

CERTIFIED ASSOCIATE JAVA PROGRAMMER



HANDBOOK

JAVA PROGRAMS

Display odd numbers between 1 -100

```
class OddNumber {
    public static void main(String args[]) {
        System.out.println("The Odd Numbers are:");
        for (int i = 1; i <= 100; i++) {
            if (i % 2 != 0) {
                System.out.print(i + " ");
            }
        }
    }
}
```

Sum of odd numbers between 1 -100

```
class SumOfNum
{
    public static void main(String args[])
    {
        int sum = 0;
        for (int i = 1; i <= 100; i++)
        {
            if (i % 2 != 0)
            {
                sum = sum + i;
            }
        }
        System.out.println("The Sum Of 100 Odd Numbers are:" + sum);
    }
}
```

Total number of odd numbers between 1 -100

```
class TotalNumOfOddNum
{
    public static void main(String args[])
    {
        int count = 0;
        for(int i = 1;i <= 100;i++)
        {
            if(i % 2 != 0)
            {
                count++;
            }
        }
        System.out.println("The Count Of Odd Numbers are:" + count);
    }
}
```

Find sum of first n numbers

```
class SumOfNum
{
    public static void main(String args[])
    {
        int sum = 0;
        int n=10;
        for(int i = 1;i <= n;i++)
        {
            sum = sum + i;
        }
        System.out.println("The Sum Of "+n+" Numbers are:" + sum);
    }
}
```

Find the sum of the digits of a number

```
public class DigitsSum
{

    public static void main(String[] args)
    {
        int num=251025, rem = 0, sum = 0, temp;
        temp = num;

        while (num > 0)
        {
            rem = num % 10;
            sum = sum + rem;
            num = num / 10;
        }

        System.out.print("Sum of Digits of " + temp + " is " + sum);
    }
}
```

Calculate electricity bill

```
public class ElectricBill
{
    public static void main(String args[])
    {
        int units = 123;
        int bill = 0;

        if (units > 100)
        {
            if (units >= 200)
            {
                if (units > 300)
                {
                    bill = units * 8;
                }
            }
            else
            {
                bill = units * 5;
            }
        }
    }
}
```

```

        bill = units * 6;
    }
    else
        bill = units * 5;
}

System.out.println("CHENNAI ELECTRICITY LTD, CHENNAI");
System.out.println("Units Consumed : " + units);
System.out.println("Total Bill : " + bill);
}
}

```

Java program to find Armstrong number

```

public class ArmstrongNumber
{
    public static void main(String args[])
    {
        int n, arg, sum = 0, r;

        n = 153; // input value
        arg = n;
        for (int i = 1; i < n; i++)
        {
            while (n > 0)
            {
                r = n % 10;
                sum = sum + (r * r * r);
                n = n / 10;
            }

        }
        if (arg == sum)
        {
            System.out.println("Given number is armstrong number: " + arg);
        }
        else
        {
            System.out.println("Given number is not armstrong number: " + arg);
        }
    }
}

```

Program to print Armstrong number between 1 to 1000

```

public class ArmstrongNumbers
{
    public static void main(String[] args)
    {
        int num, rem, limit=1000, sum = 0;
        System.out.print("Armstrong numbers from 1 to N:");
        for (int i = 1; i <= limit; i++)

```

```

        {
            num = i;
            while (num > 0)
            {
                rem = num % 10;
                sum = sum + (rem*rem*rem);
                num = num / 10;
            }

            if (sum == i)
            {
                System.out.print(i + " ");
            }
            sum = 0;
        }
    }
}

Print given number in words
public class NumberToWords
{
    public void pw(int n, String ch)
    {
        String one[] = { " ", " One", " Two", " Three", " Four", " Five", " Six", " Seven", " Eight", " Nine", " Ten", " Eleven", " Twelve", " Thirteen", " Fourteen", "Fifteen", " Sixteen", " Seventeen", " Eighteen", " Nineteen" };

        String ten[] = { " ", " ", " Twenty", " Thirty", " Forty", " Fifty", " Sixty", "Seventy", " Eighty", " Ninety" };

        if (n > 19)
        {
            System.out.print(ten[n / 10] + " " + one[n % 10]);
        }
        else
        {
            System.out.print(one[n]);
        }
        if (n > 0)
            System.out.print(ch);
    }

    public static void main(String[] args)
    {
        int n=28;
        System.out.print(n);
        if (n <= 0)
        {

