Programming Notes

No System

Write the program to count the no of bits

import java.util.Scanner;

public class SetedNo {

```java
    static int countbits(int n){

        int count=0;

        while(n>0){

            if(n%2==1){

                count++;

            }

            n=n/2;


        }

        return count;
```

```java
        }
        public static void main(String[] args) {

                Scanner sc=new Scanner(System.in);

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

                int n=sc.nextInt();

                int s=countbits(n);

                System.out.println("the no of bits "+s);

        }

}
```

Output

enter the no

7

the no of bits 3

Write a program to check no is happy no or not and perform operations

```java
import java.util.Scanner;


public class HappyNos {
```

```java
static boolean ishappy(int n)

{

        while(n>9){

                int sum=0;

                 while(n!=0){

                        int r=n%10;

                        sum=sum+r*r;

                        n=n/10;



                }

                n=sum;



        }

        return n==1||n==7;

}

static void happyno(int n){

        System.out.println("Happy nos are");

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

                if(ishappy(i)){

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

                }
```

```java
        }
    }
    static int counthappy(int n){
        int count=0;
        for(int i=1;i<=n;i++){
            if(ishappy(i)){
                count++;
            }
        }
        return count;
    }
    static int  sumhappy(int n){
        int sum=0;
        for(int i=1;i<=n;i++){
            if(ishappy(i)){
                sum=sum+i;
            }
        }
        return sum;
    }
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
```

```java
System.out.println("Enter the no");

int n=sc.nextInt();

boolean b=ishappy(n);

if(b)

        System.out.println("Happy no");

else

        System.out.println("Not happy no");

happyno(n);

int cnt=counthappy(n);

System.out.println("\ntotal happy are "+cnt);

int sm=sumhappy(n);

System.out.println("total happy are "+sm);

    }

}
```

output

Enter the no

21

Not happy no

Happy nos are

1 7 10 13 19

total happy are 5

number conversion

Write a program to Convert binary to decimal

```java
import java.util.Scanner;


public class BinarytoDecimal {

static int bintodec(int n){

        int dec=0;

        int c=0;

        while(n!=0){

                int r=n%10;


                dec=dec+r*pow(2,c);

                c++;

                n=n/10;

        }

        return dec;

}
```

```java
static int pow(int n, int c) {

        int pw=1;

        while(c>0)

        {

                pw=pw*n;

                c--;

        }

        return pw;

}


public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

        int bd=bintodec(n);

        System.out.println("The no is = "+bd);

    }

}
```

output:-

Write a program to convert Decimal to binary

```java
import java.util.Scanner;


public class Decimaltobinary {


        static String dectobin(int n){

                String bin="";

                while(n>0){

                        int r=n%2;

                        bin=r+bin;

                        n=n/2;


                }

                return bin;

        }

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

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

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

        int n=sc.nextInt();

        String bin=dectobin(n);

        System.out.println("the binary of "+n+" is "+bin);


    }

}
```

output

Enter the no

13

the binary of 13 is 1101

Write a program to convert binary to Hexadecimal

```java
import java.util.Scanner;


public class DecimaltoHexa {

static String dectohex(int n){

        String hx="";
```

```java
        while(n>0){

                int r=n%16;

                if(r<10){

                        hx=r+hx;

                }

                else

                        hx=(char)(r+55)+hx;

                        //hx=(char)(r+87)+hx;

                n=n/16;

        }

        return hx;


}

public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

        String octa=dectohex(n);

        System.out.println("the hexadecimal is = "+octa);


}

}
```

output

write a program to convert decimal to octal

```java
import java.util.Scanner;

public class DecimaltoOctal {
static String dectooct(int n){
        String oct="";

        while(n>0){
                int r=n%8;
                oct=r+oct;
                n=n/8;


        }
```

```java
        return oct;


}

public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

        String oct=dectooct(n);

        System.out.println("the binary of "+n+" is "+oct);


}
}
```

o/p:-

Enter the no

12

the binary of 12 is 14

==============================

write a program to check no is even or odd without using loop

```java
import java.util.Scanner;

//using String Array

public class Evenodd {

    public static void main(String[] args) {

        Scanner key=new Scanner(System.in);

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

        int no=key.nextInt();

        String str[]={"Even","Odd"};

        System.out.println(no+" is "+str[no%2]+" Number ");

    }

}
```

o/p:-

Enter the integer :

4

4 is Even Number

Array Class

1d array

****

write a program to perform sum of array and average of elements of array

package onedimensionarry;

import java.util.Scanner;

public class ArraysumandAverage {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

        int arr[]=new int[n];

        System.out.println("enter "+n+" Elements of Array ");

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

            arr[i]=sc.nextInt();

        }

        double sum=0.0;

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

                sum=sum+arr[i];

        }

        double avg =sum/arr.length;

        System.out.println("sum of "+n+" arrays are = "+sum);

        System.out.println("Avrage of "+n+" arrays are = "+avg);



    }

}
```

o/p:-

write a program to show entered elements of array ,find biggest elements and sum of the array and average of array

```java
package onedimensionarry;

import java.util.Scanner;

public class ArrayOperation
{
        //Sum of n elements of Array//
        double sumOfArray(int a[])
        {
                double sum=0.0;
                for(int i=0;i<a.length;i++){
                        sum=sum+a[i];
                }
                return sum;
        }
        //Read the Array Elements//
        int[]readArr(){
                Scanner sc=new Scanner(System.in);
```

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

        int n=sc.nextInt();

        int ar[]=new int[n];

        System.out.println("enter "+n+" Elements of Array");

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

                ar[i]=sc.nextInt();

        }

        return ar;


}
//Display entered Array elements //


void dispArr(int ele[]){

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

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

                if(i<ele.length-1){

                        System.out.print(",");

                }

        }

        System.out.println();

}
```

```java
//Get the Biggest Array elements//


public int getBiggest(int[]ar){

        int big=ar[0];

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

                if(ar[i]>big)

                        big=ar[i];



        }

        return big;

}


public static void main(String[] args) {


        ArrayOperation ao=new ArrayOperation();

        int ar[]=ao.readArr();

        System.out.print("Entered elemnts are\n");

        ao.dispArr(ar);

        int k=ao.getBiggest(ar);

        System.out.println("Biggest element is = "+k);

        double sum=ao.sumOfArray(ar);

        double avg =sum/ar.length;
```

```
            System.out.println("sum of "+ar.length+" arrays are = "+sum);

            System.out.println("Avrage of "+ar.length+" arrays are = "+avg);


     }



}
```

