***PENCHAL Java Workspace***

***PROGRAMS on NUMBERS***

**Write a program to Print 1 to N numbers?**

class Printnums

{

public static void main (String[] args)

{

java.util.Scanner sc = new java.util.Scanner (System.in);

System.out.println ("enter value of n");

int n = sc.nextInt();

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

{

System.out.println (i);

}

}

}

**OUTPUT:**

enter value of n: 10

1

2

3

4

5

6

7

8

9

10

**Write a program to Print REVERSE of N to 1 numbers?**

class Printnums

{

public static void main(String[] args)

{

java.util.Scanner sc = new java.util.Scanner(System.in);

System.out.println ("enter value of n");

int n=sc.nextInt();

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

{

System.out.print(i);

}

}

}

**OUTPUT:**

enter value of n: 10

10 9 8 7 6 5 4 3 2 1

**Write a program to display sum of 1 to N numbers?**

class Sumnum

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

int sum=0;

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

{

sum+=i;

}

System.out.println(sum);

}

}

**OUTPUT:**

enter value of n: 10

55

**Write a program to check given number is EVEN or ODD?**

class EvenOdd

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

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

int n=sc.nextInt();

if(n%2==0)

System.out.println(n+” is even");

else

System.out.println(n+" is odd");

}

}

**OUTPUT:**

enter the num: 20

20 is even

F:\Practice>java Even(Command prompt)

enter the num: 11

11 is odd

**Write a program to display PRIME NUMBERS from 1 to n?**

class Prime

{

public static void main (String [] args)

{

java.util.Scanner sc=new java.util.Scanner (System.in);

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

int n=sc.nextInt ();

System.out.println ("Prime numbers between 1 and " + n);

//loop through the numbers one by one

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

{

boolean isPrime = true;

//check to see if the number is prime

for (int j=2; j < i ; j++)

{

if (i % j == 0)

{

isPrime = false;

break;

}

}

// print the number

if (isPrime)

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

}

}

}

**OUTPUT:**

enter number

25

Prime numbers between 1 and 25

1 2 3 5 7 11 13 17 19 23

**Write a program to check whether the given number is PRIME or not?**

class Prime

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

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

int n=sc.nextInt();

int i;

if(n==1)

{

System.out.println("Prime starts from 2");

}

for(i=2;i<n ;i++)

{

if(n%i==0)

System.out.println("not a prime");

break;

}

if(n==i)

System.out.println("prime");

}

}

**OUTPUT:**

Enter the number : 17

Prime

**Write a program to find SUM OF PRIME numbers?**

import java.util.Scanner;

public class SumofPrime

{

public static void main(String[] args)

{

Scanner scn=new Scanner(System.in);

System.out.println("Enter the range to print sum of prime Nos.....");

int range=scn.nextInt();

int sum=0;

for(int i=1;i<=range ;i++)

{

if(isPrime(i))

sum=sum+i;

}

System.out.println(sum);

}

public static boolean isPrime(int num)

{

if(num==1) return false;

for(int i=2;i<num ;i++)

{

if(num%i==0)

{

return false;

}

}

return true;

}

}

**OUTPUT:**

Enter the range to print sum of prime Nos.....

10

17

**Write a program to display MULTIPLICATION table?**

class Multiplication

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

for(int i=1;i<=10;i++)

{

System.out.println(n+"\*"+i+"="+(n\*i));

}

}

}

**Output:**

enter value of n: 2

2\*1=2

2\*2=4

2\*3=6

2\*4=8

2\*5=10

2\*6=12

2\*7=14

2\*8=16

2\*9=18

2\*10=20

**Write a program to display MULTIPLICATION TABLES?**

class Tables

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

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

{

for (int j=1;j<=10 ;j++ )

{

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

}

}

System.out.println();

}

}

**OUTPUT:**

enter value of n: 5

1\*1=1 2\*1=2 3\*1=3 4\*1=4 5\*1=5

1\*2=2 2\*2=4 3\*2=6 4\*2=8 5\*2=10

1\*3=3 2\*3=6 3\*3=9 4\*3=12 5\*3=15

1\*4=4 2\*4=8 3\*4=12 4\*4=16 5\*4=20

1\*5=5 2\*5=10 3\*5=15 4\*5=20 5\*5=25

1\*6=6 2\*6=12 3\*6=18 4\*6=24 5\*6=30

1\*7=7 2\*7=14 3\*7=21 4\*7=28 5\*7=35

1\*8=8 2\*8=16 3\*8=24 4\*8=32 5\*8=40

1\*9=9 2\*9=18 3\*9=27 4\*9=36 5\*9=45

1\*10=10 2\*10=20 3\*10=30 4\*10=40 5\*10=50

**Write program weather the number is PERFECT NUMBER or not?**

**Def:**

**Perfect number,**a positive [integer](https://www.britannica.com/topic/integer) that is equal to the sum of its proper divisors. The smallest perfect number is 6, which is the sum of 1, 2, and 3. 

import java.util.\*;

class Perfectnumber

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int num=sc.nextInt();

int sum=1;

for (int i=2;i<=num/2;i++ )

{

if (num%i==0)

sum=sum+i;

}

if (sum==num)

{

System.out.println(num+"is a Perfect number");

}

else

System.out.println(num+" is not a Perfect number");

}

}

**OUTPUT:**

enter a number

6

6 is a Perfect number

**Write a program to display RANGE of PERFECT NUMBERS?**

import java.util.\*;

class Rangeperfectnumber

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int n=sc.nextInt();

for(int num=1;num<=n; num++)

{

int sum=1;

for (int i=2;i<=num/2;i++ )

{

if (num%i==0)

sum=sum+i;

}

if (sum==num)

{

System.out.println(num+"is a Perfect number");

}

}

}

}

**OUTPUT:**

enter a number

100

1is a perfect number

6is a perfect number

28is a perfect number

**Write a program to check the given number is PALINDROME or not?**

import java.util.\*;

class Palindrome

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int n =sc.nextInt();

int t=n;

int rev=0;

while (n!=0)

{

rev=rev\*10+(n%10);

n=n/10;

}

if (rev==t)

System.out.println(t+" is a palindrome number");

else

System.out.println(t+" is not a palindrome number");

}

}

**OUTPUT:**

enter a number

121

121 is a palindrome number

enter a number

143

143 is not a palindrome number

**Write a program to find the FACTORIAL of a given number?**

import java.util.\*;

class Factorial

{

public static void main(String[] args)

{

Scanner scn=new Scanner(System.in);

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

int n=scn.nextInt();

int fact=1;

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

{

fact=fact\*i;

}

System.out.println(fact);

}

}

**OUTPUT:**

Enter the number

5

120

**Write a program to find the FACTORIAL of a given RANGE of numbers?**

import java.util.\*;

class FactRange

{

static int fact(int n)

{

int fact=1;

while (n>0)

{

fact=fact\*n;

n--;

}

return fact;

}

public static void main(String[] args)

{

Scanner scn=new Scanner(System.in);

System.out.println("enter the factorial range number");

int k=scn.nextInt();

for (int i=1;i<=k ;i++)

{

System.out.println(i+"!---->"+fact(i));

}

}

}

**OUTPUT:**

enter the factorial range number :7

1!---->1

2!---->2

3!---->6

4!---->24

5!---->120

6!---->720

7!---->5040

**Write program to check the given number is STRONG or not?**

**Def: Strong numbers** are the **numbers** whose sum of factorial of digits is equal to the original **number**.

Example: 145 is a **strong number**.

import java.util.\*;

class Strongnumber

{

static int fact(int n)

{

int fact=1;

while (n>0)

{

fact= fact\*n;

n--;

}

return fact;

}

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int n =sc.nextInt();

int num=n;

int sum=0;

int t=num;

while (num!=0)

{

int r=num%10;

sum=sum + fact(r);

num=num/10;

}

if (sum==t)

System.out.println(t+" is a strong number");

else

System.out.println(t+" not a strong number");

