1. **Write a Program to add and subtract 2 numbers?**

Psvm(){ int i=10; int j=5; in res;

Res = i+j; sop (“Addition of 2 numbers are”+ res);

Res = i-j; sop (“Subtraction of 2 numbers are”+ res);

1. **Write a Program to divide and multiply two numbers?**

|  |  |
| --- | --- |
| **Multiply** | **Devide** |
| **int** a=20;  **int** b=10;  **int** c;  c=a\*b;  System.***out***.println(c); | **int** a=20;  **int** b=10;  **int** c;  c=a/b;  System.***out***.println(c); |

1. **How will you display the character count in a string” Steve Jobs” by ignoring space in between?**

String str= “steve Jobs”;

String[] words=str.split(“ ”);

Sop(words[0].length()+words[1].length());

1. **WAP to swap two numbers using temp variable?**

int a=10;

int b=20;

int c;

c=a; //c=10

a=b;//a=20

b=c;//b=10

1. **WAP to swap two numbers w/o using temp variable**

Int x=10;

Int y=20;

X=x+y // x=30

Y=x-y // y=10

X=x-y// x=20

1. **WAP to swap two numbers using bitwise operator?**

Int x=10;

Int y=8;

X=x^y;// x=2

Y=x^y;// y=10

X=x^y; //x=8

1. **Write a method to find the total amount to be paid principle, rate of interest amount, time all user input (hint PTR/100.)**

**hint-ptr/100**

**A)import java.util.Scanner;**

**public class TotalAmount {**

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

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

**System.out.println("enter the principle amount:");**

**double pamt=input.nextDouble();**

**System.out.println("enter the interest:");**

**double intrate=input.nextDouble();**

**System.out.println("enter the duration:");**

**int months=input.nextInt();**

**double intamnt=totalAmount(pamt, intrate, months);**

**double total=intamnt+pamt;**

**System.out.println("total payable is :"+total);**

**}**

**static double totalAmount(double principle,double interest,int time)**

**{**

**double totalAmnt=(principle\*interest\*time)/100;**

**return totalAmnt;}}**

1. **WAP to demonstrate pre increment and post increment operators?**

|  |  |
| --- | --- |
| Class Increment Demo3{Psvm()  {  int a=20;  a=a++ + ++a  sop(a); //42}} | Class Increment Demo4{Psvm()  {  int a,b;  a=10;  b=--a;  sop(b); //a  } |

1. **WAP to find highest of two numbers in two ways**

|  |  |  |  |
| --- | --- | --- | --- |
| Int x=10;  Int y=8;  If(x>y){sop(x)else{sop(y)} | Int a=(x>y)?x:y;  Sop(a) | Math.Max(x,y); | Sopln(x>y?x+”is greater than”+ y:y+” is greater than” + x); |

1. **WAP to print**

10

20

30

40 in a single print statement

System.out.println(10+"\n"+20+"\n"+30);

1. **Write a Program to print “hellow world” ?**

System.out.println("\"Hellow World\"");

1. **Write a Program to print your name?**

System.out.println("My name is Mohan");

1. **Write a program to print**

**Ramesh**

**Suresh**

**Rakesh**

**(Blank line should be provided after each name)**

System.out.print("Ramesh"+"\n"+"\n"+"Akash"+"\n"+"\n"+"Suresh");

1. **How do you remove all the values from an array (Biscuit Question)**

Ans:You cannot remove the vales but you can assign a new value which can also be a default value of the type of the array.If it is an int array you can set default value to 0 double array default value 0.0 than non premitive array default value null.

Example

public class Arrayreset {

public static void main(String[] args) {

int arr[]={20,56,12,78,24};

{

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

arr[i]=0;

}

for (int i:arr)

System.out.println(i);

}

1. **How do you remove third element of an array?**

Ans: We will reintiloze values to default value.

Int arr[2]=0;

Double arr[2]=0.0;

String arr[2]=null;

Orange arr[2]=null;

1. **Print the even elements of an array?**

public class printevenindxelmtinarray {

public static void main(String[] args) {

// TODO Auto-generated method stub

int arr[]= {10,20,30,40,50,60};

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

{

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

}

for(int i=1;i<arr.length;i+=2)

{ System.out.println(arr[i]);

} }}

1. **For Loop for Matrix printing**

**public** **class** StarMatrix {

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

/\*for(int i=1;i<=3;i++){

for(int j=1;j<=3;j++)

{

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

}

System.out.println();

}\*/

/\*int m=1;

int n=3;

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

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

{

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

}

}\*/

/\*To Print

1

22

333\*/

/\*for(int i=1;i<=3;i++){

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

{

System.out.print(i);

}

System.out.println();\*/

/\*To Print

123

456

789\*/

**int** count=1;

**for**(**int** i=1;i<=3;i++){

**for**(**int** j=1;j<=3;j++)

{

System.***out***.print(count++);

}

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

1. **Print the string char by Char:-Known program**

**public** **class** StringCharbyChar {

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

String str="abcd";

**int** length=str.length();

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

System.***out***.println(str.charAt(i));}}}

1. **To convert String to char array:-Known program**

**public** **class** StringtoCharArray {

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

String str="abcf";

**char** ch[]=str.toCharArray();

**for**(**char** d:ch){

System.***out***.println(d);}}}

1. **To find the sum of numbers in a given string**

**public** **class** SumofDigits {

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

String str1="page 14 of 99";

**char**[] a =str1.toCharArray();

**int** sum=0;

**for**(**char** b:a)

{

**if**(Character.*isDigit*(b))

{

**int** v=Integer.*parseInt*(""+b);

//int v=Character.getNumericValue(b);

sum=sum+v;

}

}

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

1. **WAP to find sum of natural Numbers**

**public** **class** SumofNaturanNumbers {

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

// **TODO** Auto-generated method stub

**int** sum=0;

**int** n=3;

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

{

sum=sum+i;

}

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

1. **Sum of numbers using recursive function**

**public** **class** SumofnousingRec {

**public** **static** **int** test(**int** i){

**int** sum=1;

**if**(i >=1)

{

sum=sum+*test*(i-1);

}

**return** sum;

}

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

{

System.***out***.println(*test*(10));

}

}}

1. **To count the no of digits in a given string Known program**

**public** **class** Tocountnoofdigits {

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

//To Count No of digits

**int** count=0;

String str3="Page 14 of 56";

**char**[]f=str3.toCharArray();

**for**(**char** h:f)

{

**if**(Character.*isDigit*(h))

{

count++;

}

}

System.***out***.println(count);}}

1. **To find the specified string or number in a given string:-Know program**

**public** **class** Tofindnum\_given no and string in respective array {

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

//To find specified num

/\*int n=9;

String msg="Not Found";

int a[]={1,2,3,4,5};

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

{

if(a[i]==n)

{

msg="found";

break;

}

}

System.out.println(msg);\*/

String s2="Cat";

String[] s={"cat","boat","sweet","rat"};

String msg="Not found";

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

{

**if**(s[i].equalsIgnoreCase(s2))

{

msg="found";

**break**;

}

}

System.***out***.println(msg); }}

**public** **class** To print \_duplicate String or num {

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

//To find specified num

/\*int n=1;

String msg="Not Found";

int a[]={1,2,3,4,5,1};

int count=0;

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

{

if(a[i]==n)

{

msg="found";

count++;

}

}

System.out.println(msg);

if(count>1)

{

System.out.println("Number is Duplicate");

}

else

{

System.out.println("Number is not Duplicate");

}

\*/

**int** count=0;

String s2="Cat";

String[] s={"cat","boat","sweet","rat","cat"};

String msg="Not found";

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

{

**if**(s[i].equalsIgnoreCase(s2))

{

msg="found";

count++;

}

}

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

**if**(count>1)

{

System.***out***.println("String is Duplicate");

}

**else**

{

System.***out***.println("String is not Duplicate");

}}}

1. **To print 10 to 1**

**public** **class** Toprint10to1 {

**public** **static** **void** test(**int** i){

**if**(i<=0)

{

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

}

**else**

{

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

*test*(i-1);

}

}

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

// **TODO** Auto-generated method stub

*test*(10);}}

1. **To rotate full array.**

**public** **class** RotataArray {

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

**int** arr[]={10,20,30,40,50,60,70,80,90,100};

**int** start =0;

**int** end = arr.length-1;

**int** temp=0;

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

{

temp=arr[start];

arr[start]=arr[end];

arr[end]=temp; start++;

end--; }

**for** (**int** i:arr) System.***out***.print(i+" ");

}

}

1. **WAP to rotate second half of an array.**

public class Rotate2ndhalf {

public static void main(String[] args) {

// TODO Auto-generated method stub

int arr[]={10,20,30,40,50,60,70,80,90,100};

int start =arr.length/2;

int end = arr.length-1;

int temp=0;

for (int i=arr.length/2;i<arr.length/2+(arr.length/4);i++)

{

temp=arr[start]; arr[start]=arr[end]; arr[end]=temp; start++; end--; }

for (int i:arr) System.out.println(i);}}

1. **Rotate first half of an array**

public class RotataFirstHalf {

public static void main(String[] args) {

int arr[]={10,20,30,40,50,60,70,80,90,100};

int start =0;

int end = arr.length/2-1;

int temp=0;

for (int i=0;i<arr.length/2-arr.length/4;i++)

{

temp=arr[start];

arr[start]=arr[end];

arr[end]=temp; start++;

end--; }

for (int i:arr) System.out.print(i+" ");}}

1. **print the values of an array present at 4th index to 7th index values in an array.**

**start with ndex 4 and I<=7 condition.**

**public** **class** ToPrintfrom4thto7thIndex {

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

**int** arr[]={10,20,30,40,50,60,70,80,90,100};

**for** (**int** i=4;i<=7;i++)

{

System.***out***.println(arr[i]);

}}

1. **WAP to find Length of String without inbuilt**

**public** **class** LengthofStringwithtinbuilt {

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

// **TODO** Auto-generated method stub

**int** i=0;

String s="Helloree";

**while**(**true**)

{

**try**

{

**char** a=s.charAt(i);

i++;

}

**catch**(Exception e)

{

**break**;

}

}

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

1. **To find the no of occurrence of mentioned character. Know program**

**Non case sensitive**

**public** **class** Occuranceofcharctr {

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

String str1="This is Automation";

**int** count=0;

**char** c='t';

**char**[]a=str1.toCharArray();

**for**(**char** b:a)

{

**if**(b==c)

{

count++;

}

}

System.***out***.println(count);}}

//Case Sensitive

**public** **class** Occurancecasefree {

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

// **TODO** Auto-generated method stub

//NOT CASE SENSITIVE

String s="This is Automation class";

**char** c='s';

**int** count=0;

**char** c2=Character.*toLowerCase*(c);

**char**[]aa=s.toLowerCase().toCharArray();

**for**(**char** b:aa)

{

**if**(b==c2)

{

count++;

}

}

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

**if** (count>1)

{

System.***out***.println("Character is Duplicate");

}

**else**

{

System.***out***.println("Charcater is not duplicate");

}}}

1. **How do you find maximum and minimum value of type?**

Ans: By using wrapper class.