o/p:-Enter the size of array

5

enter 5 Elements of Array

1 3 5 6 7

Entered elemnts are

1,3,5,6,7

Biggest element is = 7

sum of 5 arrays are = 22.0

Avrage of 5 arrays are = 4.4

write a program to find no of occurence of elements in an array

package onedimensionarry;

import java.util.Scanner;

```java
public class CountEleArray {

    static void countEle(int[]ar){

        int n=ar.length;

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

            int count=1;

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

                if(ar[i]==ar[j]){

                    count++;

                    ar[j]=ar[n-1];

                    n--;

                    j--;

                }

            }

            System.out.println("no of occurence of "+ar[i]+"->"+count);

        }

    }

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

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

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

int n=sc.nextInt();

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

int arr[]=new int[n];

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

        arr[i]=sc.nextInt();



}

countEle(arr);

        }

}
```

o/p:-

Enter the size of array

4

enter the elemts

1 3 5 6

no of occurence of 1->1

no of occurence of 3->1

no of occurence of 5->1

no of occurence of 6->1

write a program to count no of prime elements in array

package onedimensionarry;

import java.util.Scanner;

public class CountPrime {

    int countPrime(int a[]){

        int pc=0;

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

            if(isprime(a[i]))

                pc++;

        }

        return pc;

    }

    static boolean isprime(int n)   {

        int i=2;

        while(i<=n/2){

            if(n%i==0)

```java
                    return false;

            i++;

        }

        return  true;

    }

    public static void main(String[] args) {

        CountPrime pc=new CountPrime();

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

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

        int ar[]=new int [n];

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

                ar[i]=sc.nextInt();


        }


        int count=pc.countPrime(ar);

        System.out.println("no of prime element is "+count);

    }

}
```

o/p:-

Enter the no of array

4

Enter the elements

 1 4 6 7

no of prime element is 2

Write a program to count no of even and odd

```java
package onedimensionarry;

import java.util.Scanner;


public class EvenOddCount1 {


        int[] readArr()

        {


                Scanner sc=new Scanner(System.in);

                System.out.println("Enter How many integer value you want");

                int n=sc.nextInt();

                int arr[]=new int[n];

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

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

```java
        {
                arr[i]=sc.nextInt();
        }

        return arr;
}


void dispArr(int ele[])
{
        for(int i=0;i<ele.length;i++)
        {
                System.out.print(ele[i]);
                if(i<ele.length-1)
                        System.out.print(",");
        }
}


int[] countEvOd(int a[])
{
        int count[]=new int[2];
        System.out.println("even and odd values are ");
        for(int i=0;i<a.length;i++)
```

```java
                {
                        count[a[i]%2]++;
                }

                return count;
        }


        public static void main(String[] args) {

                EvenOddCount1 eo=new EvenOddCount1();

                int arr[]=eo.readArr();

                int[] evod=eo.countEvOd(arr);

                eo.dispArr(evod);

        }
}
```

o/p:-

Enter How many integer value you want

3

enter the values

2 7 8

even and odd values are

2,1

write a program to find smallest elements in array

```java
package onedimensionarry;

import java.util.Scanner;

public class SmallArray {

    //Read the Array Elements//

    int[]readArr(){

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

        int ar[]=new int[n];

        System.out.println("enter "+n+" Elements of Array ");

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

            ar[i]=sc.nextInt();

        }

        return ar;


    }

    //Display entered Array elements //


    void dispArr(int ele[]){

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

```java
                    System.out.print(ele[i]);

                    if(i<ele.length-1){

                            System.out.print(",");

                    }

            }

            System.out.println();

    }

    public int getsmallest(int[]ar){

            int small=ar[0];

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

                    if(ar[i]<small)

                            small=ar[i];


            }

            return small;

    }

    public static void main(String[] args) {

        SmallArray ao=new SmallArray();

        int ar[]=ao.readArr();

            System.out.print("Entered elemnts are ");

            ao.dispArr(ar);

            int k=ao.getsmallest(ar);
```

```
                System.out.println("Smallest element is "+k);

}

}
```

o/p:-

Enter the size of array

4

enter 4 Elements of Array

1 4 6 7

Entered elemnts are 1,4,6,7

Smallest element is 1

write a program to reverse array element

package onedimensionarry;

import java.util.Scanner;

public class ReverseArray {

```
        void reversearray(int ar[]){

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

                        int t=ar[i];

                        ar[i]=ar[ar.length-1-i];
```

```java
                ar[ar.length-1-i]=t;

        }

        System.out.println("reverse elements");

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

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



        }



}

public static void main(String[] args) {

        ReverseArray rc=new ReverseArray();

        Scanner sc=new Scanner(System.in);

        System.out.print("Entered elemnts are ");

        int n=sc.nextInt();

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

        int ar[]=new int [n];

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

                ar[i]=sc.nextInt();



        }

        rc.reversearray(ar);

}
```

}

o/p:-

Entered elemnts are 4

Enter the elements

2 4 6 7

reverse elements

7 4 6 2

Write a program to count no of positive and negative elements of array

package onedimensionarry;

import java.util.Scanner;

public class NoOfpositive {

        public int getpositive(int[]ar){

                int count=0;

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

                        if(ar[i]>0)

                                count++;

```java
        }

        return count;

    }

    public int getnegative(int[]arr){

        int count1=0;

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

            if(arr[i]<0)

                count1++;



        }

        return count1;

    }

    public static void main(String[] args) {

        NoOfpositive ao=new NoOfpositive();

        Scanner sc=new Scanner(System.in);

        System.out.print("enter the no of elements of array");

        int n=sc.nextInt();

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

        int ar[]=new int [n];

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

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

```
                    }


            int count=ao.getpositive(ar);

            System.out.println("Positive element is "+count);

            int count1=ao.getnegative(ar);

            System.out.println("Negative element is  "+count1);

        }

}
```

o/p:-

enter the no of elements of array6

Enter the elements

2 4 6 8 -3 -5

Positive element is 4

Negative element is 2

Write a program to insert element at certain position

package onedimensionarry;

import java.util.Scanner;

```java
public class InsertEle {

    static int[] insert(int arr[],int ele,int index){

        if(index<0||index>arr.length){

            System.out.println("index not in range");

            return arr;

        }

        int na[]=new int[arr.length+1];

        na[index]=ele;

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

            if(i<index)

                na[i]=arr[i];

            else

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

        }

        return na;

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

        InsertEle ins=new InsertEle();

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

        System.out.println("Enter the element");
```

```java
        int arr[]=new int[n];

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

                arr[i]=sc.nextInt();