}

}

**OUTPUT:**

enter a number

143

143not a strong number

**Write program weather to find range of STRONG NUMBER?**

import java.util.\*;

class Strongnumber

{

static int fact(int n)

{

int fact=1;

while (n>0)

{

fact= fact\*n;

n--;

}

return fact;

}

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int n =sc.nextInt();

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

{

int num=i;

int sum=0;

int t=num;

while (num!=0)

{

int r=num%10;

sum=sum + fact(r);

num=num/10;

}

if (sum==t)

System.out.println(t+ " is a strong number");

}

}

}

**OUTPUT:**

enter a Range

145

1is a strong number

2is a strong number

145 is a strong number

**Write a program to display FIBONACCI series of a number?**

**Def:** a series of numbers in which each number ( *Fibonacci number* ) is the sum of the two preceding numbers. The simplest is the series 1, 1, 2, 3, 5, 8, etc.

class Fibonacci

{

static int fib(int n)

{

if(n==0)

return 0;

if(n==1)

return 1;

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

}

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

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

int m=sc.nextInt();

int f=fib(m);

System.out.println(f);

}

}

**OUTPUT:**

Enter the number

10

55

**Write a program to display range of FIBONACCI numbers?**

import java.util.Scanner;

public class FibonacciSeries1

{

public static void main(String[] args)

{

Scanner scn=new Scanner(System.in);

System.out.println("enter the range:.........");

int range=scn.nextInt();

int a=0;

int b=1;

int c=0;

System.out.print(a);

System.out.print(b);

for (int i = 2; i <=range; i++)

{

c=a + b;

if(c<=range)

{

//c=a + b;

System.out.print(c);

a=b;

b=c;

}

}

}

}

**OUTPUT:**

Enter the range….

50

0 1 1 2 3 5 8 13 21 34

**Write a program to REVERSE the number?**

import java.util.Scanner;

class Reversenum

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int num=sc.nextInt();

int t=num;

int rev=0;

while(num!=0)

{

rev = rev\*10+(num%10);

num = num/10;

}

System.out.println(rev);

}

}

**OUTPUT:**

enter the number

105

501

**Write a program to display GCD of two numbers?**

import java.util.Scanner;

class Gcd

{

static int gcd(int m ,int n)

{

if(m<n)

return gcd(n ,m);

if(n==0)

return m;

return gcd(n, m%n);

}

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

System.out.println(" Enter the two numbers");

int p = sc.nextInt();

int q = sc.nextInt();

int a=gcd(p, q);

System.out.println(a);

}

}

**OUTPUT:**

Enter the two numbers

90

120

30

**Write a program to check the given number is PRIME PALINDROME or not?**

import java.util.\*;

class Palindrome

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int n =sc.nextInt();

int t=n;

int rev=0;

int i;

while (n!=0)

{

rev=rev\*10+(n%10);

n=n/10;

}

if (rev==t)

{

for( i=2;i<rev ;i++)

{

if(rev % i==0)

{

System.out.println("not a prime palindrome");

break;

}

}

if(rev==i)

System.out.println(t+ "is a prime palindrome number");

}

else

System.out.println(t+ "is not a prime palindrome number");

}

}

**OUTPUT:**

enter a number

313

313 is a prime palindrome number

enter a number

103

103 is not a prime palindrome number

**Write a Program to check the given number is ARMSTRONG or not?**

**Def:** An Armstrong number is an integer such that the sum of the power of its digits is equal to the number itself.

For example, 371 is an Armstrong number since 3\*\*3 + 7\*\*3 + 1\*\*3 = 371.

9 is an Armstrong number since 9\*1= 9.

import java.util.Scanner;

public class Armstrong1

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int n=sc.nextInt();

boolean r=isArmstrong(n);

if(r)

System.out.println("Given num is Armstrong");

else

System.out.println("Given num is not Armstrong");

}

static int countDigit(int num)

{

int count=0;

while(num>0)

{

count++;

num=num/10;

}

return count;

}

static int pow(int n, int p)

{

int pw=1;

while(p>0)

{

pw=pw\*n;

p--;

}

return pw;

}

static boolean isAmstrong(int x)

{

int nd=countDigit(x);

int t=x;

int sum=0;

while(t>0)

{

int r=t%10;

sum=sum+ pow(r ,nd);

t=t/10;

}

if(sum==x)

return true;

else

return false;

}

}

**OUTPUT:**

enter the number

153

Given num is Armstrong

enter the number

1

Given num is Armstrong

**Write a Program to display the range of ARMSTRONG numbers?**

import java.util.Scanner;

public class Armstrong2

{

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

{

boolean r=isAmstrong(i);

if(r)

System.out.println(i +" is Armstrong");

}

}

static int countDigit(int num)

{

int count=0;

while(num>0)

{

count++;

num=num/10;

}

return count;

}

static int pow(int n ,int p)

{

int pw=1;

while(p>0)

{

pw=pw\*n;

p--;

}

return pw;

}

static boolean isAmstrong(int x)

{

int nd=countDigit(x);

int t=x;

int sum=0;

while(t>0)

{

int r=t%10;

sum=sum +pow(r ,nd);

t=t/10;

}

if(sum==x)

return true;

else

return false;

}

}

**OUTPUT:**

enter the number: 300

0 is Armstrong

1 is Armstrong

2 is Armstrong

3 is Armstrong

4 is Armstrong

5 is Armstrong

6 is Armstrong

7 is Armstrong

8 is Armstrong

9 is Armstrong

153 is Armstrong

**Write a program to Swap two numbers without using 3rd variable?**

class Swap

{

public static void main(String[] args) {

int i=10;

int j=20;

i=i + j;

j=i-j;

i=i-j;

System.out.println(“i=”+i);

System.out.println(“j=”+j);

}

}

**OUTPUT:**

i=20

j=10

**Write a program to Swap two numbers with using 3rd variable?**

class Swapv

{

public static void main(String[] args)

{

int i=10;

int j=20;

int k;

k=i;

i=j;

j=k;

System.out.println(“i=”+i);

System.out.println(“j=”+j);

}

}

**OUTPUT:**

i=20

j=10

**NUMBER CONVERSIONS**

**Write a program to convert BINARY to DECIMAL?**

import java.util.\*;

public class Bintodec

{

public static void main(String[] args)

{

System.out.println("enter the binary number");

Scanner sc=new Scanner(System.in);

long n =sc. nextLong();

long dec=0;

int count=0;

while(n>0)

{

long r=n%10;

dec=dec +r\*pow(2,count);

count++;

n/=10;

}

System.out.println("decimal Equivalent:" +dec);

}

static int pow(int n, int p)

{

int pw=1;

while(p>0)

{

pw=pw\*n;

p--;

}

return pw;

}

}

**OUTPUT:**

enter the binary number

111100001111

decimal Equivalent:3855

**Write a program to convert DECIMAL to BINARY?**

import java.util.\*;

public class Dectobin

{

public static void main(String[] args)

{

System.out.println("enter the decimal number");

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

String bin="";

while(n>0)

{

int r=n%2;

bin= r + bin;

n=n/2;

}

System.out.println("Binary Equivalent:" + bin);

}

}

**OUTPUT:**

enter the decimal number

3855

Binary Equivalent:111100001111

**Write a program to convert OCTAL to DECIMAL?**

import java.util.\*;

public class Octtodec

{

public static void main(String[] args)

{

System.out.println("enter the octal number");

Scanner sc=new Scanner(System.in);

int n =sc.nextInt();

int dec=0;

int count=0;

while(n>0)

{

int r=n%10;

dec=dec + r\*pow(8,count);

count++;

n/=10;

}

System.out.println("decimal Equivalent:" +dec);

}

static int pow(int n, int p)

{

int pw=1;

while(p>0)

{

pw=pw\*n;

p--;

}

return pw;

}

}

**OUTPUT:**

enter the octal number

763

decimal Equivalent:499

**Write a program to convert DECIMAL to OCTAL?**

import java.util.\*;

public class Dectooct

{

public static void main(String[] args)

{

System.out.println("enter the decimal number");

