1.

import java.util.\*;

import java.io.\*;

class yearsweeksdays

{

public static void main(String args[])

{

try

{

int d,y,w, y1;

Scanner sc= new Scanner(System.in);

int nod = sc.nextInt();

if(nod <=0)

throw new ArithmeticException("Invalid due to zero/negative value");

y = nod/365;

y1 = nod%365;

w = y1/7;

d = y1%7;

System.out.println("Year " + y);

System.out.println("Weeks" + w);

System.out.println("Days" + d);

}

catch(ArithmeticException e)

{

System.out.println("Invalid due to zero/negative value");

}

catch(Exception e)

{

System.out.println("Invalid due to floating point");

}

}

}

2.

import java.util.\*;

class staff

{

public static void main(String[] args)

{

try

{

Scanner sc= new Scanner(System.in);

int c=0,d=0;

System.out.print("Total users: ");

int a= sc.nextInt();

System.out.print("Staff users: ");

int b= sc.nextInt();

if(a<0||b<0)

{

System.out.println("Enter a valid no.of.users");

}

else

{

c=b/3;

d=a-b-c;

System.out.println("Student users:" +d);

}

}

catch(Exception e)

{

System.out.println("Enter the correct no.of.users");

}

}

}

3.

import java.util.\*;

public class nth\_factor

{

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);

}

}

4.

import java.util.\*;

class NPRIMENUMBERSAFTERNTHPRIMENUMBER {

public static booleancheckInt(String n){

try{

int x = Integer.parseInt(n);

return true;

}

catch(NumberFormatException e){

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

return false;

}

}

public static void main(String[] Args){

Scanner sc = new Scanner(System.in);

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

String n = sc.nextLine();

if(checkInt(n) == true){

int num = Integer.parseInt(n);

if(num> 0){

int arr[];

arr = new int[2\*num];

int count=0,c=0,k=2,l=0;

while(l<2\*num){

count = 0;

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

if(k%j == 0){

count = count + 1;

}

}

if(count <= 2){

arr[l] = k;

l++;

}

k++;

}

System.out.println("\nNthPrime : " + arr[num-1]);

System.out.println("N prime after " + arr[num-1] + " :");

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

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

}

}

else{

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

}

}

}

}

5.

import java.util.\*;

class DAY2PERFECTSQUARES

{

static void perfectSquares(int l, int r)

{

if(l<0 || r<0)

{

System.out.println("invalid input");

}

else if(l==r || l>r)

{

System.out.println("invalid input");

}

else{

for (int i = l; i<= r; i++)

{

if (Math.sqrt(i) == (int)Math.sqrt(i))

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

}

}

}

public static void main (String[] args)

{

try

{

Scanner sc=new Scanner(System.in);

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

int l=sc.nextInt();

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

int r=sc.nextInt();

perfectSquares(l, r);

}

catch(ArithmeticException e)

{

System.out.println("invalid due to negative values");

}

}

}

6.

PROGRAM

import com.sun.source.tree.TryTree;

import java.util.HashSet;

import java.util.Scanner;

import java.util.Set;

class DAY2PERMUTATION

{

public static Set<String>getPermutation(String str)

{

Set<String> permutations = new HashSet<String>();

if (str == null)

{

return null;

} else if (str.length() == 0) {

permutations.add("");

return permutations;

}

char first = str.charAt(0);

String sub = str.substring(1);

Set<String> words = getPermutation(sub);

for (String strNew : words) {

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

permutations.add(strNew.substring(0, i) + first + strNew.substring(i));

}

}

return permutations;

}

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

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

String data = input.nextLine();

System.out.println("Permutations of " + data + ": \n" + getPermutation(data));

}

}

7.

import java.util.Scanner;

class DAY3ARRAYSQUAREROOT

{

public static void main(String[] args){

Scanner sc=new Scanner(System.in);

int ul,ll;

System.out.print("Enter the lower limit: ");

ll=sc.nextByte();

System.out.print("Enter the upper limit: ");

ul=sc.nextByte();

if(ll>ul)

{

System.out.print("Enter the valid limits");

}

if(ll<0 ||ul<0 ||(ll<0 &&ul<0 ))

