1. Write a program to print the special characters separately and print number of Special characters in the line?

PROGRAM

import java.util.Scanner;

class special\_characters

{

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

String s1;

int len, sp\_count=0,alp\_count=0,digi\_count=0,n\_count=0;

System.out.print("Enter the text: ");

s1=sc.nextLine();

len=s1.length();

char[] ch=s1.toCharArray();

for(int i=0;i<len;i++){

if((ch[i]>='a' && ch[i]<='z') || (ch[i]>='A' && ch[i]<='Z')){

alp\_count++;

}

else if(ch[i]>='0'&&ch[i]<='9') {

digi\_count++;

}

else

{

System.out.print(ch[i]);

sp\_count++;

}

}

System.out.println();

System.out.println("total special character: "+sp\_count);

}

}

1. Write a program to print all the composite numbers between a and b?

Sample Input:

A = 12

B = 19

Sample Output

14, 15, 16, 18

Test cases:

1. A = 11, B = 11
2. A = 20, B = 10
3. A = 0, B = 0
4. A = -5, B = 5
5. A = 7, B = -12

PROGRAM

import java.util.\*;

public class DAY3COMPOSITEBETWEENAANDB{

public static void main(String[] Args){

Scanner sc = new Scanner(System.in);

System.out.println("Enter A : ");

int a = sc.nextInt();

System.out.println("Enter B : ");

int b = sc.nextInt();

int is\_negetive = 0, count = 0;

if(a < 0 || b < 0){

is\_negetive = 1;

}

System.out.println("COMPOSITE NUMBERS : ");

if(a < b){

for(int i = a+1; i<b;i++){

count = 0;

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

if(i%j == 0){

count = count+1;

}

}

if(count > 2){

System.out.print(i + "\t");

}

}

}

else if(a > b){

for(int i = b+1; i<a;i++){

count = 0;

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

if(i%j == 0){

count = count+1;

}

}

if(count > 2){

System.out.print(i + "\t");

}

}

}

else if(a == b){

System.out.println("Enter a VALID Range");

}

if(is\_negetive == 1){

System.out.println("\nEnter a VALID Range. Composite Numbers cannot be NEGETIVE. ");

}

}

}

1. Write a program to print the Inverted Full Pyramid pattern?

PROGRAM

import java.util.Scanner;

public class INVERTEDPYRAMIDPATTERN {

private static Scanner sc;

public static void main(String[] args) {

sc = new Scanner(System.in);

System.out.print("Enter Inverted Pyramid Pattern Rows = ");

int rows = sc.nextInt();

System.out.println("Printing Inverted Pyramid Star Pattern");

for (int i = rows ; i >= 1; i-- )

{

for (int j = 0 ; j < rows - i; j++ )

{

System.out.print(" ");

}

for (int k = 0 ; k != (2 \* i) - 1; k++ )

{

System.out.print("\*");

}

System.out.println();

}

}

}

1. Find the Mean, Median, Mode of the array of numbers?

Sample Input;:

Array of elements = {16, 18, 27, 16, 23, 21, 19}

Sample Output:  
Mean = 20

Median = 19

Mode = 16

Test cases:

1. Array of elements = {26, 28, 37, 26, 33, 31, 29}

2. Array of elements = {1.6, 1.8, 2.7, 1.6, 2.3, 2.1, .19}

3. Array of elements = {0, 160, 180, 270, 160, 230, 210, 190, 0}

4. Array of elements = {200, 180, 180, 270, 160, 270, 270, 190, 200}

5. Array of elements = {100, 100, 100, 100, 100, 100, 100, 100, 100}

PROGRAM

import java.util.\*;

class operations{

public int mean(int a[]){

int sum = 0;

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

sum = sum + a[i];

}

return sum/a.length;

}

public int median(int a[]){

int temp;

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

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

if(a[i] > a[j]){

temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

}

return a[a.length/2];

}

public int mode(int a[]){

int rep\_count = 0;

int m[] = new int[a.length];

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

rep\_count = 0;

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

if(a[i] == a[j] && a[i] != -1){

a[j] = -1;

rep\_count+=1;

}

}

m[i] = rep\_count;

}

int mode\_ind = 0;

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

if(m[i] >= m[mode\_ind]){

mode\_ind = i;

}

}

return a[mode\_ind];

}

}

public class DAY3MEANMEDIANMODE{

public static void main(String[] Args){

Scanner sc = new Scanner(System.in);

operations op = new operations();

System.out.println("Enter Array Size : ");

int n = sc.nextInt();

int arr[] = new int[n];

System.out.println("Enter Array Elements : ");

for(int i = 0;i<n;i++){

arr[i] = sc.nextInt();

}

int mean = op.mean(arr);

int median = op.median(arr);

int mode = op.mode(arr);

System.out.println("MEAN : " + mean);

System.out.println("MEDIAN : " + median);

System.out.println("MODE : " + mode);

}

}

1. Find the factorial of n?

Sample Input:

N = 4

Sample Output:

4 Factorial = 24

Test cases:

1. N = 0
2. N = -5
3. N = 1
4. N = Q
5. N = 3A

PROGRAM

import java.util.\*;

public class DAY3FACTORIAL {

public static boolean checkNum(String n){

try{

int x = Integer.parseInt(n);

return true;

}

catch(NumberFormatException e){

System.out.println("Enter a Valid Integer");

return false;

}

}

public static int fact(int n){

if(n == 0){

return 1;

}

return n\*fact(n-1);

}

public static void main(String[] Args){

Scanner sc =new Scanner(System.in);

System.out.println("Enter N : ");

String n = sc.nextLine();

if(checkNum(n)){

int num = Integer.parseInt(n);

System.out.println("Factorial : " + fact(num));

}

}

}

1. Write a program to print the following pattern

Sample Input:

Enter the Character to be printed: %

Max Number of time printed: 3

%

% %

% % %

PROGRAM

import java.util.\*;

public class pattern8

{

public static void main(String args[])

{

int i, j;

char ch;

Scanner s= new Scanner(System.in);

System.out.print(" Please Enter any Character : ");

ch = s.next().charAt(0);

System.out.println("Enter the no.of.rows:");

int row = s.nextInt();

for(i=1;i<=row;i++)

{

for(j=1;j<=i;j++)

{

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

}

System.out.println("");

}

}

}

1. Find the year of the given date is leap year or not

Sample Input:

Enter Date: 04/11/1947

Sample Output:

Given year is Non Leap Year

Test cases:

1. 04/11/19.47
2. 11/15/1936
3. 31/45/1996
4. 64/09/1947
5. 00/00/2000

PROGRAM

import java.util.Scanner;

class DAY3LEAPYEAR {

public static void main(String[] args){

try{

int date;

System.out.println("Enter date :: ");

Scanner sc = new Scanner(System.in);

date = sc.nextInt();

int month;

System.out.println("Enter month :: ");

Scanner sc1 = new Scanner(System.in);

month = sc.nextInt();

int year;

System.out.println("Enter an Year :: ");

year = sc.nextInt();

Scanner sc2 = new Scanner(System.in);

System.out.println("The entered date is:"+date+"/"+month+"/"+year);

if((date<=31)&& (date>0) && (month<=12)){

if (((year % 4 == 0) && (year % 100!= 0)) || (year%400 == 0))

System.out.println("Specified year is a leap year");

else

System.out.println("Specified year is not a leap year");

}

else{

System.out.println("enter valid data");

}

}

catch(Exception e){

System.out.println("enter valid data");

}

}

}

1. Find the number of factors for the given number

Sample Input:

Given number: 100

Sample Output:

Number of factors = 9

Test cases:

1. 343
2. 1080
3. -243
4. 101010
5. 0

PROGRAM

import java.util.\*;

public class printnooffactors

{

public static void main(String[] args)

{

int num,n;

Scanner sc = new Scanner(System.in);

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

num = sc.nextInt();

System.out.println("Enter N:");

n= sc.nextInt();

int i, count = 0;

for(i = 1; i <= num; i++)

{

if(num % i == 0)

{

count = count + 1;

if(count==n)

{

System.out.println(n+" Factor is "+i);

}

}

}

System.out.print("\nTotal factors of " + num + " : " + count);

}

}

1. Write a program to print the given number is Perfect number or not?

Sample Input:

Given Number: 6

Sample Output:

It’s a Perfect Number

Test cases:

1. 17
2. 26!
3. 143
4. 84.1
5. -963

PROGRAM

import java.util.\*;

public class DAY4PERFECTNUMBERS{

public static boolean checkInt(String s){

try{

int x = Integer.parseInt(s);

return true;

}

catch(NumberFormatException e){

System.out.println("Enter a Valid Number");

return false;

}

}

public static void main(String[] Args){

Scanner sc = new Scanner(System.in);

System.out.println("Enter a Number : ");

String n = sc.nextLine();

if(checkInt(n) == true){

int num = Integer.parseInt(n);

int sum = 0;

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

if(num%i==0){

sum=sum+i;

}

}

if(sum == num){

System.out.println("The Entered Number is a PERFECT Number. ");

}

else{

System.out.println("The Entered Number is not a PERFECT Number. ");

}

}

}

}

1. Write a program to print the number of vowels in the given statement?

Sample Input:

Saveetha School of Engineering

Sample Output:

Number o vowels = 12

Test cases:

1. India is my country
2. All are my brothers and sisters
3. Why dry sky
4. Shy Try Cry
5. EDUCATION

PROGRAM

import java.util.\*;

public class DAY4NUMBEROFVOWELS {

public static void main(String[] Args){

Scanner sc = new Scanner(System.in);

System.out.println("Enter a Stirng : ");

String input = sc.nextLine();

int count = 0;

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

if((input.charAt(i) == 'A' )||(input.charAt(i) == 'E' ) ||(input.charAt(i) == 'I' )||(input.charAt(i) == 'O' )||(input.charAt(i) == 'U' )

||(input.charAt(i) == 'a' )||(input.charAt(i) == 'e' )||(input.charAt(i) == 'i' )||(input.charAt(i) == 'o' )||(input.charAt(i) == 'u' )){

count +=1;

}

}

System.out.println("No. of Vowels : " + count );

}

}