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

String oct="";

while(n>0)

{

int r=n%8;

oct= r + oct;

n=n/8;

}

System.out.println("Octal Equivalent:" + oct);

}

}

**OUTPUT:**

enter the decimal number

56

Octal Equivalent:70

**Write a program to convert DECIMAL to HEXADECIMAL?**

import java.util.\*;

public class Dectohex

{

public static void main(String[] args)

{

System.out.println("enter the decimal number");

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

String hex="";

while(n>0)

{

int r=n%16;

switch (r)

{

case 10: hex='A'+ hex;

break;

case 11: hex='B'+ hex;

break;

case 12: hex='C'+ hex;

break;

case 13: hex='D'+ hex;

break;

case 14: hex='E'+ hex;

break;

case 15: hex='F'+ hex;

break;

default: hex=r + hex;

break;

}

n=n/16;

}

System.out.println("Hexadecimal Equivalent :"+hex);

}

}

**OUTPUT:**

enter the decimal number

469

Hexadecimal Equivalent :1D5

**Write a program to convert DECIMAL to ALL(Octal , Hexa and Binary)?**

import java.util.\*;

public class DectoAll

{

public static void main(String[] args)

{

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

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

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

int ba=sc.nextInt();

System.out.println(ba +"base equivalent "+Convert(n, ba));

}

static String Convert(int num, int base)

{

String st="0123456789ABCDEF";

String b="";

while(num>0)

{

int r= num % base;

b=st.charAt(r)+b;

num=num/base;

}

return b;

}

}

**OUTPUT:**

enter the number: 469

enter the base: 16

16 base equivalent: 1D5

enter the number: 369

enter the base: 8

8 base equivalent : 561

enter the number: 50

enter the base: 2

2 base equivalent: 110010

**Write a program to convert DECIMAL to HEXADECIMAL?**

import java.util.Scanner;

class HexatoDec

{

public static void main(String[] args)

{

System.out.println("enter the Hexa dec number");

Scanner sc=new Scanner(System.in);

String st=sc.nextLine();

int dec = 0;

int count = 0;

int l = st.length();

while(l>0)

{

int r=0;

char ch=st.charAt(l-1);

if(ch>=65 && ch<=70)

r=ch-55;

else if(ch>=97 && ch<=102)

r=ch-87;

else

r=ch-48;

dec=dec + r\*pow(16,count);

count++;

l--;

}

System.out.println("Decimal Equivalent: "+dec);

}

static int pow(int n ,int p)

{

int pw=1;

while(p>0)

{

pw=pw\*n;

p--;

}

return pw;

}

}

**OUTPUT:**

enter the Hexa dec number: 1D5

Decimal Equivalent: 469

***PROGRAMS on***

***STAR PATTERNS***

**Write a program to display EQUILATERAL TRIANGLE with stars?**

import java.util.Scanner;

public class EquiTri

{

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=0;i<n ;i++)

{

for (int j=0;j<n-i-1;j++)

{

System.out.print(" ");

}

for(int k=0;k<=i; k++)

{

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

}

System.out.println( );

}

}

}

**OUTPUT:**

**enter the number: 7**

**\***

**\* \***

**\* \* \***

**\* \* \* \***

**\* \* \* \* \***

**\* \* \* \* \* \***

**\* \* \* \* \* \* \***

**Write a program to Display INVERTED TRIANGLE with stars?**

import java.util.Scanner;

public class InverTri

{

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=0;i<n ;i++)

{

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

{

System.out.print(" ");

}

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

{

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

}

System.out.println ( );

}

}

}

**OUTPUT:**

enter the number: 4

**\*\*\*\*\*\*\***

**\*\*\*\*\***

**\*\*\***

**\***

**Write a program to display the FILLED BOX with stars?**

class FilledBox

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

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

{

for (int j=0;j<n ;j++ )

{

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

}

System.out.println();

}

}

}

**Output:**

enter value of n: 7

**\*\*\*\*\*\*\***

**\*\*\*\*\*\*\***

**\*\*\*\*\*\*\***

**\*\*\*\*\*\*\***

**\*\*\*\*\*\*\***

**\*\*\*\*\*\*\***

**Write a program to display the HALLOW BOX with stars?**

class Box1

{

public static void main(String[] args)

{

java.util.Scanner sc = new java.util.Scanner(System.in);

System.out.println ("enter value of n");

int n = sc.nextInt();

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

{

for (int j=0;j<n ;j++ )

{

if (i==0||j==0||i==n-1||j==n-1)

{

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

}

else

{

System.out.print(" ");

}

}

System.out.println();

}

}

}

**Output:**

enter value of n 7

**\* \*\*\*\*\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \*\*\*\*\* \***

**Write a program to display the BOX and CROSS inside it with stars?**

class Box1

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

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

{

for (int j=0;j<n ;j++ )

{

if (i==0||j==0||i==n-1||j==n-1||i==j||i+j==n-1)

{

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

}

else

{

System.out.print(" ");

}

}

System.out.println();

}

}

}

**OUTPUT:**

enter value of n: 7

**\*\*\*\*\*\*\***

**\*\* \*\***

**\* \* \* \***

**\* \* \***

**\* \* \* \***

**\*\* \* \***

**\*\*\*\*\*\*\***

**Write a program to display CROSS mark with stars?**

class Cross

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

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

{

for (int j=0;j<n ;j++ )

{

if(i==j||I + j==n-1)

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

else

System.out.print(" ");

}

System.out.println();

}

}

}

**OUTPUT:**

**enter value of n 7(odd)**

**\* \***

**\* \***

**\***

**\* \***

**\* \***

**\* \***

**Write a program to display RIGHT ANGLE triangle with stars*?***

class Triangle

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

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

{

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

{

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

}

System.out.println();

}

}

}

**OUTPUT:**

**enter value of n :7**

**\***

**\*\***

**\*\*\***

**\*\*\*\***

**\*\*\*\*\***

**\*\*\*\*\*\***

**Write a program to display Reverse Triangle with stars*?***

class Triangle1

{

public static void main (String [] args)

{

java.util.Scanner sc=new java.util.Scanner (System.in);

System.out.println ("enter value of n");

int n=sc.nextInt ();

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

{

for (int j=0; j<n; j++)

{

if (i<=j)

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

else

System.out.print (" ");

}

System.out.println ();

}

}

}

OUTPUT:

enter value of n 7

\*\*\*\*\*\*

\*\*\*\*\*

\*\*\*\*

\*\*\*

\*\*

\*

**Write a program to display MIRROR of RIGHT ANGLE triangle with stars*?***

class Triangle2

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

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

{

for (int j=0;j<n ;j++ )

{

if(i + j>n-1)

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

else

System.out.print(" ");

}

System.out.println();

}

}

}

***OUTPUT:***

enter value of n: 7

\*

\*\*

\*\*\*

\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*\*

**Write a program to display DOWNWARD MIRROR of RIGHT ANGLE triangle with stars*?***

class Triangle2

{

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

System.out.println("enter value of n");

int n=sc.nextInt();

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

{

for (int j=0;j<n ;j++ )

{

if(i + j<=n-1)

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

else

System.out.print(" ");

}

System.out.println();

}

}

}

**OUTPUT:**

**enter value of n: 7**

**\*\*\*\*\*\***

**\*\*\*\*\***

**\*\*\*\***

**\*\*\***

**\*\***

**\***

**Write a program to display DIAMOND with stars?**

class Diamond

{

public static void main(String[] args)

{

java.util.Scanner scn=new java.util.Scanner (System.in);

System.out.println ("enter odd number");

int n=scn.nextInt();

int spaces=n/2;

int stars=1;

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

{

for( int j=1;j<=spaces ;j++)

{

System.out.print(" ");

}

for ( int k=1;k<=stars ;k++)

{

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

}

System.out.println();

if (i<=n/2)

{

spaces--;

stars+=2;

}

else

{

spaces++;

stars-=2;

}

}

}

}

OUTPUT:

\*

\*\*\*

\*\*\*\*\*

\*\*\*\*\*\*\*

\*\*\*\*\*

\*\*\*

\*

**Write a program to display HALLOWDIAMOND with stars?**

import java.util.Scanner;

class HallowDiamond

{

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

System.out.println("enter the value of n");

int n = sc.nextInt();

n = (n+1)/2;

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

{

for (int j=0;j<n-i-1 ;j++ )

{

System.out.print(" ");

}

for (int j=0;j<2\*i+1 ;j++ )

{

if (j==0||j==2\*i)

{

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

}

else

System.out.print(" ");

}

System.out.println();

}

n = n-1;

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

{

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

{

System.out.print(" ");

}

for (int j=0;j<2\*(n-i)-1 ;j++ )

{

if (j==0||j==2\*(n-i)-2)

{

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

}

else

System.out.print(" ");

}

System.out.println();

}

}

}

**OUTPUT:**

**enter the value of n ; 13**

**\***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\***

**Write a program to display NUMBERS in DIAMOND shape?**

import java.util.Scanner;

class NumDiamond

{

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

System.out.println("enter the value of n");

int n = sc.nextInt();

n = (n+1)/2;

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

{

for (int j=0;j<n-1-i ;j++ )

{

System.out.print(" ");

}

int k=1;

for (int j=0;j<2\*i+1 ;j++ )

{

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

if (j<(2\*i+1)/2)

k++;

else

k--;

}

System.out.println();

}

n = n-1;

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

{

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

{

System.out.print(" ");

}

int k=1;

for (int j=0;j<2\*(n-i)-1 ;j++ )

{

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

if (j<(2\*(n-i)-1)/2)

k++;

else

k--;

}

System.out.println();

}

}

}

**OUTPUT:**

enter the value of n: 7

1

121

12321

1234321

12321

121

1

**Write a program to display CHARACTERS in DIAMOND shape?**

import java.util.Scanner;

class CharDiamond

{

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

System.out.println("enter the value of n");

int n = sc.nextInt();

n = (n+1)/2;

char ch='A';

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

{

for (int j=0;j<n-1-i ;j++ )

{

System.out.print(" ");

}

int k=0;

for (int j=0;j<2\*i+1 ;j++ )

{

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

if (j<(2\*i+1)/2)

k++;

else

k--;

}

System.out.println();

}

n = n-1;

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

{

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

{

System.out.print(" ");

}

int k=0;

for (int j=0;j<2\*(n-i)-1 ;j++ )

{

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

if (j<(2\*(n-i)-1)/2)

k++;

else

k--;

}

System.out.println();

}

}

}

**OUTPUT:**

enter the value of n: 7

A

ABA

ABCBA

ABCDCBA

ABCBA

ABA

A

**Write a program to display M pattern with stars?**

class DisplayM

{

public static void main(String[] args)

{

int spaces=8;

for (int i=1;i<=5 ;i++ )

{

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

{

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

}

for ( int k=1;k<=spaces ; k++)

{

System.out.print(" ");

}

for(int l=1;l<=i ;l++)

{

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

}

System.out.println();

spaces -=2;

}

}

}

**OUTPUT:**

\* \*

\*\* \*\*

\*\*\* \*\*\*

\*\*\*\* \*\*\*\*

\*\*\*\*\*\*\*\*\*\*

**Write a program to display sequence of numbers in TRIANGLE format?**

import java.util.Scanner;

class Series

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

int n = sc.nextInt();

int k =0;

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

{

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

{

k++;

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

}

System.out.println(" ");

}

}

}

**OUTPUT:**

enter the rows: 5

1

2 3

4 5 6

7 8 9 10

11 12 13 14 15

***Programs on Strings***

**Write a program to find weather a string is ANAGRAM or not?**

**Def:** a word, phrase, or name formed by rearranging the letters of another, such as *silent* formed from *listen*.

class Anagram

{

static String removeSpaces(String str)

{

char [] ch=str.toCharArray ();

//convert the string into array

String nstr=" ";

//create a new empty string

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

{

if(ch[i]!=' ')

nstr=nstr + ch[i];

/\* if the character at ith index is not equal to space

then add that character to new empty string\*/

}

return nstr;

}

static String toLowerCase(String str)

{

char[] ch=str.toCharArray();

//convert the string into array

String nstr=" ";

//create a new empty string

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

{

if(ch[i]>=65 && ch[i]<=90)

{

nstr=nstr+((char)ch[i]+32);

}

/\*if any alphabet is in upper case convert it

into lower case\*/

else

{

nstr=nstr + ch[i];

//if it is in lower case no need to convert

}

}

return nstr;

}

static String sort(String str)

{

char[] ch=str.toCharArray();

//sort string in alphabetical order

for(int i=0;i<ch.length-1;i++)

{

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

{

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

{

char t=ch[i];

ch[i]=ch[j];

ch[j]=t;

}

}

}

String st=new String(ch);

return st;

}

static boolean compare(String s1, String s2)

{

if(s1.length()!=s2.length())

return false;

else

{

s1=toLowerCase(s1);

s2=toLowerCase(s2);

s1=sort(s1);

s2=sort(s2);

char ch1[]=s1.toCharArray();

char ch2[]=s2.toCharArray();

for(int i=0;i<ch1.length;i++)

{

if (ch1[i]!=ch2[i])

{

return false;

}

}

return true;

}

}

public static void main(String[] args)

{

java.util.Scanner sc=new java.util.Scanner(System.in);

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

String s1=sc.nextLine();

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

String s2=sc.nextLine();

s1=removeSpaces (s1);

s2=removeSpaces (s2);

boolean b= compare(s1,s2);

if(b)

System.out.println("string is anagram");

else

System.out.println("not an anagram");

}

}

**Output:**

Enter the first string

Mother in law

Enter the second string

Hitler woman

string is anagram

**Write program weather the string is PANAGRAM or not?**

**Def:** a sentence containing every letter of the alphabet.

import java.util.Scanner;

public class Panagram

{

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

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

String s = sc.nextLine();

System.out.println("given string is :"+"\n" +s);

String st=removeSpace(s);

int d = check(st);

if(d == -1)

System.out.print(s+"\n" + "is not pangram");

else

System.out.print(s+"\n" +"is a pangram");

}

public static String removeSpace(String s)

{

char ch[]=s.toCharArray();

String nstr="";

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

{

if (ch[i]!=' ')

{

nstr=nstr + ch[i];

}

}

return nstr;

}

public static int check(String st)

{

int n = 26;

/\*if(s.length() < n){

return -1; use these lines only for perfect Panagram i.e., it must contain only

}\*/ 26 letters (alphabets) without any repetition.

for(char i = 'A'; i <= 'Z' ; i++){

if((st.indexOf(i) < 0) && (st.indexOf((char)(i + 32)) < 0))

{

return -1;

}

}

return 1;

}

}

**OUTPUT:**

enter the string:

the quick brown fox jumps over a lazy dog

given string is :

the quick brown fox jumps over a lazy dog

the quick brown fox jumps over a lazy dog

is a pangram

**Write a program check the given string is PALINDROME or not?**

import java.util.Scanner;

public class PalindromeStr

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st=sc.nextLine();

String nstr="";

char ch[]=st .toCharArray();

for (int i=0 ;i<ch.length/2;i++ )

{

char t=ch[i];

ch[i]=ch[ch.length-1-i];

ch[ch.length-1-i]=t;

}

nstr=new String (ch);

if(nstr.equalsIgnoreCase(st))

System.out.println( st+" string is palindrome ");

else

System.out.println(st+" string is not palindrome");

}

}

**OUTPUT:**

Enter the string: Malayalam

Malayalam string is palindrome

**Write a program to display REVERSE of a STRING?**

import java.util.Scanner;

class Revstring

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st=sc.nextLine();

char ch[]=st.toCharArray();

for (int i=0 ;i<ch.length/2;i++ )

{

char t=ch[i];

ch[i]=ch[ch.length-1-i];

ch[ch.length-1-i]=t;

}

st=new String (ch);