        }

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

        int ele=sc.nextInt();

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

        int index=sc.nextInt();

        arr=insert(arr,ele,index);

        sc.close();

        System.out.println("The new elemnts");

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

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


        }

    }


}
```

o/p:-

Enter the array size

4

Enter the element

1 5 7 9

enter element

6

enter position

3

The new elemnts

1 5 7 6 9

Write a program to delete an element at certain posn

package onedimensionarry;

import java.util.Scanner;

public class Delete {

    static int[] delete(int arr[],int index){

        if(index<0||index>arr.length){

            System.out.println("index not in range");

            return arr;

        }

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

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

```java
            if(i<index)
                    na[i]=arr[i];
            else
                    na[i]=arr[i+1];
    }
    return na;
}
public static void main(String[] args) {

    Scanner sc=new Scanner(System.in);
    System.out.println("Enter the array size");
    int n=sc.nextInt();
    System.out.println("Enter the element");
    int arr[]=new int[n];
    for (int i = 0; i < arr.length; i++) {
            arr[i]=sc.nextInt();
    }

    System.out.println("Enter the position");
    int index=sc.nextInt();
    arr=delete(arr,index);
    sc.close();
```

```java
            System.out.println("The new elemnts");

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

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


            }

        }

}
```

o/p:-

Enter the array size

3

Enter the element

2 5 7

Enter the position

1

The new elemnts

2 7

Write a program to find first two biggest element


```java
package onedimensionarry;
```

```java
import java.util.Scanner;

public class FirsttwoBiggest {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

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

        int arr[]=new int[n];

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

            arr[i]=sc.nextInt();

        }


        int h1=arr[0];

        int h2=arr[1];

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

         if(h1<arr[i]){

            h2=h1;

            h1=arr[i];

            }
```

```java
            else if(arr[i]>h2&&h1!=arr[i]){

                    h2=arr[i];

                    }

            }
    System.out.println("1st biggest = "+h1);

    System.out.println("2nd biggest = "+h2);

        }

        }
```

o/p:-

Enter the array size

5

Enter the element

1 4 6 8 9

1st biggest = 9

2nd biggest = 8

Write a program to find two least elements of array

package onedimensionarry;

import java.util.Scanner;

```java
public class FirsttwoLeast {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

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

        int arr[]=new int[n];

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

            arr[i]=sc.nextInt();

        }


        int l1=arr[0];

        int l2=arr[1];

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

         if(l1>arr[i]){

                l2=l1;

                l1=arr[i];

                }

         else if(arr[i]<l2&&l1!=arr[i]){

                l2=arr[i];
```

```
                    }

            }


    System.out.println("1st least = "+l1);

    System.out.println("2nd least = "+l2);

        }

}
```

o/p:-

Enter the array size

4

Enter the element

2 7 1 9

1st least = 1

2nd least = 2

Write a program to count no of element in array without array

package onedimensionarry;

import java.util.Scanner;

```java
public class WithoutCompareCountEle {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

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

        int arr[]=new int[n];

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

            arr[i]=sc.nextInt();



        }

        countElement(arr);



    }

    static void countElement(int arr[]){

        int big=arr[0];

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

            if(big<arr[i])
```

```java
                    big=arr[i];
            }
            int c[]=new int [big+1];
            for (int i = 0; i < arr.length; i++) {
                    c[arr[i]]++;
            }
            for(int i =0;i<c.length;i++){
                    if(c[i]>0)
                            System.out.println(i+"-->"+c[i]);
            }
        }
}
```

o/p:-

4

enter the elemts

1 5 86

7

1-->1

5-->1

7-->1

86-->1

Write a program to perform union operation with two two array

package onedimensionarry;

import java.util.LinkedHashSet;

import java.util.Scanner;

import java.util.Set;

public class UnionOperation {


```java
static int[] union(int a[],int b[]){

        Set<Integer> us=new LinkedHashSet<Integer>();

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

                us.add(a[i]);

        }

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

                us.add(b[i]);

        }

        int ar[]=new int[us.size()];

        int i=0;

        for(Integer ele:us){
```

```java
            ar[i]=ele;

            i++;

        }

    return ar;



}




public static void main(String[] args) {

        UnionOperation un=new UnionOperation();

        Scanner sc=new Scanner(System.in);

        System.out.println("enter the no of value for 1st array");

        int n1=sc.nextInt();

        int a[]=new int[n1];

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

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

                a[i]=sc.nextInt();


        }
```

```java
System.out.println("enter the no of value for 2nd array");

int n2=sc.nextInt();

int b[]=new int[n2];

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

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

        b[i]=sc.nextInt();


}



//int ar[]=new int[a.length+b.length];

int [] ar=union(a,b);

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

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

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


}
    }


}
```

o/p:-

enter the no of value for 1st array

4

enter the value

1 3 5 6

enter the no of value for 2nd array

3

enter the value

4 6 8

the result array is

1 3 5 6 4 8

Write a program to perform minus operation

package onedimensionarry;

import java.util.LinkedHashSet;

import java.util.Scanner;

import java.util.Set;

public class Minus {

    static int[] Minus(int a[],int b[]){

        Set<Integer> ms=new LinkedHashSet<Integer>();

        int[] ar=new int[a.length+b.length];

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

```java
            int f=1;

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

            {

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

                            f=0;

                            break;

                    }

            }

            if(f==1)

                    ms.add(a[i]);

        }

        int c[]=new int [ms.size()];

        int i=0;

        for(Integer in:ms){

                c[i]=in;

                i++;

        }

        return c;


    }

    public static void main(String[] args) {

        InterSection un=new InterSection();
```

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

System.out.println("enter the no of value for 1st array");

int n1=sc.nextInt();

int a[]=new int[n1];

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

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

        a[i]=sc.nextInt();


}

System.out.println("enter the no of value for 2nd array");

int n2=sc.nextInt();

int b[]=new int[n2];

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

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

        b[i]=sc.nextInt();


}

int [] ar1=Minus(a,b);

System.out.println("the result array (a-b) is");

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

        if(ar1[i]!=0)

                System.out.println(ar1[i]+" ");
```

```java
        }
        System.out.println("====================");
        int [] ar2=Minus(b,a);
        System.out.println("the result array (b-a) is");
        for (int i = 0; i < ar2.length; i++) {
            if(ar2[i]!=0)
                System.out.print(ar2[i]+" ");


        }
        sc.close();
    }
}
```

o/p:-

enter the no of value for 1st array

3

enter the value

 1 5 7

enter the no of value for 2nd array

5

enter the value

1 4 8 4 5

the result array (a-b) is

7

=====================

the result array (b-a) is

4 8

Write a program to perform intersection operation

package onedimensionarry;

import java.util.LinkedHashSet;

import java.util.Scanner;

import java.util.Set;

public class InterSection {

      static int[] interSection(int a[],int b[]){

          int[] ar=new int[a.length+b.length];

