**Tcs question**

**Number System**

// binary to decimal convert

import java.util.Scanner;

public class binary\_decimal {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter the binary no.");

int n = sc.nextInt();

int pv=1; // place value

int ans=0;

while (n!=0) {

int lastdig = n%10;

n = n/10;

ans = ans + pv\*lastdig;

pv = 2\*pv;

}

System.out.println(ans);

}

}

Binary to hexadecimal

import java.util.Scanner;

import javax.swing.event.AncestorEvent;

public class binary\_hexdecimal {

public static void main(String[] args) {

// binary --> decimal

Scanner sc = new Scanner(System.in);

System.out.println("Enter binary no.");

int n = sc.nextInt();

int placeVal=1;

int lastdigi;

int ans=0;

while (n != 0) {

lastdigi = n%10;

n= n/10;

ans = ans + lastdigi\*placeVal;

placeVal = 2\*placeVal;

}

System.out.println("binary no."+ans);

// decimal ---> hexdecimal

int term;

String s = " ";

char arr2[] = {'0','1','2','3','4','5','6','7','8','9','A','B','C','D','E','F'};

while (ans>0) {

term = ans%16;

s= arr2[term]+s; // it help to reverse the strin g

ans = ans/16;

}

System.out.println(s);

}

}

// binary to octal

// binary---> decimal ---> octal

import java.util.Scanner;

public class binary\_octal {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter the binary no.");

int n = sc.nextInt();

int placeVal = 1;

int ans =0;

while (n!=0) {

int lastdigi = n%10;

n=n/10;

ans = ans + lastdigi\*placeVal;

placeVal=2\*placeVal;

}

System.out.println(" decimal no."+ans);

int term;

int count=0;

int arr[] = new int[1000];

while (ans >0) {

arr[count] = ans%8;

ans = ans/8;

count++;

}

// count =3, reverse

for(int i=count-1;i>=0;i--){

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

}

}

}

Decimal to binary

import java.util.Scanner;

public class deci\_binary {

        public static void main(String[] args) {

            Scanner sc = new Scanner(System.in);

            System.out.println("enter integer value ");

            int n = sc.nextInt();

            int arr[] = new int[1000];

            int count =0;

            while ( n>0) {

                arr[count] = n%2;

                n = n/2;

                count++;

            }

            for(int i=count-1;i>=0;i--){

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

            }

        }

}

// decimal to hexadecimal

import java.util.Scanner;

public class deci\_hexadecimal {

        public static void main(String[] args) {

            Scanner sc = new Scanner(System.in);

            System.out.println("enter integer value ");

            int n = sc.nextInt();

             String s = " ";

             char dig[] = {'0','1','2','3','4','5','6','7','8','9','A','B','C','D','E','F'};

             int r;

            while ( n>0) {

                r = n%16;

                s=dig[r]+s;

                n = n/16;

            }

            System.out.println(s);

        }

}

// decimal to octal

import java.util.Scanner;

public class deci\_octal {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter integer value ");

int n = sc.nextInt();

int arr[] = new int[1000];

int count =0;

while ( n>0) {

arr[count] = n%8;

n = n/8;

count++;

}

for(int i=count-1;i>=0;i--){

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

}

}

}

# Number digit to word

import java.lang.foreign.ValueLayout;

import java.util.Scanner;

public class number\_word {

      public static void main(String[] args) {

              Scanner sc = new Scanner(System.in);

                 System.out.println("enter the any  digit");

                 int n = sc.nextInt();

                 if( n == 0){

                  System.out.println("zero");

                 }

                 // words for number 0 to 19

                 String unit[] = {

               "",        "One",       "Two",      "Three",

            "Four",    "Five",      "Six",      "Seven",

            "Eight",   "Nine",      "Ten",      "Eleven",

            "Twelve",  "Thirteen",  "Fourteen", "Fifteen",

            "Sixteen", "Seventeen", "Eighteen", "Nineteen"

                 };

                 // words for  number multiple of 10

                 String tens[] = {

                  "",     "",     "Twenty",  "Thirty", "Forty",

                  "Fifty", "Sixty", "Seventy", "Eighty", "Ninety"

                 };

                 String multiplier[] = {

                "", "Thousand", "Million", "Billion"

                 };

            String res = "";

            int group =0;

            // process number in group of 1000s

            while (n>0) {

                  if(n%1000 != 0){

                        int value = n%1000;

                        String temp = "";