System.out.println("Reserved string is :"+st);

}

}

**OUTPUT:**

enter the string

rama and laxmana

Reserved string is : anamxal dna amar

**Write a program to COUNT number of CHARACTERS in a String?**

import java.util.Scanner;

public class NoOfCharactersInaString

{

public static void main(String[] args)

{

int count=0;

Scanner scn=new Scanner(System.in);

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

String st=scn.nextLine();

char ch[]=st.toCharArray();

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

{

if(ch[i]>=65&&ch[i]<=90 ||ch[i]>=97 && ch[i]<=122||ch[i]>=48&&ch[i]<=57 && ch[i]!=32 && ch[i]!=',' &&ch[i]!='.')

count++;

}

System.out.println("No of Characters="+count);

}

}

**OUTPUT:**

Enter a string:..........

adkvdh dodksk

No of Characters=12

**Write a program to find the sum of numbers in an ALPHA NUMERIC STRING?**

import java.util.Scanner;

public class SumOfDigits

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

System.out.println("enter the alpha numeric string");

String str=sc.nextLine();

char[] ch=str.toCharArray();

int j=0;

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

{

if(ch[i]>=48 && ch[i]<=57)

{

j+=ch[i]-48;

}

}

System.out.println(j);

}

}

**OUTPUT:**

enter the alpha numeric string

139y1d5801

28

**Write a Program for number of characters in each WORD and count them?**

import java.util.Scanner;

class Countword

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String s=sc.nextLine();

String nst=" ";

int nc=0;

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

{

if (s.charAt(i)==' ')

{

nst=nst + nc;

nc=0;

}

else

{

nc++;

nst=nst + s.charAt(i);

}

}

nst=nst + nc;

System.out.println (" no of character in each word in a string is "+ nst);

}

}

**OUTPUT:**

enter the string

rama and laxmana

no of character in each word in a string is rama 4 and 3 laxmana 7

**Write a Program to display OCCURENCES of each character in a STRING?**

import java.util.Scanner;

class NumOfOcc

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st = sc.nextLine();

int n=st.length();

char ch[]=st.toCharArray();

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

{

int count=1;

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

{

if(ch[i]==ch[j])

{

count++;

int k=j;

while (k<n-1)

{

ch[k]=ch[k+1];

k++;

}

n--;

j--;

}

}

System.out.println(ch[i]+" occurred "+count+" times");

}

String nst=" ";

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

{

nst=nst + ch[i];

}

System.out.println(nst);

}

}

**OUTPUT:**

Enter the String Malayalam

m occurred 2 times

a occurred 4 times

l occurred 2 times

y occurred 1 times

maly

**Write a program to display number of LOWERCASE, UPPERCASE, SPECIAL SYMBOLS, SPACES and DIGITS in a STRING?**

import java.util.Scanner;

class DiffTypeCharsSymbols

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st=sc.nextLine();

char ch[]=st.toCharArray();

int uc=0,lc=0,spc=0,dc=0,sp=0;

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

{

if (ch[i]>=65&&ch[i]<=90)

{ uc++;

}

else if (ch[i]>=97&&ch[i]<=122)

{

lc++;

}

else if (ch[i]>=48&&ch[i]<=57)

dc++;

else

if(ch[i]==' ')

sp++;

else spc++;

}

System.out.println("no :of upper case letter "+uc);

System.out.println("no: of lower case letter" +lc);

System.out.println("no: of decimal number" +dc);

System.out.println("no: of spaces "+sp);

System.out.println("no: of special characters" +spc);

}

}

**OUTPUT:**

enter the string: PramoD123$@gmail.com

no :of upper case letter 2

no : of lower case letter12

no : of decimal number3

no : of spaces 0

no : of special characters3

**Write a program to convert NUMBER into WORDS?**

import java.util.\*;

public class Numtoword

{

static String one[]={"","one","two","three","four","five","six","seven","eight","nine","ten",

"eleven","tweleve","thirteen","fourteen","fifteeen","sixteeen","seventeen","eighteen","nineteen"};

static String two[]={"","","twenty","thirty","fourty","fifty","sixty","seventy","eigty","ninety"};

static void pw(int n, String st)

{

if(n<=19)

System.out.print(one[n]+" ");

else

System.out.print(two[n/10]+one[n%10]+" ");

if(n!=0)

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

}

public static void main(String[] args)

{

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

Scanner sc=new Scanner(System.in);

int num=sc.nextInt();

pw(num/10000000,"crores");

pw((num/100000)%100,"Lakhs");

pw((num/1000)%100,"Thousand");

pw((num/100)%10,"Hundered");

pw(num%100," ");

}

}

**OUTPUT:**

enter the number : 999999

nine Lakhs ninety nine Thousand nine Hundered and ninety nine

**Write a program to REVERSE the SENTENCE?**

import java.util.Scanner;

class Revsentence

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st=sc.nextLine();

char ch[]=st.toCharArray();

String rst=" ";

for (int i=ch.length-1;i>=0 ;i-- )

{

int k=i;

while (i>=0&&ch [i]!=' ')

{

i--;

}

int j=i+1;

while ( j<=k)

{

rst =rst +ch[j];

j++;

}

rst=rst+' ';

}

System.out.println("The reserve sentence is:"+rst);

}

}

**OUTPUT:**

enter the sentence: rama and laxmana

The reserve sentence is: laxmana and rama

**Write a program to REVERSE THE WORDS in a SENTENCE?**

import java.util.Scanner;

class Revwords

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st=sc.nextLine();

char ch[]=st.toCharArray();

String rst=" ";

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

{

int k=i;

while (i<ch.length &&ch [i]!=' ')

{

i++;

}

int j=i-1;

while ( k<=j)

{

rst=rst + ch[j];

j--;

}

rst=rst+' ';

}

System.out.println("The reserved words of sentence is:"+rst);

}

}

**OUTPUT:**

enter the sentence: **rama and laxmana**

The reserved words of sentence is: **amar dna anamxal**

**Write a program to display STRING INITCAP of Words?**

import java.util.Scanner;

class Stringinitcap

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st=sc.nextLine();

char ch[]=st.toCharArray();

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

{

if (i==0||(ch[i]!=' '&&ch[i-1]==' '))

{

if (ch[i]>=97&&ch[i]<=122)

{

ch[i]=(char)(ch[i]-32);

}

else if (ch[i]>=65&&ch[i]<=90)

{

ch[i]=(char)(ch[i]-32);

}

}

}

st=new String(ch);

System.out.println("enter the string in it cap : "+st);

}

}

**OUTPUT:**

enter the string: pramod reddy pavan chandu

enter the string in it cap : **P**ramod **R**eddy **P**avan **C**handu

**Write a program to convert UPPER CASE TO LOWER CASE & VICE VERSA?**

import java.util.Scanner;

class Stringuptolow

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

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

String st=sc.nextLine();

char ch[]=st.toCharArray();

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

{

if (ch[i]>=65&&ch[i]<=90)

{

ch[i]=(char)(ch[i]+32);

}

else if (ch[i]>=97&&ch[i]<=122)

{

ch[i]=(char)(ch[i]-32);

}

}

st=new String(ch);

System.out.println("converted String in Case : "+st);

}

}

**OUTPUT:**

enter the string : PraMoD ReddY GoPi RedDY

converted String in Case : pRAmOd rEDDy gOpI rEDdy

**Write a program to find a SUB-STRING without using INBUILT functions?**

import java.util.Scanner;

class Substring

{

public static void main(String[] args)

{

System.out.println("enter the main string");

Scanner sc=new Scanner(System.in);

String st1=sc.next();

char ch1[]=st1.toCharArray();

System.out.println("enter the sub string");

String st2=sc.next();

char ch2[]=st2.toCharArray();

int find=0;

for (int i=0;i<ch1.length ;i++ )

{

int k=i, j=0;

while (k<ch1.length && j<ch2.length && ch1[k]==ch2[j])

{

j++;

k++;

}

if(j==ch2.length)

{

find++;