**public** **class** MaximumandminValueofType {

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

// **TODO** Auto-generated method stub

System.***out***.println(Integer.***MAX\_VALUE***);

System.***out***.println(Integer.***MIN\_VALUE***);}}

1. **How to generate random number from 5 to 10 WAP to print /generate 10 random numbers**

Ans: Math.randome(); (one of the OCJP Question)

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

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

System.***out***.println((**int**)10\*Math.*random*());//here o/p can have duplicates also}

1. **WAP to print non repeated random numbers**

Hint You use set, because it doesnot allow duplicate numbers should be keep changes. But the numbers are printed should not print. One more hint Inbuilt function (Math.random)or created, call that method or put it in a for loop.

|  |  |
| --- | --- |
| **public** **class** TenrandomNumber2Unique {  **public** **static** **void** main(String[] args) {  Set<Integer> set= **new** HashSet<Integer>();  **while**(set.size()!=10){  **int** val=(**int**)(10\*Math.*random*());  **if**(!set.contains(val))  {System.***out***.println(val);  set.add(val);}}}} | **public** **static** **void** main(String[] args) {  TreeSet<Integer> set= **new** TreeSet<Integer>();  **while**(set.size()!=10){  **int** val=(**int**)(10\*Math.*random*());  **if**(!set.contains(val))  {  System.***out***.println(val);  set.add(val);  }  }  Iterator itr= set.iterator();  **while**(itr.hasNext())  {  System.***out***.println(itr.next());  }  }} |

1. **WAP to find square of a number**

**public** **class** Squareofno {

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

**int** no=4;

**int** square= *add*(no);

System.***out***.println(square);}

**public** **static** **int** add(**int** n){**return** n\*n;}

}

1. **WAP to print non repeated random numbers from 65 to 74**

**public** **class** TenrandomNumber265\_74 {

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

Set<Integer> set= **new** HashSet<Integer>();

**while**(set.size()!=10){

**int** val=(**int**)(10\*Math.*random*())+65;

**if**(!set.contains(val))

{System.***out***.println(val);

set.add(val);}}}}

1. **WAP to generate a 100 random numbers b/w 1 to 100.**

**Ans: Not printing from 1 to 100 needs to check**

**WAP to print Armstrong Number**

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

**int** n, sum=0, temp, r;

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

System.***out***.println("Enter a number to check if it is an armstrong number");

n=in.nextInt();

temp=n;

**while**(temp!=0)

{ r=temp%10; sum=sum+r\*r\*r;temp=temp/10;}

**if** (n==sum) System.***out***.println("Entered no is armstrong number");

**else** System.***out***.println("Entered number is not armstrong number");}}

or

class ArmstrongExample{

public static void main(String[] args) {

int c=0,a,temp;

int n=153;//It is the number to check armstrong

temp=n;

while(n>0)

{

a=n%10;

n=n/10;

c=c+(a\*a\*a);

}

if(temp==c)

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

else

System.out.println("Not armstrong number");

}

}

1. **How do you convert Integer object to Long object (Biscuit)**

Long l1= new long(new Integer(100),longValue());//2

Long ll1=new long(new Integer(100);//2

S.o.pln(11);}

1. **Extract the number from the string?**

**public** **class** ExtractString {

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

String msg="you are about to delete 300 tasks please confirm";

System.***out***.println(msg.substring(msg.indexOf("delete")+7,msg.indexOf("tasks")-1));}}

1. **Compare 2 Array Know Program**

**public** **class** Compare2Array {

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

**int**[] a={1,2,3};

**int**[] b={1,2,3};

String msg="same";

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

{

**if**(a[i]!=b[i])

{

msg="Not Same";

**break**;

}}

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

}

}

1. **Count the spaces in a given string. Know program**

**public** **class** CountSpaces {

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

String s="This is java Class and here we have got many friends";

**int** c=0;

**int** count=0;

System.***out***.println("1st Way using s.charAt");

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

{

**char** ch=s.charAt(i);

**if**(ch==' '){

c++;

}

}

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

System.***out***.println("2nd Way converting to toCharArray");

**char**[] chr=s.toCharArray();

**for**(**char** ch:chr)

{

**if**(ch==' ')

{

count++;

}

}

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

System.***out***.println("3rd Way by split method and storing it to string array and printing");

String[]v=s.split(" ");

System.***out***.println(v.length-1);

}}

1. **Count the words in a given sentence**

**public** **class** CountWords {

**static** **int** *count*=0;

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

// **TODO** Auto-generated method stub

// System.out.println(" 1st Way By Converting to String array and counting length");

String s="This is Automation project Class";

String []s2=s.split(" ");

System.***out***.println("No of words present in a sentence are "+s2.length);

//System.out.println(" 2nd convert to char array and count space and add 1 to it");

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

{

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

*count*++;

}

System.***out***.println(*count*+1);}}

1. **Extract the number from the given word or sentence?**

**Ans: public** **class** Extractnumfromsentence {

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

String str="A6B3WW8ZC6";

String str1="";

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

{System.***out***.println(str.charAt(i));}

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

**char** ch=str.charAt(i);

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

str1=str1+ch;}

System.***out***.println(str1);}}

1. **WAP to separate numbers and characters from a given string.**

**public** **class** Sepnoncharfromstring {

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

String str="I got 456 out of 600 in 7th Standard in 2008";

String str1="";

String str2="";

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

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

**char** ch=str.charAt(i);

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

str1=str1+ch;

**else** **if**

(Character.*isAlphabetic*(ch))

str2=str2+ch;}

System.***out***.println(str1);

System.***out***.println(str2);}}

1. **Write a Program to find 2 a in your name.**

**public** **class** Tofind2Ainyourname {

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

String str2 = "MOHANA";

**char** ch1='A';

**int** index=0;

**int** cntr=0;

**while**((index=str2.indexOf(ch1,index))!=-1)

{ index ++; cntr ++;}

**if**(cntr>=2)

System.***out***.println(cntr + " "+ "A's are present");

**else**

System.***out***.println(cntr + " "+ "A is present");}}

1. **How do you convert convert an array to a string:Done**

Arrays.toString

1. **How do you convert string to array?:Done**

Ex: String s1=”Hello”;

Chararr[]=s1.tocharArray

1. **How can you execute java code without executing main method?:Done**

**public** **class** without\_mainmethd {

**static**

{System.***out***.println("I love Gopi Medicals");

System.*exit*(0);

}

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

{

System.***out***.println("I Love Java");

}

}

1. **How launch notepad /firefox driver?:Done**

**import** java.io.IOException;

**public** **class** Notepadtest {

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

// **TODO** Auto-generated method stub

Runtime run= Runtime.*getRuntime*();

**try**{

run.exec("notepad");

//rs.exec("C:\Program Files (x86)\Mozilla Firefox\firefox.exe");

}

**catch**(IOException e){

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

1. **Fibonacci Series Know Program**

**public** **class** Fibonacci {

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

**int** f=0;

**int** s=1;

**int** n=0;

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

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

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

{ n=f+s;

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

f=s;

s=n;}}}

1. **WAP to find ADAM number?**

**12\*12=144**

**21\*21=441(reverse it and compare if it is true its adams number.**

**public** **class** Adamsnum {

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

**int** num=1;

**while**(num<=100)//for range

{

**int** temp=0,rnum=0,rem=0;

temp=num;

**while**(temp!=0)

{

rem=temp%10;

rnum=rem+rnum\*10;

temp=temp/10;

}

//System.out.println(num);

**if**(num!=rnum){

**int** srnum=rnum\*rnum;

//System.out.println(srnum);

**int** rnum1=0;

temp=srnum;

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

rem=temp%10;

rnum1=rem+rnum1\*10;

temp=temp/10;

}

**if**((num\*num)==rnum1)

System.***out***.println(num+" "+rnum);

/\*else

{System.out.println("not a");}\*/

}

num++;}}}

Rem=2;

Rnum=2;

Temp=12/10

12\*12=144

21\*21=441

1. **WAP to find the number of a character in a given number or total no’s in a given number?**

**Ans: int i=123;**

**1st way 🡪 convert it to string and say string.length**

1. **How do you convert char to string?**

**Ans:Character.toString**

1. **How do you convert String to Char?**

**Ans: refvar.CharAt;**

1. **How do you convert int to string?**

**Ans:Integer.toString()**

1. **How do you convert String to int?**

**Integer.parsInt**

1. **How do you convert list to a SET?**

**Hint: Pass list object by creating it.**

1. **How do you convert SET to List**

**Hint: Same Opposite**

1. **Array List to Linked List?**

**Hint Samething**

1. **How to convert String to Array?**

**Hint: toCharArray()**

1. **How to convert Array to String**

**Ans: Arrays.asList**

1. **How to convert Array to ArrayList**

**Ans: Arrays.asList**

1. **Array List to Array🡪**

**toArray (returns object array)**

1. **Wap to concat 2 Arrays?**

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

**int** arr1[]={1,2,3,4};

**int** arr2[]={5,6,7,8};

**int** arr3[]=**new** **int**[arr1.length+arr2.length];

System.*arraycopy*(arr1, 0, arr3, 0, 4);

System.*arraycopy*(arr2, 0, arr3, arr3.length/2, 4);

System.***out***.println(Arrays.*toString*(arr3));

1. **How to reverse the list in collection?**

**Ans: Collections.reverse(collection reference variable)**

List l=**new** ArrayList();

l.add("10");

l.add("30");

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

Collections.*reverse*(l);

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

1. **How to convert array of string into the list ?**

String a[]={"no","welcome","you"};

List<String> s = Arrays.*asList*(a);

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

1. **Example for Stack Over flow**

**public** **class** A {

A()

{

A a1=**new** A();//Here Constructor recursion happens and we get stackoverflow error.