                        // handle 3 digit number

                        if(value >=100 ){

                              temp = unit[value/100] + " Hunderd";

                               value = value%100;

                        }

                        //  handle 2 digit number

                        if(value >= 20){

                              temp += tens[value/10]+ " ";

                              value = value %10;

                        }

                        //  handle 2 digit number

                        if( value > 0 ){

                              temp = temp + unit[value]+ " ";

                        }

                        // add the multiplier according to the

                        temp = temp + multiplier[group] + " ";

                        // add this group result to overall result

                        res = temp + res;

                  }

                  n = n / 1000;

                  group++;

            }

            // remove trailing space

            res.trim();

            System.out.println(res);

      }

}

#Octal to binary

import java.util.Scanner;

public class octal\_binary {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter the octal no.");

int n = sc.nextInt();

int arr[] = new int[1000];

int rem;

int count=0;

while (n>0) {

rem = n%2;

arr[count] = rem;

n= n/2;

count++;

}

for(int i=count-1;i>=0;i--){

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

}

}

}

Octal to decimal

import java.util.Scanner;

public class octal\_decimnl {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter the octal no.");

int n = sc.nextInt();

int placeVAL=1;

int ans=0;

while (n!=0) {

int lastdigi = n%10;

ans = ans+ lastdigi\*placeVAL;

placeVAL=8\*placeVAL;

}

System.out.println(ans);

}

}

Number convert to alphabet

import java.util.Scanner;

public class alphabet\_number {

      public static void main(String[] args) {

             Scanner sc = new Scanner(System.in);

                 System.out.println("enter the octal no.");

                 int n = sc.nextInt();

                 int  count =0;

                 char c = ' ';

                 char arr[] = {

                        '0','A','B','C','D','E','F','G','H','I',

                        'J','K','L','M','N','O','P','Q','R',

                        'S','T','U','V','W','X','Y','Z'

                 };

                  char  val =arr[n];

                  System.out.println(val);

      }

}

**Number**

WAP TO Abundant Number

import java.util.Scanner;

public class abundant\_number {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

int n = sc.nextInt();

int clone = n;

int sum =0;

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

if (n%i ==0) {

sum = sum +i;

}

}

System.out.println("sum of divisior "+ sum);

if (sum>clone) {

System.out.println("it is abundant number ");

}

else

System.out.println("it is not abundant number");

}

}

Wap to add two fraction

import java.util.Scanner;

public class add\_two\_fraction {

// Function to calculate the GCD using Euclid's algorithm

public static int gcd(int a, int b) {

while (b != 0) {

int temp = b;

b = a % b;

a = temp;

}

return a;

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

// Input for first fraction

System.out.println("Enter the numerator of the first fraction:");

int n1 = sc.nextInt();

System.out.println("Enter the denominator of the first fraction:");

int d1 = sc.nextInt();

// Input for second fraction

System.out.println("Enter the numerator of the second fraction:");

int n2 = sc.nextInt();

System.out.println("Enter the denominator of the second fraction:");

int d2 = sc.nextInt();

// Variables to hold the numerator and denominator of the result

int num, den;

// Adding fractions

if (d1 == d2) {

num = n1 + n2;

den = d1;

} else {

num = n1 \* d2 + n2 \* d1;

den = d1 \* d2;

}

// Simplifying the result

int gcdValue = gcd(num, den);

num /= gcdValue;

den /= gcdValue;

// Printing the result

System.out.println("The result of (" + n1 + "/" + d1 + ") + (" + n2 + "/" + d2 + ") is:");

System.out.println(num + "/" + den);

}

}

Area of circle

import java.util.Scanner;

public class Area\_circle {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println(" raduis ");

int r = sc.nextInt();

final double pi = 3.14;

double area = pi\*(r\*r);

double circumference = 2\*pi\*r;

System.out.println("area of circle "+ area);

System.out.println("circumfernce of circle "+ circumference);

}

}

Armstrong number

import java.util.Scanner;

public class Armstrong\_num {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

int n = sc.nextInt();

int fake = n;

int store=0;

int resul=0;

while (n>0) {

int term = n%10;

resul = resul +term\*term\*term;

n = n/10;

}

if (resul== fake) {

System.out.println("armstrong ");

}

else{

System.out.println("not armstrong ");

}

}

}

Automorphic

import java.util.Scanner;

public class Automorphic {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

int num = sc.nextInt();

int square = num \* num;

int temp = num;