System.out.println( find+" times "+st2+" present between "+i+" to "+k+" indexs");

}

}

if(find==0)

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

}

}

**OUTPUT:**

enter the main string : PramodReddy

enter the sub string : Reddy

1 times Reddy present between 6 to 11 indexs

**Write a program to convert Integer of String type to INTEGER type without using parse int?**

import java.util.Scanner;

public class StringToInt

{

public static void main (String [] args)

{

Scanner sc=new Scanner (System.in);

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

String s=sc.next ();

System.out.println (" After converting string to integer");

int d = check(s);

if (d==0)

System.out.println ("not valid string ");

else

System.out.println (d + “is in integer type");

}

public static int check (String s)

{

int i=0, number=0;

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

{

char ch [] =s.toCharArray ();

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

{

return 0;

}

}

while (i<s.length ())

{

number= number\*10;

number=number+ (s.charAt (i++)-'0');

}

return number;

}

}

**OUTPUT:**

enter the String

3306

After converting string to integer

3306 is in integer type

***SEARCHING & SORTING PROGRAMS***

**Write a program for LINEAR SEARCH?**

public class SearchLinear

{

public static int linearSearch(int[] arr, int x)

{

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

{

if(x==arr[i])

{

return i;

}

}

return -1;

}

public static void main(String[] args)

{

int[] ar ={3,46,76,4,89,7,27};

System.out.println(linearSearch(ar,4));

System.out.println(linearSearch(ar,78));

}

}

**OUTPUT:**

3

-1

**Write a program for BINARY SEARCH?**

public class SearchBinary

{

public static int binarySearch(int[] arr, int x)

{

int first=0;

int last=arr.length-1;

while(first<=l)

{

int middle=(first + last)/2;

if(x==arr[middle])

{

return middle;

}

else if(x>arr[middle])

{

first=middle+1;

}

else

{

last=middle-1;

}

}return -1;

}

public static void main(String[] args)

{

int[] i={10,49,67,90,40,86};

System.out.println(binarySearch(i,49));

}

}

**OUTPUT:**

1

**Write a program for BUBBLE SORT?**

class Bubbledown

{

public static void sortdown(int[]a)

{

int n=a.length;

for (int i=0;i<n-1 ;i++ )

{

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

{

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

{

int temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

}

}

public static void main(String[] args)

{

int []a={5,8,1,6,9,2};

sortdown(a);

for (int x: a )

{

System.out.println(x);

}

}

}

**OUTPUT:**

1

2

5

6

8

9

**PROGRAMS on ARRAYS**

**Write a program to INSERT the ELEMENTS in an Array?**

import java.util.Scanner;

public class InstSingArray

{

public static void main (String [ ] args)

{

Scanner sc= new Scanner (System.in);

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

int length= sc.nextInt ();

int arr [ ] =new int [length];

System.out.println ("enter the "+length+" elements");

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

{

arr[i] =sc.nextInt ();

}

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

{

System.out.println ("arr ["+i+"] ---->"+arr[i]);

}

}

}

**Output:** enter the size

5

Enter the 5 elements

2

3

5

8

64

arr [0] ---->2

arr [1] ---->3

arr [2] ---->5

arr [3] ---->8

arr [4] ---->64

**Write a Program to REVERSE THE ELEMENTS of an array?**

import java.util.Scanner;

public class InstSingArray

{

public static void main (String [ ] args)

{

Scanner sc= new Scanner (System.in);

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

int length= sc.nextInt ();

int arr [ ] =new int [length];

System.out.println ("enter the "+length+" elements");

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

{

arr[i] =sc.nextInt ();

}

System.out.println (“Before Reverse of an Array”);

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

{

System.out.println ("arr ["+i+"] ---->"+arr[i]);

}

for (int i = 0; i < arr.length/2; i++)

{

int t=arr[i];

arr[i] =arr [arr.length-1-i];

arr [arr.length-1-i) =t;

}

System.out.println (“After Reverse of an Array”);

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

{

System.out.println ("arr ["+i+"] ---->"+arr[i]);

}

}

}

**Output:**

Enter the size

5

Enter the 5 elements

1

5

6

8

9

Before Reverse of an Array

arr [0] ---->1

arr [1] ---->5

arr [2] ---->6

arr [3] ---->8

arr [4] ---->9

After Reverse of an Array

arr [0] --🡪9

arr [1] --🡪8

arr [2] --🡪6

arr [3] --🡪5

arr [4] --🡪1

**Write a program to INSERT A ELEMENT INTO EXISTING ARRAY in a specified position?**

**import** java.util.Scanner;

**class** Insertingelement

{

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

{

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

System.***out***.println ("enter the length");

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

**int** arr [] =**new** **int** [length];

System.***out***.println ("enter the "+length+" elements");

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

{

arr[i]=sc.nextInt();

}

System.***out***.println ("length of array before inserting"+"--->"+arr.length);

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

{

System.***out***.println (i+"------->"+arr[i]);

}

System.***out***.println ("enter the index of specified position or index");

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

System.***out***.println ("enter the element to replace to specified index");

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

arr=*insert* (arr ,in ,ele);

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

{

System.***out***.println (i+"------->"+arr[i]);

}

}

**static** **int** [] insert (**int** a[],**int** in, **int** ele)

{

i**f** (in>a.length||in<0)

{

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

**return** a;

}

**else**

{

**int** na [] = **new** **int** [a.length+1];

**for** (**int** i= 0 ; i<in ;i++ )

{

na[i] = a[i];

}

na [in] =ele;

**for** (**int** i= in; i<a.length; i++)

{

na [i+1] = a[i];

}

System.***out***.println ("length of array after inserting"+"--->"+na.length);

**return** na;

}

}

}

**Output:**

enter the length

5

enter the 5 elements

2

8

6

7

88

length of array before inserting--->5

0------->2

1------->8

2------->6

3------->7

4------->88

enter the index of specified position or index

3

enter the element to replace to specified index

62

length of array after inserting--->6

0------->2

1------->8

2------->6

3------->62

4------->7

5------->88

**Write a program to DELETE AN ELEMENT OF A SPECIFIED INDEX IN THE EXISTING ARRAY?**

import java.util.Scanner;

class DeletingArray

{

public static void main (String [] args)

{

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

System.*out*.println ("enter the length");

int length= sc.nextInt ();

int ar [] = new int [length];

System.*out*.println ("enter the "+length+" elements");

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

{

ar[i] = sc.nextInt ();

}

System.*out*.println ("length of array before deleting"+"--->"+ar.length);

*display* (ar);

System.*out*.println ("enter specified position for deleting that element");

int in=sc.nextInt ();

ar=*delete* (ar , in);

*display* (ar);

}

static void display (int a[])

{

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

System.*out*.println (i+"------->"+a[i]);

}

static int [] delete (int a[] , int in)

{

If (in>a.length||in<0)

{

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

return a;

}

else

{

int na [] = new int [a.length-1];

for (int i=0; i<in; i++)

{

na[i] = a[i];

}

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

{

na [i-1] = a[i];

}

System.*out*.println ("length of array after deleting"+"---->"+na.length);

return na;

}

}

}

**OUTPUT**:

enter the length

6

enter the 6 elements

5

5

9

8

6

2

length of array before deleting--->6

0------->5

1------->5

2------->9

3------->8

4------->6

5------->2

enter specified position for deleting that element

5

length of array after deleting---->5

0------->5

1------->5

2------->9

3------->8

4------->2

**Write a program to SEARCH AN ELEMENT IN THE EXISTING ARRAY?**

public class Search element

{

public static void main (String [] args)

{

int ar [] = {22, 11, 23, 11, 15, 19};

int inx=search (ar, 15);

display (ar);

if (inx>=0)

System.out.println ("your element found at index "+inx);

else

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

}

static void display (int a [])

{

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

System.out.println (i+"------->"+a[i]);

}

static int search (int a [], int ele)

{

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

{

If (ele==a[i])

return i;

}

return -1;