}

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

A a2=**new** A();

}}

1. **Write a program to print square of a number? Write a program to print square of number without using arithmetic operator.**

|  |  |
| --- | --- |
| **Square of a number** | **Without using arithmetic operator** |
| **int** no=4;    **int** square = no\*no;  System.***out***.println(square); | **int** no=4;  **int** square= *add*(no);  System.***out***.println(square);}  **public** **static** **int** add(**int** n){**return** n\*n;} |
| **public class squarenum**  **{**  **public static void main(String[] args)**  **{**  **int num=10;**  **int sqnum=num\*num;**  **System.out.println("The square number of "+num+" is"+sqnum);**  **square(5);// By using method**  **}**  **static int square(int n)**  **{**  **return n\*n;**  **}**  **}** |  |

1. **Ew**

|  |  |
| --- | --- |
| **Using Built-in Function** | **Without Using Built in Function** |
| //1st way  String str="Hello";  StringBuffer sb1=**new** StringBuffer(str);  sb1.reverse();  str=sb1.toString();  System.***out***.println(str); | //Without Using In Built Function  //1st way  String str3="Fellow";  String str4="";  **for**(**int** i=str3.length()-1;i>=0;i--){  str4=str4+str3.charAt(i);}  System.***out***.println(str4);  }} |
| //2nd Way  String str="Hello";  String str2=**new** StringBuffer(str).reverse().toString();  System.***out***.println(str2); | String str5="Super";  String str6="";  **char** [] chrs=str5.toCharArray();  **for**(**int** i=chrs.length-1;i>=0;i--)  {  str6=str6+chrs[i];  }  System.***out***.println(str6);}} |
| //without using built in functions  public static void main(String[] args) {  String s="Harsha",s1="";  int len=s.length();  for(int i=len-1;i>=0;i--)  {  s1=s1+s.charAt(i);  System.out.print(s1);  }  // By using toCharArray  char[] c1=s.toCharArray();  for(char c2:c1)  s1=s1+c2;  System.out.println(s1);  //or by using builtin functions  String str = new StringBuffer("Harsha").reverse().toString();  System.out.println(str);  }  } |  |

1. **Write a program to reverse a number.**

|  |  |
| --- | --- |
| **Using In Built Function** | **Without Built in Function** |
| **int** i =1234;  //simple way 1  String s1= Integer.*toString*(i);  s1=**new** StringBuffer(s1).reverse().toString();  i=Integer.*parseInt*(s1); | **int** i = 1235;  System.***out***.println(i);  System.***out***.println(*reverse*(i));  }  **static** **int** reverse(**int** i){  **int** reverse=0;  **while**(i>0)  {  **int** remainder=i%10;  reverse = remainder+reverse\*10;  i=i/10;  }  **return** reverse;  }} |
| //simple way 2  **int** i =1234;  i= Integer.*parseInt*(**new** StringBuffer(Integer.*toString*(i)).reverse().toString());  System.***out***.println(i);}} | **public class revnum {**  **public static void main(String[] args) {**  **int num = 123;**  **int i=Integer.parseInt(new StringBuffer(Integer.toString(num)).reverse().toString());**  **System.out.println("The Original number is"+num);**  **System.out.println("Reversed Number is"+i);**  **}}** |
| public class Revnum {  static int reverse(int num)  {  int rmndr=0,rev=0;  while(!(num==0))  { rmndr=num%10;  num=num/10;  rev=rmndr+rev\*10; }  return rev;  }  public static void main(String[] args) {  // By using Method  int num=1234;  System.out.println(num);  System.out.println(reverse(num));    //or by using builtin functions  int num=123;  String s=Integer.toString(num);  StringBuffer str=new StringBuffer(s).reverse();  s=str.toString();  num=Integer.parseInt(s);  System.out.println(s);  //  int n=1234;  n= Integer.parseInt(Integer.toString(n)).reverse.toString());  System.out.println(n);}} |  |

1. **Write a Program to find second highest of a given number**

**public** **class** SecondHighest {

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

**int**[]a={1,2,3,100,4,5,87};

**int** big=0;

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

{

**if**(big<a[i])

big=a[i];

}

System.***out***.println("First Big Number is "+big);

**int** sbig=0;

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

{

**if**(a[i]<big&&a[i]>sbig)

sbig=a[i];

}

System.***out***.println("Second Big Number is " +sbig);}}

1. **Write a program to sort an array**

**int** a[]={3,8,4,5,7};

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

{

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

{

**if**(a[i]<a[j])

{

**int** temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

}

System.***out***.println(Arrays.*toString*(a));

1. **Write a program to check if a word is palindrome or not at least in 2 ways.**

//1st Way

System.***out***.println("1st Way using string Buffer");

String s="MADAM";

//String s2=new StringBuffer(s).reverse().toString();

**if**(s.equalsIgnoreCase(**new** StringBuffer(s).reverse().toString()))

{

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

}

**else**

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

//2nd Way

/\*System.out.println("2nd Way by using for loop");

String s3="";

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

{

s3=s3+s.charAt(i);

}

if(s3.equalsIgnoreCase(s))

{

System.out.println("Palindrome");

}

else

System.out.println("Not Palindrome");\*/

}

}

1. **Write a java program to sort an array elements using selection sort algorithm(method).**

**Selection Sort in Java**

**We can create a java program to sort array elements using selection sort. In selection sort algorithm, we search for the lowest element and arrange it to the proper location. We swap the current element with the next lowest number.**

**public class SelectionSortExample {**

**public static void selectionSort(int[] arr){**

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

**{ int index = i;**

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

**if (arr[j] < arr[index]){**

**index = j;//searching for lowest index } }**

**int smallerNumber = arr[index];**

**arr[index] = arr[i];**

**arr[i] = smallerNumber; }}**

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

**int[] arr1 = {9,14,3,2,43,11,58,22};**

**System.out.println("Before Selection Sort");**

**for(int i:arr1){**

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

**}**

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

**selectionSort(arr1);//sorting array using selection sort**

**System.out.println("After Selection Sort");**

**for(int i:arr1){**

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

1. **Write a java program to sort an array elements using insertion sort algorithm.**

**public** **class** Insertion\_Sort {

**public** **static** **void** insertionSort(**int** array[]) {

**int** n = array.length;

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

**int** key = array[j];

**int** i = j-1;

**while** ( (i > -1) && ( array [i] > key ) ) {

array [i+1] = array [i];

i--; }

array[i+1] = key;

}}

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

**int**[] arr1 = {9,14,3,2,43,11,58,22};

System.***out***.println("Before Insertion Sort");

**for**(**int** i:arr1){

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

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

*insertionSort*(arr1);//sorting array using insertion sort

System.***out***.println("After Insertion Sort");

**for**(**int** i:arr1){

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

1. **Write a program to check if a number is prime**

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

**if**(n<=1){**return** **false**;}

**else**{**boolean** flag=**true**;**for**(**int** i=2;i<n;i++)

{**if**(n%i==0){flag=**false**;**break**;}}

**return** flag;

}}

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

//Other Way

/\*int num=100;

boolean flag=true;

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

{

if(num%i==0)

flag=false;

break;

}

if(flag)

System.out.println("No is Prime");

else

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

}

\*/

//Simplified Way

/\* int n=1;

String msg="Prime";

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

{

if(n%i==0)

msg="Not Prime";

}

System.out.println(msg);

}\*/

//To Restrict Invalid Input

/\*int n=4;

if(n<=0)

{

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

}

else if(n==1)

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

else

{

String msg="Prime";

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

{

if(n%i==0)

msg="Not Prime";

}

System.out.println(msg);

}}}\*/

//To Print the range of Prime Number.

//To print the required number of prime numbers;

**int** req=10;

**int** count=0;

**int** i=1;

**while**(count<req)

{

**if**(*isPrime*(i))

{

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

count++;

}

i++;}}}

1. **Write a program to print prime number from 1 to 1000**

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

**if**(n<=1){**return** **false**;}

**else**{**boolean** flag=**true**;**for**(**int** i=2;i<n;i++)

{**if**(n%i==0){flag=**false**;**break**;}}

**return** flag;

}}

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

{

if(isPrime(i))

System.out.println(i);

}

1. **Write a program to print factorial series and also factorial of a given number:-**

**int** n=4;

**int** fact=1;

//1st Way to print like 1\*2\*3

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

{

fact=fact\*i;

}

System.out.println(fact);\*/

//1st Way to print like 3\*2\*1

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

{

fact=fact\*i;

}

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

1. **Write a program to print factorial using recursion.**

**public** **static** **int** test(**int** i)

{

**int** fact=i;

**if**(i<=0)

**return** 1;

**else**

{

fact=fact\**test*(i-1);

**return** fact;

}

}

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

System.***out***.println(*test*(3));

}

1. **Write a program to print 1 to 1000 without loop.**

**public** **static** **void** test(**int** i){

**if**(i<=0)

{System.***out***.println("End");}

**else**

**{**

*test*(i-1);

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

}

}

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

// **TODO** Auto-generated method stub

*test*(1000);

1. **Write a program to transpose a matrix.**

//2 Dim Array Printing

/\* int[][]a={{1,2,3},{4,5,6},{7,8,9}};

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();}

\*/ //Transpose of Matrix

/\*int[][]a={{1,2,3},{4,5,6},{7,8,9}};

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();

}

\*/

//The Above code works only if no of rows and columns are same.

