**Write a program to print ‘Welcome to Java’.**

class Wel

{

public static void main(String args[])

{

System.out.println("Welcome to Java");

}

}

**WAP to display two numbers received as command line argument, and print its product**.

import java.io.\*;

class Product2

{

public static void main(String args[])

{

int i=0,count=0,prod=1,x;

String ele;

count=args.length;

while(i<count)

{

ele=args[i];

x=Integer.parseInt(ele);

prod=prod\*x;

i++;

}

System.out.println("The product is " +prod);

}

}

**WAP to read two numbers and display the output in the form of ‘Sum of 2 and 3 is 5**

import java.io.\*;

import java.lang.\*;

class Sum

{

public static void main(String args[])

{

DataInputStream din= new DataInputStream(System.in);

String s;

int x,y,z;

try

{

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

s=din.readLine();

x=Integer.parseInt(s);

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

s=din.readLine();

y=Integer.parseInt(s);

z=x+y;

System.out.println("Sum of "+x+" and "+y+" is" +z);

}

catch(IOException e)

{

System.out.println("The error is" +e);

}

}

}

**WAP to accept two numbers from the keyboard and swap them.**

import java.io.\*;

class Swap

{

public static void main(String args[])

{

DataInputStream din= new DataInputStream(System.in);

String s;

int x,y,temp=0;

try

{

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

s=din.readLine();

x=Integer.parseInt(s);

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

s=din.readLine();

y=Integer.parseInt(s);

temp=x;

x=y;

y=temp;

System.out.println("After swapping" +x +y);

}

catch(IOException e)

{

System.out.println("The error is" +e);

}

}

}

**WAP to read three numbers and the maximum.**

import java.io.\*;

import java.lang.\*;

class Max

{

public static void main(String args[])

{

int x,y,z;

String s;

try{

DataInputStream dir=new DataInputStream(System.in);

System.out.println("enter x");

s=dir.readLine();

x=Integer.parseInt(s);

System.out.println("enter y");

s=dir.readLine();

y=Integer.parseInt(s);

System.out.println("enter z");

s=dir.readLine();

z=Integer.parseInt(s);

if((x>y)&&(x>z))

{

System.out.println(x+"is max");

}else if((y>x)&&(y>z))

{

System.out.println(y+"is max");

}else

{

System.out.println(z+"is max");

}

}

catch(Exception e)

{

System.out.println("error"+e);

}

}}

**Find the minimum of three numbers using a single statement.**

import java.io.\*;

import java.lang.\*;

class Min2{

public static void main(String args[])

{

int x,y,z,temp;

String s;

try{

DataInputStream din=new DataInputStream(System.in);

System.out.println("enter x");

s=din.readLine();

x=Integer.parseInt(s);

System.out.println("enter y");

s=din.readLine();

y=Integer.parseInt(s);

System.out.println("enter z");

s=din.readLine();

z=Integer.parseInt(s);

if(y<z)

{

temp=((x<y)&&(x<z))?x:y;

System.out.println(temp+"is min");

}else

{

System.out.println(z+"is min");

}

}

catch(Exception e)

{

System.out.println(e+"error");

}}}

**WAP to search for a given element in an array.**

import java.io.\*;

class Search3

{

public static void main(String args[])

{

String s;

int n,i,a[],x;

Boolean f=false;

DataInputStream din=new DataInputStream(System.in);

try

{

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

s=din.readLine();

n=Integer.parseInt(s);

a=new int[n];

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

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

{

s=din.readLine();

a[i]=Integer.parseInt(s);

}

System.out.println("Array elements are :");

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

{

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

}

System.out.println("\nEnter the element to be found ");

s=din.readLine();

x=Integer.parseInt(s);

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

{

if(a[i]==x)

{

f=true;

}

}

if(f==true)

{

System.out.println("Element "+x+" found at position "+i);

}

else

{

System.out.println("Element "+x+" not found");

}

}

catch(IOException e)

{

System.out.println(e);}}}

**WAP to sort elements in an array in ascending order.**

import java.io.\*;

class Array

{

public static void main(String args[])

{

int n,a[],i,j,temp=0,x;

DataInputStream din=new DataInputStream(System.in);

String s;

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

try

{

s=din.readLine();

n=Integer.parseInt(s);

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

a=new int[n];

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

{

s=din.readLine();

a[i]=Integer.parseInt(s);

}

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

{

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

{

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

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

}

System.out.println("The sorted array is");

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

{

System.out.println(a[i]);

}

}

catch(IOException e)

{

System.out.println("The error is" +e);

}

}

}

**Write a program to print the row wise and column wise sum of 2D array. 1 2 3|6**

**2 1 1|4**

**. . .**

import java.io.\*;

import java.lang.\*;

class TwoArray5

{

public static void main(String args[])