```

```

        System.out.println("Enter numbers greater than 0");
    }
    else
    {
        NumberToWords a = new NumberToWords();
        a.pw((n / 1000000000), " Hundred");
        a.pw((n / 100000000) % 100, " crore");
        a.pw(((n / 100000) % 100), " lakh");
        a.pw(((n / 1000) % 100), " thousand");
        a.pw(((n / 100) % 10), " hundred");
        a.pw((n % 100), " ");
    }
}
}

Program to check the given number is Palindrome or not
public class PalindromeNumberCheck
{
    public static void main(String[] args)
    {
        int n=121,pal,r,rev=0;
        pal = n;

        while (n > 0)
        {
            r = n % 10;
            rev = rev * 10 + r;
            n = n / 10;
        }

        if (rev == pal)
        {
            System.out.println(" The given no is  palindrome "+ rev);
        }
        else
        {
            System.out.println("The given no is not palindrome " + rev);
        }
    }
}

Program to print palindrome number upto N numbers
public class PalindromeUptoN
{
    public static void main(String[] args)
    {
        int n, b, rev = 0;
        int limit=50;

```

```

        System.out.print("Palindrome numbers from 1 to N:");
        for (int i = 1; i <= limit; i++)
        {
            n = i;
            while (n > 0)
            {
                b = n % 10;
                rev = rev * 10 + b;
                n = n / 10;
            }
            if (rev == i)
            {
                System.out.print(i + " ");
            }
            rev = 0;
        }
    }
}

```

Program to print N prime numbers and find sum and average

```

public class PrimeNumberUptoN
{
    public static void main(String[] args)
    {
        int num =0, i =0;
        System.out.println("Prime numbers from 1 to 100 are :");
        for (i = 1; i <= 100; i++)
        {
            int counter=0;
            for(num =i; num>=1; num--)
            {
                if(i%num==0)
                {
                    counter = counter + 1;
                }
            }
            if (counter ==2)
            {
                System.out.print(i+" ");
            }
        }
    }
}

```

Program to print patterns of numbers and stars

```

*
* *
* * *
* * * *

```

```

public class PyramidPattern1
{
    public static void main(String[] args)
    {
        int n=4;
        for(int i=0;i<n;i++)
        {
            System.out.println("\n");
            for(int j=0;j<=i;j++)
            {
                System.out.print(" * ");
            }
        }
    }
}

```

```

      *
     * *
    * * *
   * * * *
  * * * * *

```

```

public class PyramidPattern2
{
    public static void main(String args[])
    {
        int i, j, k=8;
        for(i=0; i<5; i++)
        {
            for(j=0; j<k; j++)
            {
                System.out.print(" ");
            }
            k = k - 2;
            for(j=0; j<=i; j++)
            {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}

```

```

*****
*****
*****
*****
*****

```



```
* * *      * * *
* *        * *
*          *
*         *
* *       * *
* * *    * * *
* * * *  * * * *
* * * * * * * * *
* * * * * * * *
* * * * * * * *
* * * * * * * *
* * * * * * * *
```

```

public class DifferentPatternPrograms1
{
    public static void main(String args[])
    {
        int n,i,j,k,l,m,p,q,r,s;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the n values");
        n=sc.nextInt();
        p=n;
        q=n;
        for(i=n;i>=1;i--)
        {
            for(j=1;j<=i;j++)
            {
                System.out.print("*");
            }
            for(k=p*2;k<n*2-1;k++)
            {
                System.out.print(" ");
            }
            for(l=i;l!=0;l--)
            {
                if(l==n)
                {
                    continue;
                }
                System.out.print("*");
            }
            p--;
            System.out.println();
        }
        for(i=1;i<=n;i++)
        {
            for(j=1;j<=i;j++)
            {
                System.out.print("*");
            }
            for(k=q*2-2;k>1;k--)

```

```

        {
            System.out.print(" ");
        }
        for(m=i;m!=0;m--)
        {
            if(m==n)
            {
                continue;
            }
            System.out.print("*");
        }
        System.out.println();
        q--;
    }
}

```

Print Floyds triangle

import java.util.Scanner;

class FloydsTriangle

```

{
    public static void main(String args[])
    {
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter the number of rows\n");

        int rows = scan.nextInt();
        System.out.println("Floyd's Triangle Generated\n");
        int count = 1;
        for ( int i = 1 ; i <= rows ; i++ )
        {
            for ( int j = 1 ; j <= i ; j++ )
            {
                System.out.print(count+" ");

                count++;
            }

            System.out.println();
        }
    }
}