**int**[][]a={{1,2,3},{4,5,6},{7,8,9},{8,1,3},{6,7,9}};

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

{

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

{

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

}

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

1. **Write a program to print Pascal triangle**

**for**(**int** i=0;i<5;i++)

{**for**(**int** s=3;s>=i;s--)

{System.***out***.print(" ");}

**int** n=1;

**for**(**int** j=0;j<=i;j++){System.***out***.print(n+" ");

n=n\*(i-j)/(j+1);

}

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

1. **Write a program to print Floyds triangle**

|  |  |
| --- | --- |
| **public** **static** **void** main(String[] args) {  **int** rv=1,cv=1,c=5;  **for**(**int** i=1;i<c;i++)  {**for**(**int** k=1;k<=c-i;k++)  {System.***out***.print(" ");}  **for**(**int** j=1;j<=i;j++)  { System.***out***.print(cv+ " ");  cv=cv!=0?0:1;}  System.***out***.println();  rv=rv!=0?0:1;  cv=rv;  }}} | **83.Wap to print floyd's triangle**  **public class Floyds {**  **public** **static** **void** main(String[] args) {  **for** (**int** i = 1; i <= 8; i++) {  **for** (**int** k = 8 - i; k >= 1; k--) {  System.***out***.print(" ");  }  **for** (**int** j = 0; j < i; j++) {  System.***out***.print((i + j) % 2 + " ");  }  System.***out***.println();  }  }  } |

**Write a program to print down flipped triangle.**

**public** **class** FlippedTraingle {

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

// **TODO** Auto-generated method stub

**int** c=1,s=1;

**for**(**int** i=0;i<=4;i++)

{

**for**(**int** k=0;k<=4-i;k++)

{

System.***out***.print(" ");//will just print 5 space when i=0;

s=c+i-1;

}

**for**(**int** j=0;j<i;j++)//when i=0 it does not get enter into loop at all

{

System.***out***.print(s);

s--;c++;

}

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

1. **Write a program to convert binary to decimal and dec to bin**

**public class Dec\_to\_bin {**

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

**int num=15;**

**String s="";**

**int rmndr;**

**while(!(num==0))**

**{ rmndr=num%2;**

**num=num/2;**

**s=rmndr+s;**

**}**

**System.out.print(s);**

**// or by using Inbuilt function**

**int num = 10;**

**System.out.println(Integer.toBinaryString(num));}}**

**//1st Way**

|  |  |
| --- | --- |
| **public** **class** BintoDec {  **public** **static** **void** main(String[] args) {  // **TODO** Auto-generated method stub  **int** n=10; System.***out***.println(Integer.*toBinaryString*(n));  String bool="1010";  System.***out***.println(Integer.*parseInt*(bool,2));}} | public class bin\_to\_dec {  public static void main(String[] args) {  int num = 1010;  System.out.println(Integer.parseInt(Integer.toString(num), 2));}} |

1. **wap to take input from user? If it is integer then print else print it is not**

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

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

String s1=sc.nextLine();

sc.close();

**char** ch;

**for** (**int** i=0;i<s1.length();i++)

{

ch=s1.charAt(i);

**if** (ch>='0'&& ch<='9')

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

}}}

1. **wap to reverse an array**

//To print the array in Reverse

/\*int[]a={10,20,30,44,50};

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

{

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

} \*/

//To reverse an Array

//1st Way

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

**int** inc=0;

**int** dec=a.length-1;

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

{

**int** temp=a[inc];

a[inc]=a[dec];

a[dec]=temp;

inc++;dec--;

}

System.***out***.println(Arrays.*toString*(a));

1. **WAP to print all the unicode values from 0 to 128**

**public** **class** PrintingChars {

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

**for** (**int** j=0;j<=128;j++)

{

**char** ch=(**char**)j;

System.***out***.println(ch+" "+j);

}}}

1. **Print all the values from high to lowest for the given no.**

**public** **class** Highest\_to\_Lowest {

**public** **static** **void** test(**int** i)

{

**if**(i>=1)

{

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

*test*(i-1);

}

}

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

{

*test*(4);

}}}

1. **Print all the values from lowest to highest for the given no.**

**public** **class** Highest\_to\_Lowest {

**public** **static** **void** test(**int** i)

{

**if**(i>=1)

{

*test*(i-1);

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

}

}

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

{

*test*(4);

}}}

1. **To print only the digits in a given string**

**public** **class** ToprintOnlyDigits {

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

String str1="Page 14 of 56";

**char**[]a=str1.toCharArray();

//1st way

**for**(**char** b:a){

**if**(b>='0'&&b<='9')

{

System.***out***.print(b);

}

}

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

//2nd Way

String str2="Page 14 of 56";

**char**[]b=str2.toCharArray();

**for**(**char** c:b)

{

**if**(Character.*isDigit*(c))

{

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

}}}}

1. **To find the duplicate letter present in a String**

**public** **class** Print\_Duplicate\_Character2 {

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

String str="dell";

**char**[]a=str.toCharArray();

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

{

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

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

{

System.***out***.println(a[j]);

}

}}}}

//The above program print duplicate characters if present more than once

1. **To print the words in a given string**

**public** **class** ToPrintWords {

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

// **TODO** Auto-generated method stub

//1st way

String str1="This is Java";

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

**for**(String s:v)

{

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

}

//2nd Way

String str2="This is Java";

**char**[] c=str2.toCharArray();

**for**(**char** ch:c)

{

**if**(ch==' ')

{

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

}

}

//Without using loop statements.

System.***out***.println(str1.replace(' ', '\n'));}}

1. **To Print Duplicate characters**

**public** **class** Print\_Duplicate\_Character {

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

String str="dell";

**boolean** duplicate=**false**;

**char**[]a=str.toCharArray();

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

{

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

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

{

duplicate=**true**;

a[j]=' ';

}

}

**if**(duplicate)

{

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

duplicate=**false**;

}}}}

1. **To Print Hello in Pattern**

**public** **class** PrintHello {

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

/\*To Print

H

He

Hel

Hell

Hello\*/

/\*for(int i=0;i<s.length();i++){

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

{

System.out.print(s.charAt(j));

}

System.out.println();

}\*/

//Without using CharAt() and converting to CharArray

String s="Hello";

**char** c[]=s.toCharArray();

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

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

{

System.***out***.print(c[j]);

}

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

1. **Print duplicate characters.**

**public** **class** Printstringwithduplcte {

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

String str="aabbb";

**char**[]a=str.toCharArray();

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

{

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

{

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

{

a[j]=' ';

}}}

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

String s=**new** String(a);

System.***out***.println(s.replace(" ",""));}}

1. **Print upper case letter.**

**public** **class** PrintUppercaseLetters {

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

String str="This Is Automation Class";

**char**[] a=str.toCharArray();

//1st way

**for**(**char** b:a)

{

**if**(Character.*isUpperCase*(b))

{

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

}

}

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

//2nd way

**for**(**char** d:a)

{

**if**(d>='A' && d<='Z')

{

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

}

}}}

1. **Remove spaces in a given sentence**

**public** **class** RemoveSpaces {

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

String str1="Hello My Dear Friends";

String str2=" ";

**char**[] a= str1.toCharArray();

**for**(**char** b:a)

{

**if**(b!=' ')

str2=str2+b;

}

System.***out***.println(str2);}}

1. **WAP to reverse an Array.**

**public** **class** ReversanArray {

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

//To print the array in Reverse

/\*int[]a={10,20,30,44,50};

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

{

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

} \*/

//To reverse an Array

//1st Way

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

**int** inc=0;

**int** dec=a.length-1;

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

{

**int** temp=a[inc];

a[inc]=a[dec];

a[dec]=temp;

inc++;dec--;

}

System.***out***.println(Arrays.*toString*(a));

}}

1. **To Reverse a given number**

**public** **class** Reversegivennumber {

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

**int** n=123;

**int** rev=0;

**while**(n>0){

**int** rem=n%10;

rev=rem+rev\*10;

n=n/10;

}

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

/\*String s2=new StringBuffer(" "+n).reverse().toString();

System.out.println(s2);\*/

}}

1. **WAP to separate the mixed string and print them separately.**

**public** **class** SeparateMixedString {

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

String str1="#1@Test$";

String num="";

String ltr="";

String spl="";

**char**[]a=str1.toCharArray();

**for**(**char** b:a)

{

**if**(Character.*isDigit*(b))

{

num=num+b;

}

**else** **if**(Character.*isLetter*(b))

{

ltr=ltr+b;

}

**else**

{

spl=spl+b;

}

}

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

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

System.***out***.println(spl); }}

1. **wap to find the no of words passed as runtime argument**

**Ans: System.out.println(args.length);**

1. **How do you remove third element of an array?**

**Ans: We cannot remove, We will re-initialize values to default value.**

**Int arr[2]=0;**

**Double arr[2]=0.0;**

**String arr[2]=null;**

**Orange arr[2]=null;**

1. **WAP to reverse an array?**

**public class RevArray {**

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

**// TODO Auto-generated method stub**

**int arr[]={10,20,30,40,50,60};**

**int start=0;**

**int end =arr.length-1;**

**int temp=0;**

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

**{**

**temp=arr[start];**

**arr[start]=arr[end];**

**arr[end]=temp;**

**start++;**

**end--;**

**}**

**for(int i:arr)**

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

**}**

**}**

**Same logic can be used for odd numbered array.**

1. **WAP to rotate first half separately, second half separately.**

**WAP to rotate ar array (Note: Reverse and rotate both are different)**

**package com.qspider.progm\_class;**

**public class Rotate1stndhalf {**

**// incomplete do it post lunch**

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

**int arr[]={10,20,30,40,50};**

**//rotate by a step**

**for(int j=0;j<arr.length-1;j++)**

**{ int temp=arr[j];**

**arr[j]=arr[j+1];**

**arr[j+1]=temp;**

**}**

**for (int i: arr)**

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

1. **WAP to rotate an array by mentioned number of steps**
2. **WAP to perform array addition**