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

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

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

                     ar[i]=a[i];

```java
            }

        }

        return ar;


}
static int[] interSection2(int a[],int b[]){

        Set<Integer> is=new LinkedHashSet<Integer>();

        int[] ar=new int[a.length+b.length];

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

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


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

                                is.add(a[i]);

                }

        }

        int c[]=new int [is.size()];

        int i=0;

        for(Integer in:is){

                c[i]=in;

                i++;

        }

        return c;
```

```java
}
public static void main(String[] args) {

        InterSection un=new InterSection();

        Scanner sc=new Scanner(System.in);

        System.out.println("enter the no of value for 1st array");

        int n1=sc.nextInt();

        int a[]=new int[n1];

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

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

                a[i]=sc.nextInt();


        }

        System.out.println("enter the no of value for 2nd array");

        int n2=sc.nextInt();

        int b[]=new int[n2];

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

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

                b[i]=sc.nextInt();


        }

        int [] ar1=interSection2(a,b);
```

```java
            System.out.println("the result array is");

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

                    if(ar1[i]!=0)

                            System.out.print(ar1[i]+" ");


            }

            sc.close();

        }

}
```

o/p:-

enter the no of value for 1st array

4

enter the value

3 5 7 8

enter the no of value for 2nd array

4

enter the value

4 2 5 3

the result array is

3 5

Write a program to merge two array

```java
package onedimensionarry;

import java.util.Scanner;


public class MergeArray {


    public static int[]merge(int[]x,int[]y){

            int rs[]=new int[x.length+y.length];

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

                    rs[i]=x[i];


            }

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

                    rs[x.length+i]=y[i];

            }

            return rs;

    }


    int[]readArr(){

            Scanner sc=new Scanner(System.in);

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

```java
        int n=sc.nextInt();

        int ar[]=new int[n];

        System.out.println("enter  Elements of  Array ");

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

                ar[i]=sc.nextInt();

        }

        return ar;


}
//Display entered Array elements //

void dispArr(int ele[]){

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

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

                if(i<ele.length-1){

                        System.out.print(",");

                }

        }

        System.out.println();

}
```

```java
        public static void main(String[] args) {

                MergeArray ma=new MergeArray();


                int a[]=ma.readArr();

                System.out.print("Entered elements are :");

                ma.dispArr(a);

                int b[]=ma.readArr();

                System.out.print("Entered elements are :");

                ma.dispArr(b);

                System.out.println("Merged values are :");

                int c[]=ma.merge(a, b);

                ma.dispArr(c);


        }
}
```

o/p:-

Enter the size of array

3

enter Elements of Array

1 2 4

Entered elements are :1,2,4

Enter the size of array

3

enter Elements of Array

4 5

6

Entered elements are :4,5,6

Merged values are :

1,2,4,4,5,6

write a program for zigzag merge of two array

package onedimensionarry;

import java.util.Scanner;

public class MergeArray {

        public static int[]merge(int[]x,int[]y){

                int rs[]=new int[x.length+y.length];

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

                        rs[i]=x[i];

```java
        }

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

                rs[x.length+i]=y[i];

        }

        return rs;

}


int[]readArr(){

        Scanner sc=new Scanner(System.in);

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

        int n=sc.nextInt();

        int ar[]=new int[n];

        System.out.println("enter  Elements of  Array ");

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

                ar[i]=sc.nextInt();

        }

        return ar;


}
//Display entered Array elements //


void dispArr(int ele[]){
```

```java
        for(int i=0;i<ele.length;i++){

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

                if(i<ele.length-1){

                        System.out.print(",");

                }

        }

        System.out.println();

}




public static void main(String[] args) {

        MergeArray ma=new MergeArray();


        int a[]=ma.readArr();

        System.out.print("Entered elements are :");

        ma.dispArr(a);

        int b[]=ma.readArr();

        System.out.print("Entered elements are :");

        ma.dispArr(b);

        System.out.println("Merged values are :");

        int c[]=ma.merge(a, b);
```

```
                ma.dispArr(c);


        }
}
```

o/p:-

Enter the size of array

4

enter Elements of Array

2 3 4 5

Entered elements are :

2,3,4,5

Enter the size of array

3

enter Elements of Array

1 2 3

Entered elements are :

1,2,3

merged values are

2,3,4,5,1,2,3

Write the program to find biggest elements from array

```java
package onedimensionarry;


import java.util.Scanner;



public class NBiggest {

    static int nthBiggest(int a[]){

        int big=a[0];

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

            if( a[i]>big){

                return big=a[i];

            }

        }

        return big;


    }

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

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

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

        int ar[]=new int [n];

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

                ar[i]=sc.nextInt();

        }

        int value=nthBiggest(ar);

        System.out.println("biggest   "+value);

    }

}
```

o/p:-

Enter the no of array

5

Enter the elements

98 1 77 888 8

biggest   888

2d-array

Write a program to reverse elements of matrix

```java
package twodimensional;

import java.util.Scanner;

public class Rowreverse {
    //rowwise reverse
    static void rowreverse(int ar[][]){
        for(int i=0;i<ar.length;i++){
            for (int j = 0; j < ar[i].length/2; j++) {
                int t=ar[i][j];
                ar[i][j]=ar[i][ar[i].length-1-j];
                ar[i][ar[i].length-1-j]=t;

            }
        }
        for (int i = 0; i < ar.length; i++) {
            for (int j = 0; j < ar.length; j++) {
                System.out.print(ar[i][j]+" ");

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

```java
    }


//column reverse

static void columnreverse(int arr[][]){

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

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


        int t=arr[i][j];

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

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


    }

    }

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

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

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


        }

        System.out.println();

    }

    }
```

```java
public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int row=sc.nextInt();

        int column=sc.nextInt();

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

        int arr[][]=new int[row][column];

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

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

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


                }


        }
        System.out.println("Row Reverse");

        rowreverse(arr);

        System.out.println("column Reverse");

        columnreverse(arr);
}
}
```

o/p:-enter the array

2

2

enter the elements

22 33

44 55

Row Reverse

33 22

55 44

column Reverse

55 44

33 22

Write a program to find sum of Matrix

package twodimensional;

import java.util.Scanner;

public class Summatrix {

      static int[][]readmat(){

          Scanner sc=new Scanner(System.in);

```java
        System.out.println("enter row and column");

        int r=sc.nextInt();

        int c=sc.nextInt();

        int mat[][]=new int[r][c];

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

                //System.out.println("enter"+i+1+"row elements");

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


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

                }


        }

        return mat;


}
//display 2-d from user

static void disMat(int[][]x)

{

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

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


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