{

int a[][]=new int[10][10];

int x,y,i,j,s;

try{

DataInputStream dir=new DataInputStream(System.in);

System.out.println("enter the no.of row");

x=Integer.parseInt(dir.readLine());

System.out.println("enter the no.of coloumn");

y=Integer.parseInt(dir.readLine());

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

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

{

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

{

a[i][j]=Integer.parseInt(dir.readLine());

}

}

System.out.println("the entered array is");

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

{

s=0;

System.out.println();

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

{

System.out.print(a[i][j]);

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

s=s+a[i][j];

}

System.out.print(s);

}

System.out.println();

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

{

s=0;

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

{

s=s+a[j][i];

}

System.out.print(s);

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

}

}

catch(Exception e)

{

System.out.println("error"+e);

}

}

}

**WAP with two functions to check for an integer palindrome. (Function1 should reverse the integer. Function2 should return 1,if it is a palindrome or else 0.)**

import java.io.\*;

class test

{

public int pal(int x)

{

int rem, rev=0;

while(x>0)

{

rem=x%10;

rev= rev\*10 + rem;

x=x/10;

}

return rev;

}

public int disp(int x, int rev)

{

System.out.println( "ORGINAL NUMBER: "+x);

System.out.println( "REVERSED NUMBER: "+rev);

if(rev==x)

{

return 1;

}

else

{

return 0;

}

}

}

class palindrome

{

public static void main(String args[])

{

DataInputStream din = new DataInputStream(System.in);

String s;

int a, rev,r;

try

{

System.out.println("ENTER NUMBER: ");

s=din.readLine();

a=Integer.parseInt(s);

test t=new test();

rev=t.pal(a);

r=t.disp(a, rev);

if(r==1)

{

System.out.println("PALINDROME!!!");

}

else

{

System.out.println("NOT A PALINDROME!!!");

}

}

catch (IOException e)

{

System.out.println("ERROR" +e );

}}}

**WAP to display numbers from m to n using single while loop.**

import java.io.\*;

import java.lang.\*;

class disp2

{

public static void main(String args[])

{

try

{

int a,b;

DataInputStream dir=new DataInputStream(System.in);

System.out.println("enter the starting element:");

a=Integer.parseInt(dir.readLine());

System.out.println("enter the last element:");

b=Integer.parseInt(dir.readLine());

System.out.println("The numbers are:");

while(a<=b)

{

System.out.println(a);

a=a+1;

}

}

catch(Exception e)

{

System.out.println("error"+e);

}

}

}

**WAP to find the sum of the series 1+(1+2)+(1+2+3)+ +(1+2+3+…+n) using a single while loop.**

import java.io.\*;

import java.lang.\*;

class Sum3

{

public static void main(String args[])

{

int n,sum=0,s=0,i,j=1;

try

{

DataInputStream dir=new DataInputStream(System.in);

System.out.println("enter the limit");

n=Integer.parseInt(dir.readLine());

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

{

while(j<=i)

{

s=s+j;

j=j+1;

}

sum=sum+s;

}

System.out.println("sum is "+sum);

}

catch(Exception e)

{

System.out.println("error"+e);

}

}

}

**WAP to find the sum of 1+(2/2!)+(3/3!)+(4/4!)+...+(n/n!) using a single for loop.**

import java.io.\*;

import java.lang.\*;

class test

{

public int i;

public Double s=0d;

test1 t=new test1();

Double sum(int n)

{

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

{

s=s+(i/t.factor(i));

}

return s;

}

}

class test1

{

public int r=1;

public int factor(int p)

{

if(p!=0)

{

r=p\*factor(p-1);

}

return r;

}

}

class sum4

{

public static void main(String args[])

{

try

{

int n;

DataInputStream dir=new DataInputStream(System.in);

System.out.println("enter the limit");

n=Integer.parseInt(dir.readLine());

test t1=new test();

System.out.println("Sum is:"+t1.sum(n));

}

catch(Exception e)

{

System.out.println("error"+e);}}}

**WAP to calculate area of a circle (functions with no argument and no return type.)**

import java.io.\*;

class test

{

public void cal()

{

DataInputStream din= new DataInputStream (System.in);

String s;

double a;

int r;

try

{

System.out.println("ENTER THE RADUIUS: ");

s=din.readLine();

r=Integer.parseInt(s);

a=3.14\*r\*r;

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

}

catch(IOException e)

{

System.out.println("ERROR"+e);

}}}

class circle

{

public static void main(String args[])

{

test t= new test();

t.cal();