// Check if the number is automorphic

boolean isAutomorphic = true;

while (temp > 0) {

if (temp % 10 != square % 10) {

isAutomorphic = false;

break;

}

temp /= 10;

square /= 10;

}

if (isAutomorphic) {

System.out.println(num + " is an automorphic number.");

} else {

System.out.println(num + " is not an automorphic number.");

}

sc.close();

}

}

**Even odd**

import java.util.Scanner;

public class octal\_binary {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter the octal no.");

int n = sc.nextInt();

int arr[] = new int[1000];

int rem;

int count=0;

while (n>0) {

rem = n%2;

arr[count] = rem;

n= n/2;

count++;

}

for(int i=count-1;i>=0;i--){

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

}

}

}

Fabonacci series

import java.util.Scanner;

public class fabonacci\_series {

public static int fabonacci(int n){

// n = 0,1,1,2,3,5,8,13.....

if(n == 0 || n==1){

return n;

}

else{

return fabonacci(n-1)+ fabonacci(n-2);

}

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

int n = sc.nextInt();

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

System.out.print(fabonacci(i)+" ");

}

}

}

Factorial number

import java.util.Scanner;

public class factorial\_num {

public static int factorial(int n){

if (n<=1) {

return n;

}

else

return n\*factorial(n-1);

}

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

int n = sc.nextInt(); //4

System.out.println(factorial(n));

}

}

Factor number

import java.util.Scanner;

public class factors\_number {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

int n = sc.nextInt();

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

if (n%i == 0) {

// i never larger than n

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

}

}

}

}

GCD

import java.util.Scanner;

public class GCD {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter the first num ");

int n1 = sc.nextInt();

System.out.println("Enter the second num ");

int n2 = sc.nextInt();

int original1 = n1;

int original2 = n2;

while (n1%n2 != 0) {

int rem = n1%n2;

n1 = n2;

n2 = rem;

}

int gcd = n2;

int lcm = (original1\*original2)/gcd;

System.out.println(gcd);

System.out.println(lcm);

}

}

Greatest three number

import java.util.Scanner;

public class Greatest\_three\_num {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter first num");

int a = sc.nextInt();

System.out.println("enter second num");

int b = sc.nextInt();

System.out.println("enter third num");

int c = sc.nextInt();

if (a>b && a>c) {

System.out.println(a+ " a");

}

else if (b>a && b>c) {

System.out.println(b+ " b");

}

else if (c>a && c>b) {

System.out.println(c+"c");

}

}

}

Greatest two number

import java.util.Scanner;

public class Greatest\_two\_num {

           public static void main(String[] args) {

                    Scanner sc = new Scanner(System.in);

                    int a = sc.nextInt();

                    int b = sc.nextInt();

                if (a>b) {

                     System.out.println(a);

                }

                else if (b>a) {

                      System.out.println(b);

                }

           }

}

Harshad number

import java.util.Scanner;

public class Harshad\_num {

         public static void main(String[] args) {

            Scanner sc = new Scanner(System.in);

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

        int num = sc.nextInt();

        int originalnum = num;

        int result =0;

        while (num>0) {

            int lastdigit = num%10;

            result = result +lastdigit;

            num = num/10;

        }

        System.out.println("sum of digit"+ " " + result);

        if (originalnum%result == 0) {

            System.out.println("it is harshad num");

        }

        else

          System.out.println("Not harshad num");

         }

}

Leap year

import java.util.Scanner;

public class leap\_year {

            public static void main(String[] args) {

                         Scanner sc = new Scanner(System.in);

                        System.out.println(" Enter the  year name  ");

                       int year = sc.nextInt();

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

                          System.out.println(" leap year ");

                       }

                       else{

                        System.out.println(" Not leap year ");

                       }

            }

}

// maximum and minimum number in a digit

import java.io.\*;

import java.util.Scanner;

public class max\_min\_digit {

          public static void main(String[] args) {

               Scanner sc = new Scanner(System.in);

            int n = sc.nextInt(); // 3456

            int mini = Integer.MAX\_VALUE;

            int maxi =Integer.MIN\_VALUE;

              while (n>0) {

               int ltdigi = n%10;

               maxi = Math.max(ltdigi, maxi);

               mini = Math.min(ltdigi, mini);

               n = n/10;

              }

              System.out.println(maxi+ " "+ mini);

          }

}

Palindrome number

import java.util.Scanner;

public class  palindrome\_num{

            public static void main(String[] args) {

                       Scanner sc = new Scanner(System.in);

                       int n = sc.nextInt(); // n = 121

                       int temp = n;

                       int  sum=0;

                       while(n>0){

                         int  rem =  n %10;