```java
            }
            System.out.println();
        }
    }
    static int[][] summat(int a[][],int b[][] ){
        if(a.length!=b[0].length || a[0].length!=b.length){
            System.out.println("next elements");
            return null;

        }
        int p[][]=new int[a.length][b[0].length];
        for (int i = 0; i < a.length; i++) {
            for (int j = 0; j < b[i].length; j++) {
                for (int k= 0; k < b.length; k++) {
                    p[i][j]=a[i][j]+b[i][j];



                }



            }
        return p;
```

```java
        }
        public static void main(String[] args) {
                Summatrix p=new Summatrix();
                System.out.println("enter 1st matrix");
                int[][] m1=p.readmat();
                System.out.println("1st matrix is ");
                p.disMat(m1);
                System.out.println("enter 2nd matrix");
                int[][] m2=p.readmat();
                System.out.println("2nd matrix is : ");
                p.disMat(m2);
                System.out.println("Sum of matrix is :");
                int res[][]=p.summat(m1, m2);
                p.disMat(res);

        }

}
```

o/p:-enter 1st matrix

enter row and column

2 2

2 4

3 5

1st matrix is

2 4

3 5

enter 2nd matrix

enter row and column

2 2

3 6

7 5

2nd matrix is :

3 6

7 5

Sum of matrix is :

5 10

10 10

Write a program to find product of matrix

package twodimensional;

```java
import java.util.Scanner;

public class ProductTwomatrix {

    static int[][]readmat(){

        Scanner sc=new Scanner(System.in);

        System.out.println("enter row and column");

        int r=sc.nextInt();

        int c=sc.nextInt();

        int mat[][]=new int[r][c];

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

            //System.out.println("enter"+i+1+"row elements");

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


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

            }


        }
        return mat;


    }
    //display 2-d from user
    static void disMat(int[][]x)
```

```java
{
	for (int i = 0; i < x.length; i++) {
		for (int j = 0; j < x[i].length; j++) {

			System.out.print(x[i][j]+" ");
		}
		System.out.println();
	}
}
static int[][] productmat(int a[][],int b[][] ){
	if(a.length!=b[0].length || a[0].length!=b.length){
		System.out.println("next elements");
		return null;

	}
	int p[][]=new int[a.length][b[0].length];
	for (int i = 0; i < a.length; i++) {
		for (int j = 0; j < b[i].length; j++) {
			for (int k= 0; k < b.length; k++) {
				p[i][j]=p[i][j]+a[i][j]*b[k][j];

			}
```

```java
                }

        }

        return p;

    }

    public static void main(String[] args) {

        ProductTwomatrix p=new ProductTwomatrix();

        System.out.println("enter 1st matrix");

        int[][] m1=p.readmat();

        p.disMat(m1);

        System.out.println("enter 2nd matrix");

        int[][] m2=p.readmat();

        p.disMat(m2);

        System.out.println("Display multiplication");

        int res[][]=p.productmat(m1, m2);

        p.disMat(res);

    }

}
```

o/p:-enter 1st matrix

enter row and column

2 2

3 4

4 5

3 4

4 5

enter 2nd matrix

enter row and column

2 2

3 5

6 7

3 5

6 7

Display multiplication

27 48

36 60

write a program to rotate and transpose a matrix

package twodimensional;

```java
import java.util.Scanner;

public class RotateandTranspose {
	static void transpose(int arr[][]){
		for (int i = 0; i < arr.length; i++) {
			for (int j = 0; j < arr[i].length; j++) {

				int t=arr[i][j];

				arr[i][j]=arr[j][i];

				arr[j][i]=t;

			}

		}
		for (int i = 0; i < arr.length; i++) {
			for (int j = 0; j < arr.length; j++) {
				System.out.print(arr[i][j]+" ");

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

```java
static void columnreverse(int arr[][]){

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

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


            int t=arr[i][j];

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

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


        }

    }

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

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

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


        }

        System.out.println();

    }

}


static void rowreverse(int ar[][]){

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

        for (int j = 0; j < ar[i].length/2; j++) {
```

```java
                int t=ar[i][j];

                ar[i][j]=ar[i][ar[i].length-1-j];

                ar[i][ar[i].length-1-j]=t;

            }

        }

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

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

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

            }

            System.out.println();

        }

    }

    static void rotate90left(int arr[][]){

        transpose(arr);

        System.out.println("rotate  90 left Matrix");

        columnreverse(arr);

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

    }


    static void rotate90right(int arr[][]){

        transpose(arr);
```

```java
        System.out.println("rotate 90 right Matrix");

        rowreverse(arr);

    }




public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        int row=sc.nextInt();

        int column=sc.nextInt();

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

        int arr[][]=new int[row][column];

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

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

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



                }



        }

        rotate90left(arr);

        rotate90right(arr);
```

```
        }
}
```

o/p:-

enter the array

2 2

enter the elements

3 65

7 9

3 65

7 9

rotate 90 left Matrix

7 9

3 65

====================

7 9

3 65

rotate 90 right Matrix

9 7

65 3

Write a program to rotate diagonal of matrix

package twodimensional;

import java.util.Scanner;

public class Rotatedigonal {

static void reverseDigonal(int arr[][]){

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

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



        if(i==j){

                int t=arr[i][j];

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

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

        }
        if(i+j==arr.length-1){

                int t=arr[i][j];

                arr[i][j]=arr[j][i];

                arr[i][j]=t;

        }
```

```java
        }

    }

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

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

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


                    }

                    System.out.println();

            }


    }

public static void main(String[] args) {

            Scanner sc=new Scanner(System.in);

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

            int row=sc.nextInt();

            int column=sc.nextInt();

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

            int arr[][]=new int[row][column];

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

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

                            arr[i][j]=sc.nextInt();
```

```
            }


        }

        System.out.println("Rotate diagonal value");

        reverseDigonal(arr);

}

}
```

o/p:-

enter the array

2 2

enter the elements

4 8

8 9

Rotate diagonal value

9 8

8 4

Write a program to find spiral of matrix

//java program to matrix element into spiral elements//