}

}

**OUTPUT:**

0------->22

1------->11

2------->23

3------->11

4------->15

5------->19

your element found at index 4

**Write a program to find BIGGEST AND SMALLEST ELEMENT in the given array?**

import java.util.Scanner;

public class BigeleArray

{

public static void main (String [] args)

{

Scanner sc= new Scanner (System.in);

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

int length= sc.nextInt ();

int arr [] =new int [length];

int bigger=0;

int smaller = 0;

System.out.println ("enter the "+length+ “elements");

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

{

arr[i] = sc.nextInt ();

}

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

{

System.out.println ("arr ["+i+"] ----> "+arr[i]);

}

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

{

int big=arr [0];

int small=arr [0];

if (big<arr[i])

{

big=arr[i];

}

if (small>arr[i])

{

small=arr[i];

}

smaller=small;

bigger=big;

}

System.out.println ("biggest element is ---->"+bigger);

System.out.println ("Smallest element is ---->"+smaller);

}

}

**OUTPUT:**

enter the length

5

enter the 5elements

1

8

99

66

75

arr [0] ---->1

arr [1] ---->8

arr [2] ---->99

arr [3] ---->66

arr [4] ---->75

biggest element is ---->75

Smallest element is ---->1

**Write a program to find FIRST BIGGEST AND SECOND BIGGEST ELEMENT in given array?**

class Fbiggest

{

public static void main (String [] args)

{

int ar[]={23,12,14,56,22,28,13};

int fbig=ar [0];

int sbig=ar [1];

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

{

if (fbig<ar[i])

{

sbig=fbig;

fbig=ar[i];

}

else if (sbig<ar[i])

{

sbig=ar[i];

}

}

System.out.println ("first biggest element is “+fbig);

System.out.println ("second biggest element is “+sbig);

}

}

**OUTPUT:**

First biggest element is 56

Second biggest element is 28

**Write a program to FIND THE SECOND OCCURRENCE ELEMENT in a given array?**

class Secondoccuranceelement

{

public static void main (String [] args)

{

int ar[]={22,11,23,11,15,19,11};

int inx=secondoccurance (ar, 11);

display (ar);

if (inx>=0)

System.out.println ("Second time occurred element found at the index "+inx);

else

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

}

static void display (int a [])

{

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

System.out.println ("arr ["+i+"]"+"------->"+a[i]);

}

static int secondoccurance (int a [], int ele)

{

int count=0;

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

{

If (ele==a[i])

count++;

if (count==2)

return i;

}

return -1;

}

}

**OUTPUT:**

arr [0] ------->22

arr [1] ------->11

arr [2] ------->23

arr [3] ------->11

arr [4] ------->15

arr [5] ------->19

arr [6] ------->11

Second time occurred element found at the index 3

**Write a program to FIND THE OCCURRENCE ELEMENT IN which position in a given array?**

class Occuranceelement

{

public static void main (String [] args)

{

int ar[]={22,11,23,11,15,19,11};

int inx=occurrence (ar, 11, 2);

display (ar);

if (inx>=0)

System.out.println ("your element found at index "+inx);

else

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

}

static void display (int a [])

{

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

System.out.println (i+"------->"+a[i]);

}

static int occurrence (int a [], int ele, int oc)

{

int count=0;

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

{

if (ele==a[i])

count++;

if (count==oc)

return i;

}

return -1;

}

}

**OUTPUT:**

0------->22

1------->11

2------->23

3------->11

4------->15

5------->19

6------->11

Your element found at index 3

**Write a program to FIND HOW MANY TIMES ELEMENT IS OCCURED in a given array?**

class Elementoccured

{

public static void main (String [] args)

{

int ar[]={22,11,23,11,15,19,11};

int in=occurred (ar, 11);

display (ar);

if (in>=0)

System.out.println ("your element occurred “+in);

else

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

}

static void display (int a [])

{

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

System.out.println (i+"------->"+a[i]);

}

static int occurred (int a [], int ele)

{

int count=0;

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

{

if (ele==a[i])

count++;

}

return count;

}

}

**OUTPUT:**

0------->22

1------->11

2------->23

3------->11

4------->15

5------->19

6------->11

Your element occurred 3

**Write a program to DISPLAY MISSING ELEMENT in a given sorted array?**

class Missingelement

{

public static void main (String [] args)

{

int ar [] = {8, 15, 21, 24, 30, 37};

System.out.println ("Missing elements in given array are :");

for (int i=0;i<ar.length-1 ;i++ )

{

for (int j=ar[i]+1;j<ar[i+1]; j++ )

{

System.out.println (j);

}

}

}

}

**OUTPUT:**

Missing elements in given array are:

9 ,10 ,11 ,12 ,13 ,14 ,16 ,17 ,18 ,19 ,20 ,22 ,23 ,25 ,26 ,27 ,28 ,29 ,31 ,32 ,33 ,34 ,35 ,36

**Write a program to FIND HIGHEST CONTIGUOUS SUM OF TWO ELEMENT in a given array?**

public class Sumoftwoelemnts

{

public static void main (String [] args)

{

int ar[]={21,12,15,32,16,17,22};

int inx=0;

int big=ar [0] +ar [1];

for (int i=1; i<ar.length-1; i++)

{

if (big<ar[i] + ar [i+1])

{

big=ar[i] +ar [i+1];

inx=i;

}

}

System.out.println (“sum of two element"+"----->"+big);

System.out.println (“the first element"+"--->"+ar [inx]);

System.out.println (" the second element"+"--->"+ar [inx+1]);

}

}

**OUTPUT:**

Sum of two element----->48

The first element--->32

The second element--->16

**Write a program to DISPLAY THE COMMON ELEMENTS between two arrays?**

public class Commonelement

{

public static void main (String [] args)

{

int ar1 [] = {12, 13, 23, 15, 11, 16};

int ar2 [] = {53, 26, 23, 15, 18, 13};

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

for (int i=0; i<ar1.length; i++)

{

for (int j=0; j<ar2.length;j++ )

{

if (ar1 [i] ==ar2 [j])

{

System.out.println (ar1 [i]);

break;

}

}

}

}

}

**OUTPUT:**

common elements are:

13

23

15

**Write a program to EXCHANGE OF FIRST PART ELEMENT TO SECOND PART Element between two arrays?**

public class Exchangeofelements

{

public static void main (String [] args)

{

int ar[]={21,12,15,32,16,17,22};

System.out.println ("BEFORE EXCHANGE OF ARRAY");

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

{

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

}

int n;

if (ar.length%2==0)

n=ar.length/2;

else

n= (ar.length/2) +1;

for (int i=0; i<ar.length/2; i++)

{

int t=ar[i];

ar[i] =ar [n+i];

ar [n+i]=t;

}

System.out.println ("AFTER EXCHANGE OF ARRAY");

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

{

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

}

}

}

**OUTPUT:**

BEFORE EXCHANGE OF ARRAY

21

12

15

32

16

17

22

AFTER EXCHANGE OF ARRAY

16

17

22

32

21

12

15

**Write program TO DISPLAY DISTINCT ELEMENTS from given two array?**

public class Disctinctelements

{

public static void main (String [] args)

{

int ar1 [] = {12, 13, 23, 15, 11, 16};

int ar2 [] = {53, 26, 23, 15, 18, 13};

System.out.println ("Distinct elements from given two arrays");

for (int i=0; i<ar1.length; i++)

{

int find=0;

for (int j=0; j<ar2.length; j++)

{

if (ar1 [i] ==ar2 [j])

{

find=1;

break;

}

}

if (find==0)

System.out.println (ar1 [i]);

}

for (int i=0; i<ar2.length; i++)

{int find=0;

for (int j=0; j<ar1.length; j++)

{

if (ar2 [i] ==ar1 [j])

{

find=1;

break;

}

}

if (find==0)

System.out.println (ar2 [i]);

}

}

}

**OUTPUT:**

Distinct elements from given two arrays

12

11

16

53

26

18

13

13

**Write a program to MERGE TWO ARRAYS?**

public class Merge

{

public static void main (String [] args)