**package com.qspider.progm\_class;**

**public class Addsingdimarray {**

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

**// TODO Auto-generated method stub**

**int arr1[][]={{10,20},{30,40}};**

**int arr2[][]={{50,60},{70,80}};**

**int arr3[][]=new int[arr1.length][];// gives number of rows**

**for (int i=0;i<arr1.length;i++)**

**{**

**arr3[i]=new int[arr1[i].length];//separately mentioning the colomns for very row**

**}**

**for (int i=0;i<arr1.length;i++)**

**{for(int j=0;j<arr1[i].length;j++)**

**{**

**System.out.print(arr1[i][j]);**

**}**

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

**}**

**for (int i=0;i<arr1.length;i++)**

**{**

**for(int j=0;j<arr1[i].length;j++)**

**{**

**arr3[i][j]=arr1[i][j]+arr2[i][j];**

**}**

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

**}**

**for (int i=0;i<arr2.length;i++)**

**{**

**for(int j=0;j<arr2[i].length;j++)**

**{**

**System.out.println(arr2[i][j]);**

**}**

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

**}**

**for (int i=0;i<arr1.length;i++)**

**{**

**for(int j=0;j<arr1[i].length;j++)**

**{**

**System.out.print(arr3[i][j]);**

**}**

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

1. **wap to get a sub array into another existing array. compulsary question.**

**Orange arr[2]= null;**

**}**

1. **wap to find the no of words passed as runtime argument**

**System.out.println(args.length);**

1. **wap to sort the sentence based on length of the words in a given sentence**

**public class StringArraySort {**

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

**String str="tomorrow is not holiday and you have mock";**

**String words[]=str.split(" ");**

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

**wordsort(words);**

**System.out.println(Arrays.toString(words));**

**}**

**static void wordsort(String[] arr)**

**{**

**String temp=null;**

**boolean flag=true;**

**while(flag)**

**{flag=false;**

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

**{if(arr[i].length()>arr[i+1].length())**

**{ temp=arr[i];**

**arr[i]=arr[i+1];**

**arr[i+1]=temp;**

**flag=true;}}}}**

1. **I have a String array with duplicate values.How do you print unique values(non duplicate) from an array and sort it according to your preference**

**String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google","Facebooke","Tesla",**

**"eCommerce","mCommerce"};**

**public class IQ1 {**

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

**String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google",**

**"Facebook","Tesla", "eCommerce","mCommerce"};**

**List<String> lst=new ArrayList<>(Arrays.asList(str));**

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

**Set<String> set=new HashSet<>(lst);**

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

**Object objs[]=set.toArray();**

**wordsort(objs);**

**System.out.println(Arrays.toString(objs));}**

**static void wordsort(Object[] arr)**

**{**

**String temp=null;**

**boolean flag=true;**

**while(flag)**

**{ flag=false;**

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

**{if(((String)arr[i]).compareTo((String)arr[i+1])>0)**

**{ temp=(String)arr[i];**

**arr[i]=(String)arr[i+1];**

**arr[i+1]=temp;**

**flag=true;}}}}}**

1. **WAP Multiply without multiplication operator**

public class Multiplywithoutoperator{

public static void main(String[] args)

int numner1=10;

int numner2=5;

int result=0;

for (int i=1;i<=number2:i++)

{result=result+number1:

}

System.out.println(result)

}}

1. **WAP to divide a number from another without division operator**

int number =26;

int divisior=5;

int result =0;

while((number-divisor)>=0){

result++;

number = number - divisor;

}

System.out.println(result):

}

1. **Can we Print 2 Dimesnioanl array using arrays.toString()**

Note\*\*\*\*\*\*\*\*\*- arrays.toString() takes only a single dimensional array

1. **To find the number of object created.**

**class Apple**

**{**

**static int cntr;**

**Apple ()**

**{**

**contr++**

**}**

**class ObjectCountDemo**

**{**

**public static void main (String...args)**

**{**

**Apple a1=new Apple();**

**new Apple();**

**Apple a3=new Apple();**

**Apple a4=new Apple();**

**System.out.println("Object count is" + Apple.Cntr);**

**}**

**}**

1. **To swap 2 strings**

**public** **class** SwapString {

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

//1st Way

/\*String a = "one";

String b = "two";

a = a + b;

b = a.substring(0, (a.length() - b.length()));

a = a.substring(b.length());

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

System.out.println("b = " + b);\*/

//2nd way

String a = "one";

String b = "two";

a = a + b;

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

b = a.replace(b, "");

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

a = a.replace(b, "");

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

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

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

}

1. **Password Verification**

**public** **class** VerifyPassword {

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

**int** caps=0;

**int** alpha=0;

**int** spl=0;

**int** digit=0;

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

System.***out***.println("Enter Your Password");

String s=input.nextLine();

**if**(s.length()>=8)

{

**int** ch;

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

{

ch=s.charAt(i);

**if**(ch>65&&ch<=90)

caps++;

**else** **if**(ch>=97&&ch<=122)

alpha++;

**else** **if**(ch>=48&&ch<=57)

digit++;

**else** **if**(ch>=97&&ch<=122)

alpha++;

**else** //if(ch>=33&ch<=47||ch>=91&ch<=96||ch>=123&ch<=499)

spl++;

}

}

**if**(caps>0&&alpha>0&&digit>0&&spl>0){

System.***out***.println("password is valid");

System.***out***.println("Password contains " +caps+" Capital Letter "+alpha+" Small letters "+digit+" Digits "+" Special Char "+spl);

}

**else**

{ System.***out***.println("Password is Invalid");

System.***out***.println("Password contains " +caps+" Capital Letter "+alpha+" Small letters "+digit+" Digits "+" Special Char "+spl);}}}

1. **Print I love java in For loop without writing anything in the body**

**public** **class** Ilovejava {

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

**for**(**int** i=1;i<=10;i++,System.***out***.println("I Love Java"))

{}}}

1. **To find smallest and largest number of an array**

**public** **class** Smal\_larnumofarray {

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

**int**[]arr={90,5,12,56,2};

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

{

**for**(**int** j=0;j<arr.length-1;j++)

{

**if**(arr[j]<arr[j+1])

{

**int** temp=arr[j];

arr[j]=arr[j+1];

arr[j+1]=temp;

}}}

System.***out***.println("Largest no of array is " + arr[0]+" And Smallest no of Array is "+arr[arr.length-1]);}}

1. **WAP to print highest of 3 nums**

**public class Toprinthighof3nos** {

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

**int** x,y,z;

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

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

x=sc.nextInt();

y=sc.nextInt();

z=sc.nextInt();

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

System.***out***.println("First number is largest");

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

System.***out***.println("Second Number is Largest");

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

System.***out***.println("Thrd Number is Largest");

**else**

System.***out***.println("Entered numbers are not distinct");}}

1. **WAP a program to get the following**

## Input str1=”Water, Str2=”Bottle”

## o/p- WatBottleer

**public** **class** Manipulate String {

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

String str1="Water";

String str2="Bottle";

System.***out***.println(str2.replaceFirst("",str1.substring(0,3))+str1.substring(str1.length()-2,str1.length()));

}}

1. **WAP a program to print average of the integer array elements and also to print the mean base on odd or even number of elements in the array.**

**public** **class** ArrayAverage {

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

**int** num[]=**new** **int**[]{10,20,15,25,16,60,100,5,7};

//to print the average of array element

**int** sum=0;

**double** avg=0;

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

{

sum=sum+num[i];

avg=sum/num.length;

}

System.***out***.println("Average of Array element is: "+ avg);

//to give you the mean based on odd or even elements in the array

**if**(num.length%2==0){

**int** num1pos=num.length/2;

**int** num2pos=num1pos+1;

**double** mean=(num[num1pos-1]+num[num2pos-1])/2;

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

}

**else**

{

**int** num1pos=num.length/2;

System.***out***.println(num[num1pos]);}}}

1. **WAP a program divide a number without using/operator.**Done

**public** **class** DevidenumwithtdivOperator {

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

**int** number=26;

**int** divisor=5;

**int** result=0;

**while**((number-divisor)>=0)

{

result++;

number=number-divisor;

}

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

1. **WAP a program Multiply a number without using \* Multiplication operator.-**Done

**public** **class** MulnumwithtmulOperator {

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

**int** number1=10;

**int** number2=5;

**int** result=0;

**for**(**int** i=1;i<=number2;i++)

{

result=result+number1;

}

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

}

}

1. **WAP a program to sort number and digits in a given string :**Done

**public** **class** SortingNumbersanddigits {

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

String str="abcd123efgh456";

**char**[] charArray=str.toCharArray();

StringBuffer str1=**new** StringBuffer();

StringBuffer str2=**new** StringBuffer();

**for**(**char** ch:charArray)

{

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

str1=str1.append(ch);

**else**

{

str2=str2.append(ch);

}

}

System.***out***.println(str1);

System.***out***.println(str2);}}

1. **WAP a program to print A-Z and a-z :\_Know program**

**public** **class** PrintAtoZ {

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

**for**(**char** ch='a';ch<='z';ch++)

{

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

}

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

**for**(**char** ch='A';ch<='Z';ch++)

{

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

**BlackVeltBulls App!**

1. **To print following triangle.**

1

1 1

1 1 1

1 1 1 1

1 1 1 1 1

**public** **class** FollowingTriangle {

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

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

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

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

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

{

//print the blank spaces

**for**(**int** j=1;j<=rowcount-i;j++)

{

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

}

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

{

System.***out***.print(1+" ");

}

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

1. **To print next character in a given string.**

**public** **class** Setnextcharfrstring {

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

String str="Selenium";

StringBuffer str1=**new** StringBuffer();

**char** arr[]=str.toCharArray();

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

{

**char** ch=arr[i];

str1=str1.append(++ch);

}

System.***out***.println(str1);}}

1. **To print the perfect number.**

**Ex: The number 6 is said to be a perfect number because it is equal to the sum of all its exact divisor(Other than default)**

**public** **class** Toprintperfnum {

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

**int** sum=0,x=0;

**for**(**int** num=1;num<500;num++)

{

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

{

x=num%i;

**if**(x==0)

sum=sum+i;

}

**if** (sum==num)

{

System.***out***.println("perfect Number is:"+ num);

System.***out***.println("Factors are:");

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

{

x=num%i;

**if**(x==0)

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

}

}

sum=0;

}}}

1. **Write a program to split an array**

**public** **class** ArraySplit {

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

**int**[]numbers=**new** **int**[]{4,5,1,8,7,3};

//Arrays.copyOfRange(array,from,to)

//from- the initial index of the range to be copied,inclusive

//to-the final index of the range to be copied, exlusive.(This index may lie outside the array)

**int**[]arr1=Arrays.*copyOfRange*(numbers, 0,2);

System.***out***.println(arr1[0]);

System.***out***.println(arr1[1]);

**int**[]arr2=Arrays.*copyOfRange*(numbers, 2,4);

System.***out***.println(arr2[0]);

System.***out***.println(arr2[1]);

**int**[]arr3=Arrays.*copyOfRange*(numbers, 4,6);

System.***out***.println(arr3[0]);

System.***out***.println(arr3[1]);}}

1. **Write a program to find lowest/highest number of an array and print it’s index too**

**public** **class** Findhighnuminarrnindex {

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

**int** arr[]={3,5,8,1,7,2};

**int** highest=arr[0];

**int** index=0;

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

{

**if**(arr[i]>highest)// **if**(arr[i]<highest)//

{

highest=arr[i];

index=i;

}

}

System.***out***.println("Highest Number is "+ highest);

System.***out***.println("at the index "+ index);}}

1. **How to identify a given positive decimal number as even/odd without using % or / operator**

A plain trap, even for those experienced people You May be very good at coding, but if you questioning how on earth you could solve this problem . there is a solution. If you remember the good old days of our primary school then the solution is easy, “division is matter of iterative subtraction.”