```java
package twodimensional;

import java.util.Scanner;

public class SpiralMatrix {
	static void spiralmat(int [][] ar){
		//int n=5;
		for (int i = 0,j=ar.length-1; i < j; i++,j--) {
			for (int k = i; k < j; k++) {
				System.out.print(ar[i][k]+" ");
			}
			System.out.println();
			for (int k = i; k < j; k++) {
				System.out.print(ar[k][j]+" ");
			}
			System.out.println();
			for (int k = j; k >i; k--) {
				System.out.print(ar[j][k]+" ");

			}
			System.out.println();
			for(int k=j;k>i;k--){
```

```java
                System.out.print(ar[k][i]+" ");
        }

        System.out.println();

        if(ar.length%2==1)

                System.out.print(ar[ar.length/2][ar.length/2]);

    }
}



public static void main(String[] args) {

        SpiralMatrix s=new SpiralMatrix();

        Scanner sc=new Scanner(System.in);

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

        int row=sc.nextInt();

        int column=sc.nextInt();

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

        int ar[][]=new int[row][column];

        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("Spiral matrix");

			s.spiralmat(ar);

		}


	}
```

o/p:-

enter the array

2 2

enter the elements

7 8

5 9

Spiral matrix

7

8

9

5

Write a program to find biggest shape

===============

Shape interface

================

```
package twodimensional;


public interface Shape {

double getArea();

}
```

================

Circle class

================

```
package twodimensional;


public class Circle implements Shape

{

        double r;



        public Circle(double r) {


                this.r = r;
```

```java
        }


        @Override

        public double getArea() {

                return 3.14*r*r;

        }

        @Override

        public String toString() {

                return "Circle [radius=" + r+" Area=  "+getArea() + "]";

        }


}
```

================

Reactangle class
================


```java
package twodimensional;


public class Reactangle implements Shape {

        double l;

        double b;
```

```java
        public Reactangle(double l, double b) {

                this.l = l;

                this.b = b;

        }


        @Override

        public double getArea() {

                return 2*l*b;


        }

        @Override

        public String toString() {

                return "Reactangle [length =" + l + ", breath =" + b +" Area =
"+getArea() + "]";

        }


}
```

Square class
==================

```java
package twodimensional;

public class Square implements Shape {

    double side;

    public Square(double side) {

        this.side = side;

    }


    @Override
    public double getArea() {

        return side*side;


    }
    @Override
    public String toString() {

        return "Square [ side = " + side+" Area = "+getArea()  + "]";

    }


}
```

mainrunner class
=================

```java
package twodimensional;

//java program to read store shape info and display biggest area shapeinfo.//


import java.util.ArrayList;

import java.util.Iterator;

import java.util.List;

import java.util.Scanner;


public class MainRunner  {

        static ArrayList<Shape> getShapes(){

                ArrayList<Shape> shapes=new ArrayList<Shape> ();

                Scanner sc=new Scanner(System.in);


                while(true){

                        Shape sh=null;

                        System.out.println("1.Circle\n2.Square\n3.Reactangle");

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

                        int ch=sc.nextInt();

                        switch(ch){
```

```java
case 1: System.out.println("Enter Radius :");

double r=sc.nextDouble();

sh=new Circle(r);

break;

case 2: System.out.println("Enter side :");

double side=sc.nextDouble();

sh=new Square(side);

break;

case 3: System.out.println("Enter side :");

double l=sc.nextDouble();

double b=sc.nextDouble();

sh=new Reactangle(l,b);

break;

default:

        System.out.println("No shape matched");

        sh=null;

        break;
}


if(sh!=null)

        shapes.add(sh);

System.out.println("do u have more shapes");
```

```java
                String s=sc.next();

                if(s.equalsIgnoreCase("no")){

                        break;

                }

        }

        return shapes;

}

private static Shape BiggestAreashape(List<Shape> ls){

        Shape b=ls.get(0);

        Iterator<Shape> it=ls.iterator();


        while(it.hasNext()){

                Shape s=it.next();

                if(b.getArea()<s.getArea())

                        b=s;

        }

        return b;


}


static void displayshape(List<Shape> ls){
```

```java
            for(Shape shape:ls){

                    System.out.println(shape);

            }


    }



    public static void main(String[] args) {

            List<Shape> ls =getShapes();

            Shape big=BiggestAreashape(ls);

            System.out.println("Shapes info :");

            displayshape(ls);

            System.out.println("biggest Area shape is:");

            System.out.println(big);


    }
}
```

o/p:-

1.Circle

2.Square

3.Reactangle

Enter shape no

1

Enter Radius :

5

do u have more shapes

yes

1.Circle

2.Square

3.Reactangle

Enter shape no

2

Enter side :

6

do u have more shapes

no

Shapes info :

Circle [radius=5.0 Area= 78.5]

Square [side = 6.0 Area = 36.0]

biggest Area shape is:

Circle [radius=5.0 Area= 78.5]

String Programs

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

```
import java.util.Scanner;


public class Anagram {

        static boolean isanagram(String st1,String st2){

                int count1[]=noofOccurence(st1);

                int count2[]=noofOccurence(st2);

                for (int i = 0; i < count1.length; i++) {

                        if(count1[i]!=count2[i])

                                return false;



                }

                return true;

        }
```

```java
static int[] noofOccurence(String st){

        int[]count=new int[26];


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

                char ch=st.charAt(i);

                if(ch>='A'&&ch<='Z'){

                        count[ch-65]++;

                }

                if(ch>='a'&&ch<='z'){

                        count[ch-97]++;

                }


        }

        return count;

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

        Anagram an=new Anagram();

        Scanner sc=new Scanner(System.in);

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

        String st1=sc.nextLine();

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

        String st2=sc.nextLine();
```

```java
            boolean bb=an.isanagram(st2, st1);

            if(bb)

                    System.out.println(st1+" and "+st2+" are anagram");

            else

                    System.out.println("not ");


    }


}
```

o/p:-

Enter first String

reverse

Enter second String

serever

reverse and serever are anagram

==

Write program weather the string is PANAGRAM or not?

Def: a sentence containing every letter of the alphabet

```java
import java.util.Scanner;


public class Panagram {

    static boolean ispanagram(String st){

        int[]count=new int[26];


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

            char ch=st.charAt(i);

            if(ch>='A'&&ch<='Z'){

                count[ch-65]++;

            }

            if(ch>='a'&&ch<='z'){

                count[ch-97]++;

            }


        }

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

            System.out.println((char)(i+65)+"--> "+count[i]);
```

```java
                if(count[i]==0)

                        return false;

        }

        return true;

    }

    public static void main(String args[])

    {

            Scanner sc=new Scanner(System.in);

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

            String s=sc.nextLine();

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


    }

}
```

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

```java
import java.util.Scanner;


public class Palindrom {

    static boolean ispalindrom(String st){
```

```java
        int i=0;

        while(i<st.length()/2){

                if(st.charAt(i)!=st.charAt(st.length()-1-i))

                        return false;

                i++;

        }

        return true;

}

public static void main(String args[])

{

        Scanner sc=new Scanner(System.in);

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

        String s=sc.nextLine();

        boolean str=ispalindrom(s);

        if(str)

                System.out.println(s+" is palindrom");

        else

                System.out.println(s+ " not palindrom");


}
}
```

o.p:-

Enter the sentence.

qwerty ytrewq

qwerty ytrewq is palindrom

Write a program to display REVERSE of a STRING/SENTENCE?