```

```

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21

```

Print numbers in sequence way

```
public class PatternNumberSequence
```

```
{
    public static void main(String[] args)
    {
        int a = 3;
        int b = 4;
        int n = 8;

        for (int i = 1; i <= n; i++)
        {
            int c = a + b;
            System.out.print(a + " " + b + " " + c);
            System.out.println(" ");
            a = c;
            b = b + 1;
        }
    }
}
```

```
3 4 7
```

```
7 5 12
```

```
12 6 18
```

```
18 7 25
```

```
25 8 33
```

```
33 9 42
```

```
42 10 52
```

```
52 11 63
```

Print numbers in triangle and pyramid vice

```
1
```

```
121
```

```
12321
```

```
1234321
```

```
123454321
```

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

```
public class PatternNuberPyramidPrevRev
```

```
{
    public static void main(String args[])
    {
        int s = 1;
        int n;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the N values");
        n = sc.nextInt();
        for (int i = 1; i <= n; i++)
        {
            while (s <= i)
            {
                System.out.print(s);
                s++;
            }
        }
    }
}
```

```

        }
        s--;
        while (s > 1)
        {
            System.out.print(--s);

        }
        System.out.println();
    }
}

```

```

1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

```

```

public class PatternNumberPyramidUptoN
{
    public static void main(String args[])
    {
        {
            int i, j, n = 1;
            for (i = 0; i < 5; i++)
            {
                for (j = 0; j <= i; j++)
                {
                    System.out.print(n + " ");
                    n++;
                }
                System.out.println();
            }
        }
    }
}

```

```

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

```

```

import java.util.Scanner;

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

```

```

{

    int i, j, n;

    Scanner sc = new Scanner(System.in);
    System.out.println("Enter the Row value n");
    n = sc.nextInt();
    for (i = 1; i <= n; i++)
    {
        for (j = 1; j <= i; j++)
            System.out.print(" " + j);
        System.out.print("\n");
    }
}

```

Print numbers in pyramid vice

```

import java.util.Scanner;
public class PatternNumberPyramidArrow
{
    public static void main(String args[])
    {
        int i, j, n;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the values ");
        n = sc.nextInt();
        for (i = 1; i <= n; i++)
        {
            for (j = 1; j <= i; j++)
                System.out.print(" " + j);
            System.out.print("\n");
        }
        for (i = n - 1; i >= 1; i--)
        {
            for (j = 1; j <= i; j++)
                System.out.print(" " + j);
            System.out.print("\n");
        }
    }
}

```

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

```

import java.util.Scanner;
public class PatternNumberPyramidRev
{
    public static void main(String args[])
    {
        int i, j, k, n, a;

        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the n values");
        n = sc.nextInt();
        a = n;
        for (i = 1; i <= n; i++)
        {
            for (j = a; j > 1; j--)
            {
                System.out.print(" ");
            }
            for (k = i; k != 0; k--)
            {
                System.out.print(k);

            }
            a--;

            for (int l = 2; l <= i; l++)
            {
                System.out.print(l);

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

```

```

    1
   212
  32123
 4321234
543212345

```

Print different patterns using stars

**

*

```

import java.util.Scanner;
public class Star1
{
    public static void main(String args[])
    {

```

```

        int i, j, t;
        System.out.println("How many row you want ");
        Scanner sc = new Scanner(System.in);
        t = sc.nextInt();
        for (j = 0; j < t; j++)
        {
            for (i = t - 1; i >= j; i--)
            {
                System.out.print("*");

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

```

```

*   *
**  **
*****

```

```

public class Star3
{
    public static void main(String[] x)
    {
        int i, j, k, n = 3;
        for (i = 0; i < n; i++)
        {
            for (j = 0; j <= i; j++)
            {
                System.out.print("*");
            }
            for (j = (n - i); j >= 2; j--)
            {
                System.out.print(" ");
            }
            for (k = i; k >= 0; k--)
            {
                System.out.print("*");
            }
            System.out.println();
        }
    }
}

```

```

*
***
*****
*****
*****
*****
*****
***
*

```

Print pyramid triangle with star and numbers

```
public class Star10
{

    public static void main(String args[])
    {
        int i, j, k;
        for (i = 1; i <= 5; i++)
        {
            for (j = i; j < 5; j++)
            {
                System.out.print(" ");
            }
            for (k = 1; k < (i * 2); k++)
            {
                System.out.print("*");
            }
            System.out.println("");
        }
        for (i = 4; i >= 1; i--)
        {
            for (j = 5; j > i; j--)
            {
                System.out.print(" ");
            }
            for (k = 1; k < (i * 2); k++)
            {
                System.out.print("*");
            }
            System.out.println("");
        }
    }
}
```