}

}

**WAP to reverse a number (functions with argument and no return type.)**

import java.io.\*;

class RevNumber6

{

public static void main(String args[])

{

String s;

int n;

DataInputStream din=new DataInputStream(System.in);

try

{

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

s=din.readLine();

n=Integer.parseInt(s);

MethodReverse mr=new MethodReverse();

mr.reverseFunc(n);

}

catch(IOException e)

{

System.out.println(e);

}}}

class MethodReverse

{

int rev,rem;

public void reverseFunc(int n)

{

while(n>0)

{

rem=n%10;

rev=rev\*10+rem;

n=n/10;

}

System.out.println("The reverse of the given number is: "+rev);}}

**WAP to calculate sum of digits of a number (functions with argument and return type.)**

import java.io.\*;

class test

{

public int sm(int n)

{

int s=0, rem;

while(n>0)

{

rem=n%10;

s=s+rem;

n=n/10;

}

return s;

}}

class sumd

{

public static void main(String args[])

{

DataInputStream din= new DataInputStream(System.in);

String s;

int n, r;

try

{

System.out.println("ENTER THE NUMBER: ");

s=din.readLine();

n=Integer.parseInt(s);

test t= new test();

r= t.sm(n);

System.out.println("SUM OF DIGITS OF THE NUMBER: "+r);

}

catch(IOException e)

{

System.out.println("ERROR"+e);

}}}

**WAP to calculate sum of n even numbers (functions with no argument and return type.)**

import java.io.\*;

class test

{

public int funeve()

{

DataInputStream din=new DataInputStream(System.in);

String s;

int n,sum=0,i,e=0;

try

{

System.out.println("ENTER THE LIMIT NUMBER: ");

s=din.readLine();

n=Integer.parseInt(s);

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

{

e=e+2;

sum=sum+e;

}

}

catch(IOException e1)

{

System.out.println("ERROR" +e1);

}

return sum;}}

class even

{

public static void main(String args[])

{

int r;

test t=new test();

r=t.funeve();

System.out.println("SUM OF THE EVEN NUMBERS: "+r);}}

**WAP with nested functions to find the maximum of three numbers. Function1 should take in two arguments and find the maximum. Function2 should take in the third number and the maximum from function1 to find the maximum.)**

import java.io.\*;

import java.lang.\*;

class Fun

{

public int max(int t1,int t2)

{

if(t1>t2)

{

return t1;

}else

{

return t2;

}

}

public void max2(int t1,int t2,int t3)

{

int temp=max(t1,t2);

if(temp>t3)

{

System.out.println("max element is:"+temp);

}else

{

System.out.println("max element is:"+t3);

}

}

}

class Max1

{

public static void main(String args[])

{

try

{

int a,b,c;

DataInputStream dir=new DataInputStream(System.in);

System.out.println("enter a:");

a=Integer.parseInt(dir.readLine());

System.out.println("enter b:");

b=Integer.parseInt(dir.readLine());

System.out.println("enter c:");

c=Integer.parseInt(dir.readLine());

Fun obj=new Fun();

obj.max2(a,b,c);

}

catch(Exception e)

{

System.out.println("error"+e);

}

}

}

**WAP to find the factorial of n, using recursion.**

import java.io.\*;

import java.lang.\*;

class Fac

{

public int r=1;

public int factor(int n)

{

if(n!=1)

{

r=n\*factor(n-1);

}

return r;

}

}

class Recursion2

{

public static void main(String args[])

{

try

{

int n,r=1;

DataInputStream dir =new DataInputStream(System.in);

System.out.println("enter the limit");

n=Integer.parseInt(dir.readLine());

Fac obj=new Fac();

r=obj.factor(n);

System.out.println("Factorial is: "+r);

}

catch(Exception e)

{

System.out.println("error"+e);

}

}

}

**WAP to display numbers from n to 1 and vice versa, using recursion.**

import java.io.\*;

import java.lang.\*;

class Prgm

{

public int temp(int n)

{

if(n!=0)

{

System.out.println(n);

n=temp(n-1);

}

return 1;

}

public int temp1(int i,int n)

{

if(i<=n)

{

System.out.println(i);

i=temp1(i+1,n);

}

return 1;

}

}

class Recursion3

{

public static void main(String args[])

{

try

{

int n,n1;

DataInputStream dir=new DataInputStream(System.in);

System.out.println("enter the limit");

n=Integer.parseInt(dir.readLine());

Prgm obj=new Prgm();

Prgm obj1=new Prgm();

System.out.println("reverse order: ");

n1=obj.temp(n);

System.out.println("orginal order: ");

n1=obj1.temp1(1,n);

}

catch(Exception e)

{

System.out.println("error"+e);

}}}