```java
import java.util.Scanner;

public class ReverseString {
public static void main(String args[])
        {
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter the sentence.");
                String s=sc.nextLine();
                System.out.println("Aftr conversion");
                String str=reverseSentence(s);
                System.out.println(str);
```

```java
        }

        public static String reverseSentence(String st) {

                char ch[]=st.toCharArray();

                st=" ";

                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){

                                st=st+ch[j];

                                j++;

                        }

                        if(i>0)

                                st=st+ch[i];

                }

                return st;

        }

}
```

o/p:

Enter the sentence.

qwerty id

Aftr conversion

 id qwerty

Write a program to display REVERSE of a Word?

import java.util.Scanner;

public class ReverseWord {

    public static void main(String args[])

    {

        Scanner sc=new Scanner(System.in);

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

        String s=sc.nextLine();

        System.out.println("Aftr conversion");

        String str=reversewordSentence(s);

        System.out.println(str);

    }

    public static String reversewordSentence(String st) {

```java
        char ch[]=st.toCharArray();

        st=" ";

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

                int k=i;

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

                        i++;

                }

                int j=i-1;

                while(j>=k){

                        st=st+ch[j];

                        j--;

                }

                if(i<ch.length)

                        st=st+ch[i];

        }

        return st;

    }

}
```

o/p:-

Enter the sentence.

qwertty

Aftr conversion

 yttrewq

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

import java.util.Scanner;

```java
public class CountCharacter {

    static int countchar(String st){

        int count=0;

        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++;


        }

        return count;

    }

    public static void main(String[] args) {

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

```java
            System.out.println("Enter the word");

            String st=sc.nextLine();

            int chr=countchar(st);

            System.out.println("total no charcters = "+chr);


        }

}
```

o/p:-

Enter the word

qwerty

total no charcters = 6

Write a program to COUNT number of WORDS in a String?


```java
import java.util.Scanner;


public class CountWord {

        static int countWords(String st){

                int wc=0;

                char ch[]=st.toCharArray();
```

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

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

                        wc++;


        }

        return wc;

    }

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        String st=sc.nextLine();

        int chr=countWords(st);

        System.out.println("total no word = "+chr);


    }
}
```

O/P:-Enter the word

QWERTY ID IS NON

total no word = 4

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

```java
import java.util.Scanner;


public class Sumofdigit {

    static int sumOfDigit(String st){

        int sum=0;

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

            char ch=st.charAt(i);

            if(ch>=48 &&ch<=57){

                sum=sum+(ch-48);

            }

        }

        return sum;

    }

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

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

        String st=sc.nextLine();

        int sm=sumOfDigit(st);
```

```
                System.out.println("Total sum is "+sm);



        }


}



O/P:-

Enter the word

Q1W2E3R45T

Total sum is 15
```

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

```
import java.util.Scanner;


public class CountingString {

        public static void main(String[] args) {

                Scanner scn=new Scanner(System.in);

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

                String st=scn.nextLine();
```

```java
//ac=alphabets;

//vc=vowels;

//cc=consonents

//dc=degits

//uc=upper case

//lc=lower case

//sc=special character

int ac=0,vc=0,cc=0,dc=0,uc=0,lc=0,sc=0;

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

        char ch=st.charAt(i);

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

                ac++;

                uc++;

                if(ch=='A'||ch=='E'||ch=='I'||ch=='O'||ch=='U')


                        vc++;

                else

                        cc++;

        }
        else if(ch>='a'&&ch<='z'){

                ac++;

                lc++;
```

```java
            if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u')

                    vc++;

            else

                    cc++;

        }

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

                dc++;


        else

                sc++;

    }

    System.out.println("no of alphabets ="+ac);

    System.out.println("no of degits ="+dc);

    System.out.println("Total upper case="+uc);

    System.out.println("total lower case="+lc);

    System.out.println("total vowels ="+vc);

    System.out.println("total consonents"+cc);

    System.out.println("total special characters = "+sc);

    }


}
```

O/P:-

Enter the Sentence

QWERTT Y KM

no of alphabets = 9

no of degits = 0

Total upper case= 9

total lower case = 0

total vowels = 1

total consonents = 8

total special characters = 2

Write a program to convert NUMBER into WORDS?

```java
import java.util.Scanner;


import twodimensional.MainRunner;


public class NointoWords {


       String one[]={"
","one","two","three","four","five","Six","Seven","Eight","Nine","Ten","Eleven","T
```

welve","thirteen","fourteen","fifteen","Sixteen","Seventeen","Eightteen","Nineteen"};

String two[]={" ","
","Twenty","thirty","fouty","fifty","Sixty","Sevety","Eighty","ninty"};

```java
void ntow(int n,String st){
        if(n<20)
                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) {
            NointoWords nw=new NointoWords();

            Scanner sc=new Scanner(System.in);
            System.out.println("Enter the no");
```

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


        nw.ntow(n/10000000,"crore");

        nw.ntow(n/100000%100,"lakh");

        nw.ntow(n/1000%100,"Thousand");

        nw.ntow(n/100%10,"hundred");

        nw.ntow(n%100," ");

    }

}
```

O/P:-

Enter the no

145

  onehundred foutyfive

Write a program to display STRING INITCAP of Words?


```
import java.util.Scanner;


public class ConvertFirstCapital {
```

```java
static String initcap(String st){

        char ch[]=st.toCharArray();

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

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


                        if(ch[i]>='a'&&ch[i]<='z'){

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

                        }

                }

                else{

                        if(ch[i]>='A'&&ch[i]<='Z'){

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

                        }

                }

        }

        st=new String(ch);

        return st;

}

public static void main(String args[])

{

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter the sentence.");
```

```java
        String s=sc.nextLine();


        System.out.println("Aftr conversion");

        String str=initcap(s);

        System.out.println(str);


    }


}
```

O/P:-

Enter the sentence.