**public** **class** TestEvenOdd {

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

**int** num=6;

**int** result=num;

**while**(result>=2)

{

result=result-2;

}

**if**(result==1)

System.***out***.println("The number is odd");

**else**

System.***out***.println("The number is even");}}

1. **Convert a given string as “11/12/2010” to a Date object For those who are Java Development may think this would be a big programming to solve. But remember Java is famous for its Libraries.**

**public** **class** StringToDate {

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

SimpleDateFormat sdf= **new** SimpleDateFormat("dd/MM/yyyy");

String dateString="11/12/2010";

Date d=sdf.parse(dateString);

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

}

}

1. **Write a program that proves Strings are immutable.**

**Ans: Though there is no way to find Strings are immutable through coding, but the code below is an attempt to show if strings are mutable. Remember the only one way to say if string are immutable is to see the API.**

**public** **class** Immutable {

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

String initial="ABCCDEF";

String After=initial.replace('A','Z');

System.***out***.println("intial "+initial);

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

}

}

**Collection Programs**

1. **How to copy or clone a ArrayList?(Done)**

**public** **class** MyArrayListClone {

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

ArrayList<String> arr1=**new** ArrayList<String>();

//adding elements to the array

arr1.add("First");

arr1.add("Second");

arr1.add("Third");

arr1.add("Random");

System.***out***.println("Actual Array List"+arr1);

ArrayList<String> Copy=(ArrayList<String>)arr1.clone();

System.***out***.println("Cloned Array List"+Copy);}}

1. **Program: How to find does ArrayList contains all list elements or not?**

**import** java.util.ArrayList;

**import** java.util.List;

**public** **class** MyelmentCheck {

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

ArrayList<String> arr1=**new** ArrayList<>();

arr1.add("First");

arr1.add("Second");

arr1.add("Third");

arr1.add("Random");

List<String> lst=**new** ArrayList<String>();

lst.add("Second");

lst.add("Random");

System.***out***.println("Does ArraList contains all list elements?:"+ arr1.containsAll(lst));

lst.add("one");

System.***out***.println("Does ArrayList contains all list elements?:"+arr1.containsAll(lst));}}

1. **Program: How to copy ArrayList to Array?**

**public** **class** MyArrayListArray {

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

ArrayList<String> arr1=**new** ArrayList<>();

arr1.add("First");

arr1.add("Second");

arr1.add("Third");

arr1.add("Random");

System.***out***.println("Actual Array List:"+ arr1);

String[] strArr=**new** String[arr1.size()];

arr1.toArray(strArr);

**for**(String str:arr1)

{

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

}}}

1. **Program: How to shuffle elements in ArrayList?**

**public** **class** MyArrayListShuffle {

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

ArrayList<String> list= **new** ArrayList<String>();

list.add("Java");

list.add("Crick");

list.add("Play");

list.add("Watch");

list.add("Glass");

list.add("Movie");

list.add("Girl");

System.***out***.println("Array List Before Shuffling"+list);

Collections.*shuffle*(list);

System.***out***.println("Array List After Shuffling"+list);

System.***out***.println("By Using for each");

**for**(String str:list)

{

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

}}}

1. **Program: How to swap elements in ArrayList?**

**public** **class** MyArrayListSwap {

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

ArrayList<String> list= **new** ArrayList<String>();

list.add("Java");

list.add("Crick");

list.add("Play");

list.add("Watch");

list.add("Glass");

list.add("Movie");

list.add("Girl");

Collections.*swap*(list, 0, 6);//Here "Java" and Girl Will be swapped

System.***out***.println("result after swap operation"+list);}} here end index is not exclusive.

1. **Program: How to cpy LinkedList to Array?**

**public** **class** MyLinkedListArray {

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

LinkedList<String> arr1=**new** LinkedList<>();

arr1.add("First");

arr1.add("Second");

arr1.add("Third");

arr1.add("Random");

System.***out***.println("Actual Array List:"+ arr1);

String[] strArr=**new** String[arr1.size()];

arr1.toArray(strArr);

**for**(String str:arr1)

{

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

}}}

1. **Program: How to get sublist from LinkedList?**

**public** **class** MyLinkedListSubRange {

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

LinkedList<String> arr1=**new** LinkedList<>();

arr1.add("First");

arr1.add("Second");

arr1.add("Third");

arr1.add("Random");

arr1.add("click");

System.***out***.println("Actual Array List:"+ arr1);

List<String> list=arr1.subList(2, 4);

System.***out***.println("Sub List"+ list);

}}

1. **Program: How to reverse LinkedList content?**

**public** **class** MyLinkedListReverse {

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

LinkedList<String> lst=**new** LinkedList<>();

lst.add("First");

lst.add("Second");

lst.add("Third");

lst.add("Random");

lst.add("click");

Collections.*reverse*(lst);

System.***out***.println("Result after reverse Operation:"+ lst);

**for**(String str:lst)

{

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

}}}

1. **Program: How to read first element from LinkedList?**

**public** **class** MyFirstElement {

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

LinkedList<String> lst=**new** LinkedList<>();

lst.add("First");

lst.add("Second");

lst.add("Third");

lst.add("Random");

lst.add("click");

System.***out***.println("Actual Array List:"+ lst.element());

System.***out***.println("Actual Array List:"+ lst.getFirst());

System.***out***.println("Actual Array List:"+ lst.peek());

System.***out***.println("Actual Array List:"+ lst.peekFirst());

}}

1. **Program: How to read last element from LinkedList?**

**public** **class** MyLastElement {

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

LinkedList<String> lst=**new** LinkedList<>();

lst.add("First");

lst.add("Second");

lst.add("Third");

lst.add("Random");

lst.add("click");

System.***out***.println("Actual Array List:"+ lst.getLast());

System.***out***.println("Actual Array List:"+ lst.peekLast());

}}

1. **Program: How to iterate through linked List in reverse order?**

**public** **class** MyReverseIterator {

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

LinkedList<String> lst=**new** LinkedList<>();

lst.add("First");

lst.add("Second");

lst.add("Third");

lst.add("Random");

Iterator itr=lst.descendingIterator();

**while**(itr.hasNext())

{

System.***out***.println(itr.next());

}

}}

1. **Program: How to copy Set content to another Hashset?**

**public** **class** MyHashSetCopy {

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

HashSet<String> hs= **new** HashSet<String>();

//add elemnts to HashSet

hs.add("First");

hs.add("Second");

hs.add("third");

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

HashSet<String> subSet= **new** HashSet<String>();

subSet.add("s1");

subSet.add("s2");

hs.addAll(subSet);

System.***out***.println("HashSet content "+hs);}}

1. **Program: How to compare two sets and retain elements which are same on both sets ?**

**public** **class** MyHashSetRetain {

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

HashSet<String> hs= **new** HashSet<String>();

//add elements to HasSet

hs.add("first");

hs.add("second");

hs.add("third");

hs.add("apple");

hs.add("rat");

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

HashSet<String>subset=**new** HashSet<String>();

subset.add("rat");

subset.add("second");

subset.add("first");

hs.retainAll(subset);

System.***out***.println("HashSet content:");

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

1. **Program: How to copy Map content to another HashMap ?**

**public** **class** MyHashCopy {

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

HashMap<String,String> hm=**new** HashMap<String,String>();

//add key-value pair to hashmap

hm.put("first", "FIRST INSERTED");

hm.put("second", "SECOND INSERTED");

hm.put("third", "THIRD INSERTED");

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

HashMap<String,String>submap=**new** HashMap();

submap.put("s1", "S1 VALUE");

submap.put("s2", "S2 VALUE");

hm.putAll(submap);

System.***out***.println(hm);}}

1. **Program: How to search a key in Hash Map?**

**public** **class** MyHashMapKeySearch {

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

HashMap<String,String> hm=**new** HashMap<String,String>();

//add key-value pair to hashmap

hm.put("first", "FIRST INSERTED");

hm.put("second", "SECOND INSERTED");

hm.put("third", "THIRD INSERTED");

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

**if**(hm.containsKey("first")){

System.***out***.println("The hashmap contains key first");}

**else**

System.***out***.println("The hashmap doesnot contains key first");

**if**(hm.containsKey("fifth")){

System.***out***.println("The hashmap contains key fifth");}

**else**

System.***out***.println("The hashmap doesnot contains key fifth");}}

1. **Program: How to search a value in Hash Map?**

**public** **class** MyHashMapValueSearch {

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

HashMap<String,String> hm=**new** HashMap<String,String>();

//add key-value pair to hashmap

hm.put("first", "FIRST INSERTED");

hm.put("second", "SECOND INSERTED");

hm.put("third", "THIRD INSERTED");

hm.put("third", "FOURTH INSERTED");

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

**if**(hm.containsValue("SECOND INSERTED"))

{

System.***out***.println("The HashMap contains value SECOND INSERTED");

}

**else**

System.***out***.println("The HashMap doesnot contains value SECOND INSERTED");

**if**(hm.containsValue("FOURTH INSERTED"))

{

System.***out***.println("The HashMap contains value FOURTH INSERTED");

}

**else**

System.***out***.println("The HashMap doesnot contains value FOURTH INSERTED");}}