{

System.out.print("Enter the valid limits");

}

else

{

System.out.print("[");

if(ll<ul){

for(int j=ll;j<=ul;j++){

System.out.print("("+j+","+(int)Math.pow(j,2)+")");

if(j<ul)

System.out.print(",");

}

}

if(ul<ll){

for(int i=ll;i>=ul;i--){

System.out.print("("+i+","+(int)Math.pow(i,2)+")");

if(i>ul)

System.out.print(",");

}

}

System.out.print("]");

if(ul==ll)

System.out.println("Both the limits are same");

}

}

}

8.

import java.io.\*;

import java.util.\*;

class Account

{

double balance;

Account()

{

balance = 0;

}

Account(double sum)

{

balance = sum;

}

double add(double sum)

{

balance += sum;

return sum;

}

double withdraw(double sum)

{

if (sum > balance) {

balance -= 5;

return -5;

}

else {

this.balance -= sum;

return balance; // Notice: always >= 0 (never < 0)

}

}

double inquire()

{

return balance;

}

double interest (double rate)

{

return rate \* balance;

}

}

class DAY4BANKWORKINGCLASS

{

public static void main(String args[])

{

try

{

Scanner s=new Scanner(System.in);

System.out.println("Enter account holder name:");

String s1=s.next();

System.out.println("Enter account type:");

String s2=s.next();

int b=0;

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

b=s.nextInt();

Account A;

if (b==0){

A = new Account();

}

else{

A = new Account(b);

}

System.out.println("Enter the amount to withdraw");

b=s.nextInt();

double d = A.withdraw(b);

System.out.println("Account holder name:"+s1);

System.out.println("Account type:"+s2);

if (d == -5) {

System.out.println("Penaly RS. -5 is charged since insufficient balance");

System.out.println("Currrent balance" + A.inquire());

}

else{

System.out.println("Now balance after withdraw of"+ A.inquire() + "is" + d);

}

System.out.println("Interest for current balance" + A.inquire() + " is " +

A.interest(0.006));

}

catch(Exception e)

{

System.out.println("Due to character exception");

}

}

}

9.

import java.util.Scanner;

public class DAY3REVERSEANDADDUPTOPALINDROME

{

static int reverseNumber(int number)

{

int reverse = 0;

int rem = 0;

while (number != 0)

{

rem = number % 10;

reverse = (reverse\*10) + rem;

number = number/10;

}

return reverse;

}

static booleancheckPalindrome(int number)

{

int reverse = reverseNumber(number);

if(reverse == number)

{

return true;

}

else

{

return false;

}

}

static void reverseAndAdd(int number)

{

if(checkPalindrome(number))

{

System.out.println("Given Number is already a palindrome");

}

else

{

while (!checkPalindrome(number))

{

int reverse = reverseNumber(number);

int sum = number + reverse;

System.out.println(number+" + "+reverse+" = "+sum);

number = sum;

}

}

}

public static void main(String[] args)

{

try

{

Scanner sc = new Scanner(System.in);

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

int inputNumber = sc.nextInt();

if(inputNumber<0)

{

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

}

else

{

reverseAndAdd(inputNumber);

}

}

catch(Exception e)

{

System.out.println("Enter a valid number");

}

}

}

10. **import java.util.\*;**

**class DAY4FIZZ**

**{**

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

**{**

**try**

**{**

**int n;**

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

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

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

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

**{**

**if (i%15==0)**

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

**else if (i%5==0)**

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

**else if (i%3==0)**

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

**else**

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

**}**

**}**

**catch(Exception e)**

**{**

**System.out.println("Due to character exception");**

**}**

**}**

**}**

**11.**

import java.util.Scanner;

public class DAY5COMMONELEMENTSINTWOARRAYOFPOSITIVEINTEGERS

{

public static void main(String args[])

{

try {

Scanner input = new Scanner(System.in);

int a1, b1;

System.out.print("Enter the size of array 1: ");

a1 = input.nextInt();

int a[] = new int[a1];

System.out.println("Enter the elements into the array: ");

for (int i = 0; i< a1; i++) {

a[i] = input.nextInt();