                         // we are using this formula becoz for making tens and hundered , it is not array

                         // or other way we say  reverse formula

                          sum = (sum\*10)+rem;

                         n = n/10;

                       }

                       System.out.println("reverse value "+sum);

                       if (temp == sum) {

                        System.out.println("palindrome number ");

                       }

                       else{

                        System.out.println("Not Palindrome");

                       }

            }

}

Palindrome range

import java.util.Scanner;

public class palindrome\_range {

            public static void plaindrom(int a , int b){

                        int temp;

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

                             int sum =0;

                               temp=i;

                                    while(temp>0){

                                                int  rem =  temp %10;

                                                temp = temp/10;

                                                 sum = (sum\*10)+rem;

                                              }

                                    //           System.out.println("reverse value "+sum);

                                              if (i == sum) {

                                               System.out.println("palindrome number "+i);

                                              }

                        }

            }

            public static void main(String[] args) {

                    Scanner sc = new Scanner(System.in);

                    System.out.println("Enter the first value ");

                        int a = sc.nextInt();

                        System.out.println("Enter the second value ");

                        int b = sc.nextInt();

                        plaindrom(a,b);

                    }

            }

**Perfect Number**

**import java.util.Scanner;**

**public class perfect\_number {**

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

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

**int n = sc.nextInt();**

**int sum =0;**

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

**if (n%i==0) {**

**sum = sum+i;**

**}**

**}**

**if (n==sum) {**

**System.out.println("perfect number ");**

**}**

**else{**

**System.out.println("Not perect number ");**

**}**

**}**

**}**

**Positive negative**

**import java.util.Scanner;**

**public class positve\_negative {**

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

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

**int n = sc.nextInt();**

**if (n==0) {**

**System.out.println("neither positive  nor  negative ");**

**}**

**if(n>0){**

**System.out.println("it is positive number ");**

**}**

**else if (n<0) {**

**System.out.println("it is negative number ");**

**}**

**}**

**}**

**Power of num**

**import java.util.Scanner;**

**public class power\_of\_num {**

**public static int power(int N, int a){**

**//N^a**

**int val = 1;**

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

**val = val\*N;**

**}**

**return val;**

**}**

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

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

**System.out.println("first Number ");**

**int N = sc.nextInt();**

**System.out.println("second num");**

**int a = sc.nextInt();**

**System.out.println(power(N,a));**

**}**

**}**

**Prime factor**

**/\***

**print all prime factor of given number**

**\*/**

**import java.util.Scanner;**

**public class prime\_factor {**

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

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

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

**int  num = sc.nextInt();**

**int n = 2;**

**while (num>1)**

**{**

**if (num%n==0) {**

**System.out.println(n+" ");**

**num = num/n;**

**}**

**// jo divide naa ho  ek number increment ho jaye**

**else{**

**n++;**

**}**

**}**

**}**

**}**

**Prime number**

**import java.util.Scanner;**

**public class prime\_number {**

**public static boolean  print(int n){**

**if (n<=1) {**

**return false ;**

**}**

**for(int i=2; i<n;i++){**

**if (n%i==0) {**

**return false ;**

**}**

**else{**

**return true;**

**}**

**}**

**return false;**

**}**

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

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

**System.out.println("Enter Number ");**

**int n = sc.nextInt();**

**System.out.println(print(n));**

**}**

**}**

**Prime range**

**import java.util.Scanner;**

**public class prime\_range {**

**public static boolean  print( int a, int b){**

**int   flag;**

**// foor loop**

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

**if(i<=1){**

**return false;**

**}**

**flag=1;**

**for(int j=2; j<=i/2;j++ ){**

**if (i%j==0) {**

**flag =0;**

**break;**

**}**

**else{**

**flag=1;**

**}**

**}**

**if (flag==1) {**

**System.out.print(i+" ");**

**}**

**}**

**return false;**

**}**

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

