**DAY-7**

**1.String Anagram**

import java.io.\*;

import java.util.\*;

public class Solution {

public static String sortString(String str) {

char[] ch=str.toCharArray();

Arrays.sort(ch);

return String.valueOf(ch);

}

public static boolean isAnagram(String s1,String s2) {

s1=sortString(s1);

s2=sortString(s2);

return s1.equals(s2);

}

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

String s1=sc.nextLine();

String s2=sc.nextLine();

if(isAnagram(s1, s2)) {

System.out.println("The given strings are an anagram");

} else {

System.out.println("The given strings are not an anagram");

}

}

}

**2.Alternating code**

import java.io.\*;

import java.util.\*;

import java.util.\*;

public class Main {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

String s = sc.nextLine();

if (s.length() < 2) {

System.out.println("No");

return;

}

char first = s.charAt(0);

char second = '\0';

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

if (s.charAt(i) != first) {

second = s.charAt(i);

break;

}

}

if (second == '\0') {

System.out.println("No");

return;

}

boolean isAlternating = true;

for (int i = 0; i < s.length(); i++) {

char expected = (i % 2 == 0) ? first : second;

if (s.charAt(i) != expected) {

isAlternating = false;

break;

}

}

Set<Character> unique = new HashSet<>();

for (char c : s.toCharArray()) {

unique.add(c);

}

if (isAlternating && unique.size() == 2)

System.out.println("Yes");

else

System.out.println("No");

}

}

**3.Recursion-Natural numbers**

import java.io.\*;

import java.util.\*;

public class Main {

static void printNumbers(int n) {

if (n == 0)

return;

printNumbers(n - 1);

System.out.print(n + " ");

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

if (n < 1 || n > 50) {

System.out.println("Enter a Valid Input!!!!!!!!!!!!!!!!!!!!!!!!");

} else {

System.out.println("The first " + n + " Natural Numbers are:");

printNumbers(n);

}

}

}

**3.Recursion-sum of Numbers**

import java.io.\*;

import java.util.\*;

public class Main {

static int sumOfNumbers(int n) {

if (n == 1)

return 1;

return n + sumOfNumbers(n - 1);

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

if (n < 1 || n > 50) {

System.out.println("Enter a Valid Input!!!!!!!!!!!!!!!!!!");

} else {

int sum = sumOfNumbers(n);

System.out.printf("The sum of numbers from 1 to %d : %04d", n, sum);

}

}

}

**4.Recursion-Sum of digits**

import java.io.\*;

import java.util.\*;

public class Main {

static int sumOfDigits(int n) {

if (n == 0)

return 0;

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

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

if (n >= 1000) {

System.out.println("Enter a Valid Input!!!!!!!");

} else {

int sum = sumOfDigits(n);

System.out.printf("Sum of Digit:%04d", sum);

}

}

}

**5. Recursion-Count the digit**

import java.io.\*;

import java.util.\*;

import java.util.Scanner;

public class Main {

static int countDigits(int num) {

if (num == 0)

return 0;

return 1 + countDigits(num / 10);

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int num = sc.nextInt();

if (num == 0)

System.out.println("The Count the digits: 1");

else

System.out.println("The Count the digits: " + countDigits(num));

}

}

**5.Armstrong number or not**

import java.io.\*;

import java.util.\*;

import java.util.Scanner;

public class Main {

public static boolean isArmstrong(int num) {

int original = num;

int digits = 0, sum = 0;

int temp = num;

while (temp > 0) {

digits++;

temp /= 10;

}

temp = num;

while (temp > 0) {

int rem = temp % 10;

sum += Math.pow(rem, digits);

temp /= 10;

}

return sum == original;

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

if (n < 0 || n >= 100000) {

System.out.println("Invalid Input");

} else {

if (isArmstrong(n))

System.out.println("yes");

else

System.out.println("no");

}

}