}

System.out.print("Enter the size of array 2: ");

b1 = input.nextInt();

int b[] = new int[b1];

System.out.println("Enter the elements into the array: ");

for (int i = 0; i< b1; i++) {

b[i] = input.nextInt();

}

for (int i = 0; i< a1; i++) {

for (int j = 0; j < b1; j++) {

if (a[i] > 0 && b[j] > 0) {

if (a[i] == b[j])

System.out.print("common elements "+a[i] + " ");

}

else

throw new Exception();

}

}

}

catch(Exception e)

{

System.out.print("Enter a positive integer");

}

}

}

2)import java.util.Arrays;

import java.util.\*;

public class DAY5COMMONELEMENTSINTWOARRAYS

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

String [] array1;

String [] array2;

int a,b;

int n1,n2,i,j;

System.out.print("Enter the no. of elements for array 1: ");

n1=sc.nextInt();

array1 = new String[n1];

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

for(a=0;a<n1;a++)

{

array1[a]=sc.next();

}

System.out.print("Enter the no. of elements for array 2: ");

n2=sc.nextInt();

array2 = new String[n2];

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

for(b=0;b<n2;b++)

{

array2[b]=sc.next();

}

System.out.println("Array1 : "+Arrays.toString(array1));

System.out.println("Array2 : "+Arrays.toString(array2));

for (i = 0; i< n1; i++)

{

for (j = 0; j < n2; j++)

{

if(array1[i].equals(array2[j]))

{

System.out.println("Common element is : "+(array1[i]));

}

}

}

}

}

**12.**

import java.util.\*;

public class DAY5LENGTHOFLASTWORD

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

String str1;

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

str1=sc.nextLine();

System.out.println("Original String: "+str1);

System.out.println("Length of the last word of the above string: "+length\_Of\_last\_word(str1));

}

public static int length\_Of\_last\_word(String str1) {

int length\_word = 0;

String[] words = str1.split(" ");

if(words.length>0) {

length\_word = words[words.length-1].length();

} else {

length\_word = 0;

}

return length\_word;

}

}

13.

**import java.util.\*;**

**public class DAY3READLOWERCASEUPPERCASENUMBERS**

**{**

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

**{**

**try**

**{**

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

**char ch = '0';**

**int up\_c =0;**

**int lo\_c = 0,num\_c=0;**

**while (ch != '\*')**

**{**

**System.out.print("enter the character:- ");**

**ch = input.next().charAt(0);**

**if(Character.isUpperCase(ch))**

**{**

**up\_c++;**

**}**

**else if(Character.isLowerCase(ch))**

**{**

**lo\_c++;**

**}**

**else if(Character.isDigit(ch))**

**{**

**num\_c++;**

**}**

**}**

**if(up\_c==0 &&lo\_c==0 &&num\_c==0)**

**{**

**System.out.println("invalid input");**

**}**

**else**

**{**

**System.out.println("the no.of.uppercase is "+up\_c);**

**System.out.println("the no.of.lowercase is "+(lo\_c));**

**System.out.println("the no.of.numbers is "+num\_c);**

**}**

**}**

**catch(Exception e){**

**System.out.println("invalid input");**

**}**

**}**

**}**

14.

import java.util.\*;

public class romannumbertonumber {

public static int romanToInt(String s) {

Map<Character, Integer>romanMap = new HashMap<>();

romanMap.put('I', 1);

romanMap.put('V', 5);

romanMap.put('X', 10);

romanMap.put('L', 50);

romanMap.put('C', 100);

romanMap.put('D', 500);

romanMap.put('M', 1000);

int n = s.length();

int num = romanMap.get(s.charAt(n - 1));

for (int i = n - 2; i>= 0; i--) {

if (romanMap.get(s.charAt(i)) >= romanMap.get(s.charAt(i + 1))) {

num += romanMap.get(s.charAt(i));

} else {

num -= romanMap.get(s.charAt(i));

}

}

return num;

}

public static void main(String args[]){

Scanner lol=new Scanner(System.in);

System.out.println("Enter a Roman number :");

String str=lol.nextLine().toUpperCase();

int flag=1;

