n % 10 + func(n / 10));

}

public static void main(String[] args) {

System.out.println("Enter the number");

Scanner sc = new Scanner(System.in);

int n=sc.nextInt();

int ans = func(n);

System.out.println(" Sum of digits in " + n

+ " is " + ans );

}

}

**2)** 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<=n<=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

**Ans-**

public class Main {

public static void main(String[] args) {

System.out.println(alternateSum(10)); // Output: -5

System.out.println(alternateSum(5)); // Output: 3

}

public static int alternateSum(int n) {

int sum = 0;

for (int i = 1; i <= n; i++) {

if (i % 2 == 0) {

sum -= i;

} else {

sum += i;

}

}

return sum;

}

}

**3)** **Print the max value of the array [ 13, 1, -3, 22, 5]**

**Ans-** public class Main {

public static void main(String[] args) {

int[] array = {13, 1, -3, 22, 5};

int max = getMax(array);

System.out.println("Max value: " + max);

}

public static int getMax(int[] array) {

int max = array[0];

for (int i = 1; i < array.length; i++) {

if (array[i] > max) {

max = array[i];

}

}

return max;

}

}

**4) Find the sum of the values of the array [92, 23, 15, -20, 10]**

**Ans-** import java.util.Arrays;

public class Main {

public static void main(String[] args) {

int[] array = {92, 23, 15, -20, 10};

int sum = Arrays.stream(array).sum();

System.out.println("Sum: " + sum);

}

}

**5) Given a number n. Print if it is an armstrong number or not. An armstrong number is a number if the sum of every digit in that number raised to the power of total digits in that number is equal to the number. Example : 153 = 1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153 hence 153 is an armstrong number. (Easy) Input1 : 153 Output1 : Yes Input 2 : 134 Output2 : No**

**Ans -** import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter a number: ");

int n = scanner.nextInt();

if (isArmstrong(n)) {

System.out.println("Yes");

} else {

System.out.println("No");

}

}

public static boolean isArmstrong(int n) {

int originalNumber = n;

int sum = 0;

int digitCount = String.valueOf(n).length();

while (n != 0) {

int digit = n % 10;

sum += Math.pow(digit, digitCount);

n /= 10;

}

return sum == originalNumber;

}

}