{

int ar1 [] = {12, 13, 23, 15, 11, 16};

int ar2 [] = {53, 26, 23, 15, 18, 13};

int res [] =new int [ar1.length+ar2.length];

int j=0;

for (int i = 0; i < ar1.length; i++, j++)

{

res[j] =ar1 [i];

}

for (int i = 0; i < ar2.length; i++, j++)

{

res[j] =ar2 [i];

}

System.out.println ("MERGED ARRAY ");

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

{

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

}

}

}

**OUTPUT:**

MERGED ARRAY

12

13

23

15

11

16

53

26

23

15

18

13

**Write a program to COMBINE TWO ARRAYS IN ZIGZAG manner?**

public class Zigzag

{

public static void main (String [] args)

{

int ar1 [] = {12, 13, 23, 15, 11, 16};

int ar2[]={53,26,23,15,18,13,23,45};

int res [] =new int [ar1.length+ar2.length];

int i=0, j=0;

for (int k = 0; k < res.length; )

{

if (i<ar1.length)

{

res[k] =ar1 [i];

i++;

k++;

}

if (j<ar2.length)

{

res[k] =ar2 [j];

j++;

k++;

}

}

System.*out*.println ("ZIGZAG ARRAY IS");

for (int l = 0; l < res.length; l++)

{

System.*out*.println (res[l]);

}

}

}

**OUTPUT:**

ZIGZAG ARRAY IS

12

53

13

26

23

23

15

15

11

18

16

13

23

45

**Write a program to find the PALINDROME numbers in the given ARRAY?**

class Main3

{

static void display (int a [])

{

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

{

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

}

System.out.println ();

}

static int revdig (int n)

{

int rev=0;

while (n>0)

{

int r=n%10;

rev=rev\*10+r;

n=n/10;

}

return rev;

}

public static void main (String [] args)

{

int ar [] = {232, 12, 78, 898, 34543, 45};

display (ar);

int count=0;

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

{

if (ar [i] ==revdig (ar[i])) count++;

}

System.out.println ("---------------------");

System.out.println (" number of palindrome:"+count);

}

}

**OUTPUT:**

232, 12,78,898,34543,45,

---------------------

number of palindrome: 3

**Write a program to read elements into the MATRIX from SCANNER?**

import java.util.\*;

class Main2

{

static int [] [] readMat ()

{

Scanner sc= new Scanner (System.in);

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

int m=sc.nextInt ();

int n=sc.nextInt ();

int ar [][] =new int[m][n];

System.out.println ("enter "+m\*n+" Elements");

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

{

for (int j=0; j<ar[i].length; j++)

{

ar[i] [j] =sc.nextInt ();

}

}

return ar;

}

static void display (int a [] [])

{

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

{

for (int j=0; j<a[i].length; j++)

{

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

}

System.out.println ();

}

}

public static void main (String [] args)

{

int ar [] []=readMat();

System.out.println ("Entered Matrix :");

display (ar);

}

}

**OUTPUT:**

Enter the Order

2

2

enter 4 Elements

9

6

5

1

Entered Matrix:

9 6

5 1

**Write a program to read inputs from SCANNER and find the BIGGEST ELEMENT in EACH ROW and EACH COLUMN?**

import java .util.\*;

class Readmatrix

{

public static void main (String [] args)

{

Scanner sc=new Scanner (System.in);

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

int m=sc.nextInt ();

int n=sc.nextInt ();

int ar[][]=new int [m][n];

System.out.println ("enter" + m\*n + " elements");

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

{

for (int j=0;j<ar[i].length ;j++ )

{

ar[i][j]=sc.nextInt();

}

}

System.out.println (" entered matrix:");

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

{

for (int j=0; j<ar[i].length ; j++ )

{

System.out.print (ar[i][j]+"("+i+","+j+")");

}

System.out.println ();

}

System.out.println ();

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

{

int big=ar[i][0];

for (int j=i ; j<ar[i].length ;j++)

{

if(big<ar[i][j])

big = ar[i][j];

break;

}

System.out.println (i+1+"row biggest element "+big);

}

for (int i=0; i<ar[0].length ;i++ )

{

int big=ar[0][i];

for (int j=0;j<ar.length ;j++ )

{

if (big<ar[j][i])

big =ar[j][i];

}

System.out.println(i+1+"column biggest element "+big);

}

}

}

**OUTPUT:**

enter the order

2

2

enter4elements

5

6

8

9

entered matrix:

5(0,0)6(0,1)

8(1,0)9(1,1)

1row biggest element5

2row biggest element9

1column biggest element8

2column biggest element9

**Write a program to read inputs from SCANNER and find the SUM of ELEMENTS in EACH ROW and EACH COLUMN?**

import java.util.\*;

class Rowwiseandcolwisesum

{

static int [][] readMat()

{

Scanner sc=new Scanner(System.in);

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

int m=sc.nextInt();

int n=sc.nextInt();

int ar[][]=new int [m][n];

System.out.println("enter"+ m\*n+ "elements");

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

{

for (int j=0;j<ar[i].length ;j++ )

{

ar[i][j]=sc.nextInt();

}

}

return ar;

}

static void display(int a[][])

{

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

{

for (int j=0;j<a[i].length ;j++ )

{

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

}

System.out.println();

}

}

public static void main(String[] args)

{

int ar[][]=readMat();

System.out.println("entered matrix");

display(ar);

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

{

int rsum=0;

int csum=0;

for (int j=0;j<ar.length ;j++)

{

rsum=rsum + ar[i][j];

csum=csum + ar[j][i];

}

System.out.println(i+1+"row sum is :"+rsum);

System.out.println(i+1+"column sum is:"+csum);

}

}

}

**OUTPUT:**

enter the order

2

2

enter4elements

6

5

7

9

entered matrix

6(0,0)5(0,1)

7(1,0)9(1,1)

1row sum is :11

1column sum is:13

2row sum is :16

2column sum is: 14

**SPECIAL PROGRAMS**

**Write a program to find the given YEAR is LEAP-YEAR or not?**

import java.util.\*;

public class Leapyear

{

public static void main (String [] args)

{

Scanner sc=new Scanner (System.in);

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

int m=sc.nextInt ();

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

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

else

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

}

}

**OUTPUT:**

Enter the year

1990

not a leap year

Enter the year

2016

it is a leap year

**Write a program to find days between DATE to DATE?**

import java.util.Scanner;

class Date

{

final int m[]={31,28,31,30,31,30,31,31,30,31,30,31};

int dd, mm, yyyy;

Date (int dd, int mm, int yyyy)

{

this.dd=dd;

this.mm=mm;

this.yyyy=yyyy;

}

int getNumberOfLeapYear ()

{

if (mm>2)

return yyyy/4-yyyy/100+yyyy/400;

else

return (yyyy-1)/4-(yyyy-1)/100+ (yyyy-1)/400;

}

int getNumberOfDays ()

{

int dCount= yyyy\*365+getNumberOfLeapYear () +dd;

for (int i=0; i<mm-1; i++)

{

dCount+=m[i];

}

return dCount;

}

int difference (Date d1, Date d2)

{

int dy1=d1. getNumberOfDays ();

int dy2=d2. getNumberOfDays ();

if (dy1>dy2)

return dy1-dy2;

else

return dy2-dy1;

}

public String toString ()

{

return dd+":"+mm+":"+yyyy+" ";

}

static Date readDate ()

{

Scanner sc= new Scanner (System.in);

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

int dd=sc.nextInt ();

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

int mm=sc.nextInt ();

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

int yy=sc.nextInt ();

return new Date (dd, mm, yyyy);

}

public static void main (String [] args)

{

Date date1=readDate ();

Date date2=readDate ();

System.out.println ("Number of Days between"+date1+

"And"+date2+" is: "+date1.difference (date1, date2));

}

}

**OUTPUT:**

Enter dd: 31

Enter mm: 08

Enter yyyy: 2016

Enter dd: 5

Enter mm: 09

Enter yyyy: 2016

Number of Days between31:8:2016 And5:9:2016 is: 5