RANMDND

Aftr conversion

Ranmdnd

Write a program to convert UPPER CASE TO LOWER CASE?


```java
import java.util.Scanner;
```

```java
public class ConvertLowercase {

        String toLowerCase(String str)

        {

                char ch[]=str.toCharArray();

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

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

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

                        }


                }

                String st=new String(ch);//Character array to String

                return st;



        }



        String tolowercase(String str){

                String ls="";

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

```java
            char ch=str.charAt(i);

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

                    ch=(char) (ch+32);

            }

            ls=ls+ch;

        }

        return ls;

}


public static void main(String[] args) {

        ConvertLowercase lc=new ConvertLowercase();

        Scanner sc=new Scanner(System.in);

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

        String sd=sc.nextLine();

        String s=lc.tolowercase(sd) ;

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

        String sd1=sc.nextLine();

        String st=lc.toLowerCase(sd1) ;

        System.out.println(s);

        System.out.println(st);

}
```

}

O/P:-

Enter the Word

QWERT

Enter the Word

REWQ

qwert

rewq

Write a program to convert LOWER CASE TO UPPER CASE ?

```java
import java.util.Scanner;

public class ConvertUppercase {

        String touppercase(String str){

                String ls="";

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

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

```java
            if(ch>=97&&ch<=122){

                    ch=(char) (ch-32);

            }

            ls=ls+ch;

        }

        return ls;

    }


    public static void main(String[] args) {

        ConvertUppercase uc=new ConvertUppercase();

        Scanner sc=new Scanner(System.in);

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

        String st=sc.nextLine();

        String s=uc.touppercase(st) ;

        System.out.println("the uppercase of "+st+" is "+s);


    }
}
```

O/P:-

Enter the word

qwerty

the uppercase of qwerty is QWERTY

write a program to search the word

```java
import java.util.Scanner;

public class WordSearch

{

public static void main(String[] args)

{

        Scanner sc= new Scanner(System.in);

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

        String st=sc.nextLine();

        System.out.println("Enter the word to search: ");

        String w=sc.next();

        boolean rs= checkWord(st,w);

        if(rs)

                System.out.println("yes  word is there ");

        else

                System.out.println("no  word is not there ");

}
```

```java
private static boolean subStr(String st, String w)

{

        char c1[]=st.toCharArray();

        char c2[]=w.toCharArray();


        for(int i=0;i<c1.length;i++)

        {

                int j=0;

                int k=i;

                while(k<c1.length&&j<c2.length&&c1[k]==c2[j])

                {

                        k++;

                        j++;

                }

                if(j==c2.length)

                        return true;

        }

        return false;

}

private static int countsubStr(String st, String w)

{
```

```java
        char c1[]=st.toCharArray();

        char c2[]=w.toCharArray();

        int count=0;

        for(int i=0;i<c1.length;i++)

        {

                int j=0;

                int k=i;

                while(k<c1.length&&j<c2.length&&c1[k]==c2[j])

                {

                        k++;

                        j++;

                }

                if(j==c2.length)

                        count++;

        }

        return count;

}


private static int indexsubStr(String st, String w)

{

        char c1[]=st.toCharArray();

        char c2[]=w.toCharArray();
```

```java
        int count=0;

        for(int i=0;i<c1.length;i++)

        {

                int j=0;

                int k=i;

                while(k<c1.length&&j<c2.length&&c1[k]==c2[j])

                {

                        k++;

                        j++;

                }

                if(j==c2.length)

                        return i;

        }

        return -1;

}


private static int indexsubStr(String st, String w,int oc)

{

        char c1[]=st.toCharArray();

        char c2[]=w.toCharArray();

        int count=0;

        for(int i=0;i<c1.length;i++)
```

```
{
        int j=0;

        int k=i;

        while(k<c1.length&&j<c2.length&&c1[k]==c2[j])

        {

                k++;

                j++;

        }

        if(j==c2.length)

        {

                count++;

                if(count==oc)

                        return i;

        }


    }
    return -1;
}
```

```java
private static boolean checkWord(String st, String w)

{

        char c1[]=st.toCharArray();

        char c2[]=w.toCharArray();


        for(int i=0;i<c1.length;i++)

        {

                int j=0;

                int k=i;

                while(k<c1.length&&j<c2.length&&c1[k]==c2[j])

                {

                        k++;

                        j++;

                }

                if(j==c2.length&&(i==0||c1[i-1]==' ')&&(k==c1.length||c1[k]==' '))

                        return true;

        }

        return false;

}


}
```

o/p:-

Enter the sentence

qwerty u tyu

Enter the word to search:

tyu

yes word is there

Write a program to count nodays ,years ,month bw given dates

import java.nio.charset.MalformedInputException;

import java.util.Scanner;

public class Date {

      int dd,mm,yy;

      int month[]={0,31,28,31,30,31,30,31,31,30,31,30,31};

      public Date(int dd, int mm, int yy) {

          this.dd = dd;

          this.mm = mm;

          this.yy = yy;

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

```java
                month[2]=29;

    }


int countnodays(){

        int y=yy-1;

        int days=0;

        days=y*365;

        days=days+(y/4-y/100+y/400);

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

                days=days+month[i];

        }

        days=days+dd;

        return days;



    }
static Date readdate(){

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter dd mm yyyy");

        int dd=sc.nextInt();

        int mm=sc.nextInt();

        int yy=sc.nextInt();
```

```java
                Date d=new Date(dd,mm,yy);

                return d;


        }


        @Override

        public String toString() {

                return "Date [" + dd + "/" + mm + "/" + yy + "]";

        }

        public static void main(String[] args) {

                System.out.println("enter first date :");

                Date d1=Date.readdate();

                System.out.println("Enter 2nd date :");

                Date d2=Date.readdate();


                int days=d2.countnodays()-d1.countnodays();


                System.out.println("no of days between"+d1+" and "+d2+" is
"+days);

                System.out.println("total year,months till  dates "+days/365+"
"+days%365/30);

                System.out.println("no of years between"+d1+" and "+d2+" is
"+days/365);
```

```
        }
}
```

output

enter first date :

Enter dd mm yyyy

03 02 1997

Enter 2nd date :

Enter dd mm yyyy

02 03 1998

no of days betweenDate [3/2/1997] and Date [2/3/1998] is 392

total year,months till dates 1 0

no of years betweenDate [3/2/1997] and Date [2/3/1998] is 1