1. **Program: How to get all keys from Hash Map?**

**public** **class** MyHashMapKeys {

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

HashMap<String,String> hm=**new** HashMap<String,String>();

//add key-value pair to hashmap

hm.put("first", "FIRST INSERTED");

hm.put("second", "SECOND INSERTED");

hm.put("third", "THIRD INSERTED");

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

Set<String>keys=hm.keySet();

**for**(String key:keys)

{

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

}}}

1. **Program: How to get entry set from Hash Map?**

**public** **class** MyHashMapEntrySet {

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

HashMap<String,String> hm=**new** HashMap<String,String>();

//add key-value pair to hashmap

hm.put("first", "FIRST INSERTED");

hm.put("second", "SECOND INSERTED");

hm.put("third", "THIRD INSERTED");

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

//getting value for the given key from hashmap

Set<Entry<String,String>> entries=hm.entrySet();

**for**(Entry<String,String> ent:entries)

{

System.***out***.println(ent.getKey()+"=>"+ent.getValue());}}}

1. **Program: How to delete all elements from HashMap?**

**public** **class** MyHashMapClear {

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

HashMap<String,String> hm=**new** HashMap<String,String>();

//add key-value pair to hashmap

hm.put("first", "FIRST INSERTED");

hm.put("second", "SECOND INSERTED");

hm.put("third", "THIRD INSERTED");

System.***out***.println("My Hash Map content");

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

System.***out***.println("Clearing Hash Map");

hm.clear();

System.***out***.println("Content after clearing");

System.***out***.println(hm);}}

1. **Program: How to search a key in TreeMap?**

**public** **class** MyTreeMapKeySearch {

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

TreeMap<String,String> tm=**new** TreeMap<String,String>();

//add key-value pair to hastmap

tm.put("first", "FIRST INSERTED");

tm.put("second", "SECOND INSERTED");

tm.put("third", "THIRD INSERTED");

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

**if**(tm.containsKey("first")){

System.***out***.println("The TreeMap contains key first");}

**else**

System.***out***.println("The TreeMap doesnot contains key first");

**if**(tm.containsKey("fifth")){

System.***out***.println("The Tree contains key fifth");}

**else**

System.***out***.println("The TreeMap doesnot contains key fifth");}}

1. **Program: How to search a value in TreeMap?**

**public** **class** MyTreeMapValueSearch {

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

TreeMap<String,String> tm=**new** TreeMap<String,String>();

//add key-value pair to hastmap

tm.put("first", "FIRST INSERTED");

tm.put("second", "SECOND INSERTED");

tm.put("third", "THIRD INSERTED");

tm.put("third", "FOURTH INSERTED");

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

**if**(tm.containsValue("SECOND INSERTED"))

{

System.***out***.println("The TreeMap contains value SECOND INSERTED");

}

**else**

System.***out***.println("The TreeMap doesnot contains value SECOND INSERTED");

**if**(tm.containsValue("FOURTH INSERTED"))

{

System.***out***.println("The TreeMap contains value FOURTH INSERTED");

}

**else**

System.***out***.println("The TreeMap doesnot contains value FOURTH INSERTED");}}

1. **Program: How to get key from TreeMap?**

**public** **class** MyTreeMapKeys {

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

TreeMap<String,String> tm=**new** TreeMap<String,String>();

//add key-value pair to hastmap

tm.put("first", "FIRST INSERTED");

tm.put("second", "SECOND INSERTED");

tm.put("third", "THIRD INSERTED");

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

Set<String>keys=tm.keySet();

**for**(String key:keys)

{

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

}}}

1. **Program: How to get sorted submap from TreeMap? Why do we need comparable method since tree map is Auto sorted.**

**class** MyCompr **implements** Comparator<String>

{

@Override

**public** **int** compare(String str1, String str2) {

**return** str1.compareTo(str2);

}

}

**public** **class** MySubTreeMap {

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

//the treemap sorts by key

TreeMap<String,String>tm=**new** TreeMap<>(**new** MyCompr());

//add key-value pair to TreeMap

tm.put("a", "language");

tm.put("e", "machine");

tm.put("c", "country");

tm.put("d", "fruit");

tm.put("b", "cricket");

System.***out***.println("Tree Map Entries");

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

Map<String,String>subMap1=tm.subMap("a","b");

System.***out***.println("Sub-Map entries");

System.***out***.println(subMap1);

//how to get lower boundary also part of sub-map

Map<String,String>subMap2=tm.subMap("a",**true**, "e",**true**);

System.***out***.println("Sub-Map entries");

System.***out***.println(subMap2);

//how to omit upper boundary in the sub-map

Map<String,String>subMap3=tm.subMap("a",**true**, "c",**false**);

System.***out***.println("Sub-Map entries");

System.***out***.println(subMap3); }}

1. **Program: How to iterate through HashTable?**

**public** **class** MyHashTableRead {

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

Hashtable<String,String>hm=**new** Hashtable<String,String>();

//add key-value pair to HashTable

hm.put("first", "FIRST INSERTED");

hm.put("second", "SECOND INSERTED");

hm.put("third", "THIRD INSERTED");

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

Set<String>keys=hm.keySet();

**for**(String key:keys)

{

System.***out***.println("Value of "+key+" is => "+hm.get(key));

}}}

1. **Program: How to copy Map content to another HashTable?**

**public** **class** MyHashtableCopy {

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

Hashtable<String,String> ht=**new** Hashtable<String,String>();

//add key-value pair to Hashtable

ht.put("a","FIRST INSERTED");

ht.put("b","SECOND INSERTED");

ht.put("c","THIRD INSERTED");

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

HashMap<String,String>subMap=**new** HashMap<String,String>();

subMap.put("s1", "S1 VALUE");

subMap.put("s2", "S2 VALUE");

ht.putAll(subMap);

System.***out***.println(ht);}}

1. **Program: How to search a key in HashTable?**

**public** **class** MyHashTableKeySearch {

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

Hashtable<String,String>ht=**new** Hashtable<String,String>();

//add key-value pair to HashTable

ht.put("first","FIRST INSERTED");

ht.put("second","SECOND INSERTED");

ht.put("third","THIRD INSERTED");

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

**if**(ht.containsKey("first"))

System.***out***.println("The Hashtable contains key first");

**else**

System.***out***.println("The HashTable doesnot contain key");}}

1. **Program: How to add all elements of a list to vector?**

**public** **class** MyVectorNewCollection {

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

Vector<String>vct=**new** Vector<String>();

//adding elements to the end

vct.add("First");

vct.add("Second");

vct.add("Third");

vct.add("Random");

System.***out***.println("Actual vector"+ vct);

List<String>list= **new** ArrayList<String>();

list.add("one");

list.add("two");

vct.addAll(list);

System.***out***.println("After Copy:"+vct);}}

1. **Program: How to delete all elements from my vector ?**

**public** **class** ClearVector {

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

Vector<String> vct= **new** Vector<String>();

//adding elements to the end

vct.add("First");

vct.add("Second");

vct.add("Third");

vct.add("Random");

System.***out***.println("Actual vector:"+ vct);

vct.clear();

System.***out***.println("Actual clear vector"+ vct);}}

1. **Program: How to find does vector contains all list elements or not ?**

**public** **class** MyElementCheck {

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

Vector <String> vct= **new** Vector<String>();

vct.add("First");

vct.add("Second");

vct.add("Third");

vct.add("Random");

List<String> lst=**new** ArrayList<String>();

lst.add("Second");

lst.add("Random");

System.***out***.println("Does vector contains all list elements?:"+vct.containsAll(lst));

lst.add("one");

System.***out***.println("Does vector contains all list elements?:"+vct.containsAll(lst));}}

1. **Program: How to copy vector to array ?**

**public** **class** MyVectorArrayCopy {

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

Vector<String> vct= **new** Vector<String>();

//adding elements to the end

vct.add("First");

vct.add("Second");

vct.add("Third");

vct.add("Random");

System.***out***.println("Actual vector:"+ vct);

String[] copyArr=**new** String[vct.size()];

vct.copyInto(copyArr);

System.***out***.println("Copied Array content:");

**for**(String str:copyArr)

{

System.***out***.println(str);}}}

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*End of collections\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. **Program: To check number of occurrence of each character in given string**

**public** **class** checkcharcountinString {

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

String s="aabbcdefacaebdf";

**char**[] ch=s.toCharArray();

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

{

**char** c=ch[i];

**int** f=0;

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

{

**if**(c==ch[j])

f++;

}

**if**(i==0)

{

System.***out***.println("for "+ c+" is repeating for "+ f+" times");

**continue**;

}

**boolean** flag=**true**;

**for**(**int** k=i-1;k>=0;k--)

{

**if**(c==ch[k])

{

flag=**false**;

}

}

**if**(flag)

{

System.***out***.println("for "+ c+" is repeating for "+ f+" times");

}

}

}

}

1. **Program: To print sum of series 1+\*+\*2+\*3+…………+X\*n**

**public** **class** Formula {

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

**int** result=0,sum=0;

System.***out***.println("Enter your Value:");

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

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

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

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

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

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

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

{

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

{

sum=sum+value;

}

}

result = 1+sum;

System.***out***.println("Sum of the series is:"+ result);

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

o/p.