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

if(str.charAt(i)=='I' || str.charAt(i)=='X' || str.charAt(i)=='V'|| str.charAt(i)=='C' || str.charAt(i)=='D' || str.charAt(i)=='L' || str.charAt(i)=='M' )

{

flag=0;

}

else{

flag=1;

break;

}

}

if(flag==0){

System.out.println(romanToInt(str));

}

else{

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

}

}

}

**15.**

import java.util.\*;

public class RANSOMNOTEANDMAGAZINE {

public static void main(String[] args){

try{

String s1,s2;

Scanner sc=new Scanner(System.in);

System.out.println("ransom note:");

s1=sc.next();

System.out.println("magazine=");

s2=sc.next();

boolean k=ransom(s1,s2);

System.out.println(k);

}

catch(Exception e)

{

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

}

}

public static booleanransom(String s1,String s2)

{

int count[]=new int[300];

char s3[]=s2.toCharArray();

for(int i=0;i<s3.length;i++)

{

count[s3[i]]++;

}

char s4[]=s1.toCharArray();

for(int i=0;i<s4.length;i++)

{

if(count[s4[i]]==0)

return false;

count[s4[i]]--;

}

return true;

}

}

**16.**

import java.io.\*;

import java.util.\*;

class DAY5DIVISIBLEBY2ANDSUBTRACT

{

public static void main(String arg[])

{

try

{

Scanner sc=new Scanner(System.in);

int n,s=0;

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

n=sc.nextInt();

while(n>0)

{

if(n%2==0)

{

n=n/2;

}

else

{

n--;

}

s++;

}

System.out.println("The no.of.steps:"+s);

}

catch(Exception e)

{

System.out.println("Due to string exception");

}

}

}

**17.**

import java.util.\*;

public class grade{

public static void main(String[] args) {

try {

float m1, m2, m3, m4, m5, m6;

Scanner sc = new Scanner(System.in);

System.out.println("enter marks in python:");

m1 = sc.nextInt();

System.out.println("enter marks in c programming:");

m2 = sc.nextInt();

System.out.println("enter marks in mathematics:");

m3 = sc.nextInt();

System.out.println("enter marks in physics:");

m5 = sc.nextInt();

System.out.println("enter marks in chemistry:");

m6 = sc.nextInt();

System.out.println("enter marks in professional ethics:");

m4 = sc.nextInt();

if (m1 >100 || m2 > 100 || m3 > 100 || m4 > 100 || m5 > 100 || m6 > 100)

{

throw new NullPointerException("invalid due to higher values.");

}

if (m1 <0 || m2 <0 || m3 <0 || m4 <0 || m5 < 0 || m6 < 0)

{

throw new ArithmeticException("invalid due to higher values.");

}

float total=m1+m2+m3+m4+m5+m6;

float agg=total/6;

System.out.println("TOTAL= " + total);

System.out.println("Aggregate=" + agg);

if(agg>75)

{

System.out.println("DISTINCTION");

}

else if(agg>=60 &&agg<75)

{

System.out.println("FIRST DIVISION");

}

else if(agg>=50 &&agg<60)

{

System.out.println("SECOND DIVISION");

}

else if(agg>=40 &&agg<50)

{

System.out.println("THIRD DIVISION");

}

else

{

System.out.println("FAIL");

}

}

catch(NullPointerException e)

{

System.out.println("invalid due to higher values.");

}

catch(ArithmeticException e)

{

System.out.println("invalid due to negative values.");

}

catch(Exception e)

{

System.out.println("invalid due to floating values.");

}

}

}

**18.**

import java.util.\*;

public class DAY3TAX{

public static void main(String[] Args){

Scanner sc= new Scanner(System.in);

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

int inc = sc.nextInt();

float tax;

if(inc> 0){

if(inc<=150000){

tax = 0;

}

else if(inc>150000 &&inc<=300000){

tax =(float)(0.1\*inc);

}

else if(inc>300000 &&inc<=500000){

tax = (float)(0.2\*inc);

}

else{

tax = (float)(0.3\*inc);

}

System.out.println("Tax : " + tax);

}

else{

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

}

}

}