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

**System.out.println("Enter the first value ");**

**int a = sc.nextInt();**

**System.out.println("Enter the second value ");**

**int b = sc.nextInt();**

**print(a,b);**

**sc.close();**

**}**

**}**

**Quadratic equation**

**import java.util.Scanner;**

**public class quadratic\_equation {**

**public static void quadratic(int a, int b , int c){**

**double r1, r2 ,x,y =0;**

**//        check disrmenant**

**int D = b\*b-4\*a\*c;**

**if (D==0) {**

**System.out.println("real and equal roots");**

**r1 = -b/2\*a;**

**r2 = -b/2\*a;**

**System.out.println("roots r1 :"+ r1+ " AND "+"roots r2 :"+r2);**

**}**

**else if (D>0) {**

**System.out.println("real and distint roots");**

**r1= (-b+Math.sqrt(D))/2\*a;**

**r2 = (-b+Math.sqrt(D))/2/a;**

**System.out.println("roots r1: "+ r1+"AND "+ "roots r2: "+r2);**

**}**

**else if (D<0) {**

**System.out.println(" distint and imaginary roots");**

**x = -b/2\*a ;**

**y =  (Math.sqrt(-D))/2\*a;**

**System.out.println("roots r1 :"+ x + "+"+ "i"+y);**

**System.out.println("roots r1 :"+ x + "-"+ "i"+y);**

**}**

**}**

**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();**

**System.out.println("Enter c");**

**int c = sc.nextInt();**

**quadratic(a,b,c);**

**}**

**}**

**Reverse digit**

**import java.util.Scanner;**

**public class Reverse\_digit {**

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

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

**int n = sc.nextInt(); // 3456**

**int reverse =0;**

**while (n>0) {**

**int  lastdigi = n%10;**

**reverse = reverse\*10+lastdigi;**

**n = n/10;**

**}**

**System.out.println(reverse);**

**}**

**}**

**Strong number**

**import java.util.Scanner;**

**public class strong\_num {**

**public static int fac(int n){**

**// multiplication from 1 to n**

**int f=1;**

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

**f=f\*i;**

**}**

**return f;**

**}**

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

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

**System.out.println(" Enter the  year name  ");**

**int  n = sc.nextInt();**

**int temp = n;**

**int sum =0;**

**while (n!=0) {**

**int d = n%10;**

**sum = sum + fac(d);**

**n=n/10;**

**}**

**if (temp==sum) {**

**System.out.println("strong number ");**

**}**

**else{**

**System.out.println("Not strong num");**

**}**

**}**

**}**

**Sum of gp series**

**import java.util.Scanner;**

**public class sum\_GP\_series {**

**public static void  GP(int N , float a , float r){**

**float  series =0;**

**for(int i=0;i<N; i++){**

**series = (float) (series+ a\*Math.pow(r, i));**

**}**

**System.out.println(series);**

**}**

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

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

**System.out.println(" Enter the number of terms in the series (N)  ");**

**int N = sc.nextInt();**

**System.out.println(" first  num-a");**

**float a = sc.nextFloat();**

**System.out.println(" diffrence-r ");**

**float r = sc.nextFloat();**

**GP(N,a,r);**

**}**

**}**

**// sum of N natural number**

**import java.util.Scanner;**

**public class sum\_N\_natural {**

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

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

**int n = sc.nextInt();**

**int sum=0;**

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

**//        sum = sum + i;**

**// }**

**// System.out.println("total num "+sum);**

**sum = n\*(n+1)/2;**

**System.out.println(sum);**

**}**

**}**

**// sum of number in a given range**

**import java.util.Scanner;**

**public class sum\_num\_range {**

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

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

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

**System.out.println("give lowest number ");**

**int n1 = sc.nextInt();**

**System.out.println("give higest number ");**

**int n2 = sc.nextInt();**

**int result =0;**

**for(int i=n1; i<=n2;i++){**

**result = result+i;**

**}**

**System.out.println(result);**

**}**

**}**

**Sum of digit**

**import java.util.Scanner;**

**public class sum\_of\_digit {**

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

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

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

**int  n = sc.nextInt();**

**int r , sum=0;**

**while (n>0) {**

**r=n%10;**

**sum = sum + r;**

**n = n/10;**

**}**

**System.out.println(sum);**

**}**

**}**

**Sum of series**

**import java.util.Scanner;**

**public class sum\_of\_series {**

**public static void  AP(int N , int a , int d){**

**int  series =0;**

**int n=0;**

**for(int i=1;i<=N; i++){**

**series=  series+ (a + n\*d);**

**n++;**

**}**

**System.out.println(series);**

**}**

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

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

**System.out.println(" series  ");**

**int N = sc.nextInt();**

**System.out.println(" first  num");**

**int a = sc.nextInt();**

**System.out.println(" diffrence ");**

**int d = sc.nextInt();**

**AP(N,a,d);**

**}**

**}**