Enter your Value:

2

Enter the power

3

Sum of the series is:13

1. **Program: To delete an element from an array**

**public** **class** ArrayDelet {

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

**int**[] arr={90,5,12,56,4};

System.***out***.println("Enter the position that you want to delete: ");

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

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

arr[position-1]=0;

**for**(**int** value: arr)

{

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

}}}

1. **Program: write a method to take n numbers and return the sum**

**public** **class** Sumnnumbers {

**static** **int** add(**int**...j)

{

**int** sum=0;

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

{

sum=sum+j[i];

}

**return** sum;

}

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

**int** x[]={1,2,3,4};

System.***out***.println(*add*(x));

}

}

Comparable Demo’s

**class OotyApple implements Comparable<OotyApple>**

**{**

**int wt;**

**OotyApple(int wt)**

**{**

**this.wt=wt;**

**}**

**public String toString()**

**{**

**return "wt"+wt;**

**}**

**public int compareTo(OotyApple o) {**

**return this.wt -o.wt;**

**}}**

**public class ComprarableDemo {**

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

**OotyApple apples[]={new OotyApple(100),new OotyApple(90),new OotyApple(60),new OotyApple(105)};**

**System.out.println(Arrays.toString(apples));**

**Arrays.sort(apples);**

**System.out.println(Arrays.toString(apples));**

**System.out.println("------collections sort----");**

**List lst=new ArrayList<>();**

**lst.add(new OotyApple(100));**

**lst.add(new OotyApple(90));**

**lst.add(new OotyApple(60));**

**lst.add(new OotyApple(105));**

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

**Collections.sort(lst);**

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

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

**TreeSet ts=new TreeSet();**

**ts.add(new OotyApple(100));**

**ts.add(new OotyApple(90));**

**ts.add(new OotyApple(60));**

**ts.add(new OotyApple(105));**

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

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

**class Student implements Comparable{**

**Integer id;**

**String name;**

**Double cgpa;**

**Student(Integer id,String name,double cgpa)**

**{**

**this.id=id;**

**this.name=name;**

**this.cgpa=cgpa;**

**}**

**public String toString()**

**{**

**return "\n " + id + "\t" + name + "\t" + cgpa;**

**}**

**public int compareTo(Object o) {**

**//sort by id**

**//return this.id.compareTo(((Student)o).id);**

**//sort by name**

**//return this.name.compareTo(((Student)o).name);**

**return this.cgpa.compareTo(((Student)o).cgpa);}}**

**public class ComparableDemo2 {**

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

**Student[] students={new Student(100,"Mahesh",7.6),**

**new Student(120,"Suresh",6.7),**

**new Student(110,"Ramesh",8.6)};**

**System.out.println(Arrays.toString(students));**

**Arrays.sort(students);**

**System.out.println(Arrays.toString(students));}}**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*same program with primitive variables like int id,\*\*\*\*\*\*\*\*\*\*\*\*\***

**package com.qspiders.collectionsdemo;**

**import java.util.Arrays;**

**class Student implements Comparable{**

**int id;**

**String name;**

**double cgpa;**

**Student(Integer id,String name,double cgpa)**

**{**

**this.id=id;**

**this.name=name;**

**this.cgpa=cgpa;**

**}**

**public String toString()**

**{**

**return "\n " + id + "\t" + name + "\t" + cgpa;**

**}**

**public int compareTo(Object o) {**

**// return this.id - ((Student)o).id;**

**/\* if (this.id> ((Student)o).id)**

**return 1;**

**else**

**return -1;**

**\*/**

**if(this.cgpa> ((Student)o).cgpa)**

**return 1;**

**else**

**return -1;}}**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*implementing comparator\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**package com.qspiders.collectionsdemo;**

**import java.util.Arrays;**

**import java.util.Comparator;**

**class Student implements Comparable{**

**int id;**

**String name;**

**double cgpa;**

**Student(Integer id,String name,double cgpa)**

**{**

**this.id=id;**

**this.name=name;**

**this.cgpa=cgpa;**

**}**

**public String toString()**

**{**

**return "\n " + id + "\t" + name + "\t" + cgpa;**

**}**

**public int compareTo(Object o) {**

**// return this.id - ((Student)o).id;**

**/\* if (this.id> ((Student)o).id)**

**return 1;**

**else**

**return -1;**

**\*/**

**if(this.cgpa> ((Student)o).cgpa)**

**return 1;**

**else**

**return -1;}}**

**class SortById implements Comparator<Student>**

**{**

**public int compare(Student o1, Student o2) {**

**return o1.id- o2.id;**

**}**

**}**

**class SortByName implements Comparator**

**{**

**public int compare(Object o1, Object o2) {**

**return ((Student)o1).name.compareTo(((Student)o2).name);**

**}**

**}**

**class SortByCGPA implements Comparator<Student>**

**{**

**public int compare(Student s1, Student s2)**

**{**

**if(s1.cgpa>s2.cgpa)**

**return 1;**

**else**

**return -1;}}**

**public class ComparableDemo2 {**

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

**Student[] students={new Student(100,"Mahesh",7.6),**

**new Student(120,"Suresh",6.7),**

**new Student(110,"Ramesh",8.6)};**

**System.out.println(Arrays.toString(students));**

**Arrays.sort(students);**

**System.out.println(Arrays.toString(students));**

**System.out.println("\*\*\*Sort By Id\*\*\*\*\*");**

**Arrays.sort(students,new SortById());**

**System.out.println(Arrays.toString(students));**

**System.out.println("\*\*\*Sort By Name\*\*\*\*\*");**

**Arrays.sort(students,new SortByName());**

**System.out.println(Arrays.toString(students));**

**System.out.println("\*\*\*Sort By CGPA\*\*\*\*\*");**

**Arrays.sort(students,new SortByCGPA());**

**System.out.println(Arrays.toString(students));}}**

**public class ComparableDemo2 {**

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

**Student[] students={new Student(100,"Mahesh",7.6),**

**new Student(120,"Suresh",6.7),**

**new Student(110,"Ramesh",8.6)};**

**System.out.println(Arrays.toString(students));**

**Arrays.sort(students);**

**System.out.println(Arrays.toString(students));}}**

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

**public class ArrayAsListDemo {**

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

**Double[] percentage={61.1,80.0,72.5,74.9,89.7,56.8};**

**List<Double> lstpercentages=Arrays.asList(percentage);**

**System.out.println("Max percentage=" + Collections.max(lstpercentages));**

**System.out.println("Min percentage=" + Collections.min(lstpercentages));**

**//lstpercentages.add(76.0); // exception**

**//you cannot add elements to the list returned by the asList() method**

**//solution**

**//List<Double> lstpercentages=new ArrayList<Double>(Arrays.asList(percentage));**

**System.out.println(lstpercentages1.getClass().getName());}}**

**4.wap to find the no of words passed as runtime argument**

**System.out.println(args.length);**

**5.wap to sort an integer array using bubble sort**

**package com.qspiders.bcmm9\_11;**

**import java.util.Arrays;**

**public class BubbleSort {**

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

**int arr[]={56,45,78,12,10};**

**sort(arr);**

**System.out.println("----after sorting----");**

**for(int i:arr)**

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

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

**arr=new int[]{56,45,78,12,10};**

**for(int i:arr)**

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

**sort1(arr);**

**System.out.println("----after sorting----");**

**for(int i:arr)**

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

**}**

**static void sort(int arr[])**

**{**

**int temp=0;**

**boolean flag=true;**

**while(flag)**

**{**

**flag=false;**

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

**{**

**if(arr[i]>arr[i+1])**

**{**

**temp=arr[i];**

**arr[i]=arr[i+1];**

**arr[i+1]=temp;**

**flag=true;}}}}**

**static void sort1(int arr[])**

**{**

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

**{**

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

**{**

**int temp=0;**

**if(arr[i]>arr[i+1])**

**{**

**temp=arr[i];**

**arr[i]=arr[i+1];**

**arr[i+1]=temp;}}}}}**

**6.wap to sort the sentence based on length of the words in a given**

**sentence**

**public class StringArraySort {**

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

**String str="tomorrow is not holiday and you have mock";**

**String words[]=str.split(" ");**

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

**wordsort(words);**

**System.out.println(Arrays.toString(words));}**

**static void wordsort(String[] arr)**

**{**

**String temp=null;**

**boolean flag=true;**

**while(flag)**

**{**

**flag=false;**

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

**{**

**if(arr[i].length()>arr[i+1].length())**

**{**

**temp=arr[i];**

**arr[i]=arr[i+1];**

**arr[i+1]=temp;**

**flag=true;}}}}}**

**7) I have an array with duplicate values.How do you print unique values(non duplicate) from an array and sort it according to your preference**

**String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google","Facebooke","Tesla",**

**"eCommerce","mCommerce"};**

**public class IQ1 {**

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

**String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google",**

**"Facebook","Tesla", "eCommerce","mCommerce"};**

**List<String> lst=new ArrayList<>(Arrays.asList(str));**

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

**Set<String> set=new HashSet<>(lst);**

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

**Object objs[]=set.toArray();**

**wordsort(objs);**

**System.out.println(Arrays.toString(objs));}**

**static void wordsort(Object[] arr)**

**{**

**String temp=null;**

**boolean flag=true;**

**while(flag)**

**{**

**flag=false;**

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

**{**

**if(((String)arr[i]).compareTo((String)arr[i+1])>0)**

**{**

**temp=(String)arr[i];**

**arr[i]=(String)arr[i+1];**

**arr[i+1]=temp;**

**flag=true; }}}}}**

1. **Multiplication of Matrix?**
2. **wap to sort sentence based on the number of words in a given sentence.**
3. **WAP to find array average?**
4. **wap to find sum of numbers passed during runtime.**
5. **wap to print the matrix**
6. **Find out the number of days in between two given dates?**
7. **How to swap 2 variables, by using pass by reference method?**
8. **How to make list immutable?**
9. **Write Immutable Class?**
10. **WAP to print number of occurances of each word in a given sentence**

**In a string remove duplicate**

1. **WAP for Binary Search**
2. **How do you find unique number in 2 arrays?**
3. **How do you determine if a given class or object implements a given interface through coding.(Without looking at the java file of the class)?**
4. **Given an complex object and its method which returns and array of strings but method return type is Object[], write code not more than a single line and without using string related method, assign the first string in the returned String Array to a string variable?**

**Let’s Suppose the method looks something very trivial like below? Not Working**

**Public Object[] returnsStringArray(){**

**Return new String[] {“abc”,”efg”};**

**Then the code that would call the method and assign the first string to a string variable is?**

**String s = (String)returnsStringArray()[0] ;**

**Converting ArrayList to LinkedList or viceversa**

**Converting a Set into List**

**Converting a List into a Set**

**1.wap to print fibonacci series from 0 to 100;**

**. wap to print the triangle**

**10 9 8 7**

**6 5 4**

**wap to print the matrix**

**1 2 3 4**

**5 6 7 8**

**9 10 11 12**

**-------------**

**as**

**a)**

**1 2 3 4 8 12 11 10 9 5 6 7**

**b)**

**1 2 3 4 12 11 10 9 5 6 7 8**

**WAP to print create a sub array from a given array.**