Program to find largest number in an array

```
class LargestNumber
{
    public static void main(String args[])
    {
        int[] a = new int[] { 20, 30, 50, 4, 71, 100};
        int max = a[0];
        for(int i = 1; i < a.length;i++)
        {
            if(a[i] > max)
            {
                max = a[i];
            }
        }

        System.out.println("The Given Array Element is:");
        for(int i = 0; i < a.length;i++)
```



```

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

        System.out.println("From The Array Element Largest Number is:" + max);
    }
}

```

Program to find second largest number in an array

```

public class SecondLargest {

    public static void main(String[] args) {

        int arr[] = { 14, 46, 47, 86, 92, 52, 48, 36, 66, 85 };
        int largest = arr[0];
        int secondLargest = arr[0];

        System.out.println("The given array is:" );
        for (int i = 0; i < arr.length; i++) {
            System.out.print(arr[i]+"\\t");
        }
        for (int i = 0; i < arr.length; i++) {

            if (arr[i] > largest) {
                secondLargest = largest;
                largest = arr[i];

            } else if (arr[i] > secondLargest) {
                secondLargest = arr[i];
            }

        }

        System.out.println("\\nSecond largest number is:" + secondLargest);

    }
}

```

Find largest and smallest number in an array in java

```

public class LargestSmallest
{
    public static void main(String[] args)
    {
        int a[] = new int[] { 23, 34, 13, 64, 72, 90, 10, 15, 9, 27 };

        int min = a[0]; // assume first elements as smallest number
        int max = a[0]; // assume first elements as largest number

        for (int i = 1; i < a.length; i++) // iterate for loop from arrays 1st index (second
element)
        {
            if (a[i] > max)
            {

```

```

        max = a[i];
    }
    if (a[i] < min)
    {
        min = a[i];
    }
}

System.out.println("Largest Number in a given array is : " + max);
System.out.println("Smallest Number in a given array is : " + min);
}

```

```

}

```

Program to find largest and second largest in an array

```

public class LargestAndSecondLargest
{
    public static void main(String[] args)
    {
        int nums[] = { 5, 34, 78, 2, 45, 1, 99, 23 };
        int maxOne = 0;
        int maxTwo = 0;
        for (int i=0;i<nums.length; i++)
        {
            if (maxOne < nums[i])
            {
                maxTwo = maxOne;
                maxOne = nums[i];
            }
            else if (maxTwo < nums[i])
            {
                maxTwo = nums[i];
            }
        }
        System.out.println("Largest Number: " + maxOne);
        System.out.println("Second Largest Number: " + maxTwo);
    }
}

```

Find the index of the largest number in an array

```

public class LargestNumberIndex
{
    public static void main(String[] args)
    {
        int a[] = new int[] { 12, 44, 23, 56, 23, 78, 13 };

        int max = a[0];
        int index = 0;

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

```

```

        if (max < a[i])
        {
            max = a[i];
            index = i;
        }
    }

    System.out.println("Index position of Maximum value in an array is : " +
index);
} }

```

Find the index of the smallest number in an array

```

public class SmallestNumberIndex
{
    public static void main(String[] args) {
        int a[] = new int[]{12,44,23,56,9,23,78,13};

        int min = a[0];
        int index=0;

        for(int i = 0; i < a.length; i++)
        {
            if(min > a[i])
            {
                min = a[i];
                index=i;
            }
        }

        System.out.println("Index position of Smallest value in a given array is :
"+index);
    }
}

```

Program to remove duplicate element in an array

```

public class RemoveDuplicateElements
{
    public static int[] removeDuplicates(int[] input)
    {
        int j = 0;
        int i = 1;
        // return if the array length is less than 2
        if (input.length < 2)
        {
            return input;
        }
        while (i < input.length)
        {
            if (input[i] == input[j])
            {
                i++;
            }
        }
    }
}

```

```

        else
        {
            input[++j] = input[i++];
        }
    }
    int[] output = new int[j + 1];
    for (int k = 0; k < output.length; k++)
    {
        output[k] = input[k];
    }
    return output;
}

public static void main(String a[])
{
    int[] input1 = { 2, 3, 6, 6, 8, 9, 10, 10, 10, 12, 12 };
    int[] output = removeDuplicates(input1);

    System.out.print("Input Elements: \n");
    for (int i : input1)
    {
        System.out.print(i + " ");
    }
    System.out.print("\nOutput Elements: \n");
    for (int i : output)
    {
        System.out.print(i + " ");
    }
}

```

Program to print odd and even numbers from an array

```

public class OddEvenArray
{
    public static void main(String args[])
    {
        int s, i;

        int[] a = { 33, 2, 4, 71, 88, 92, 9, 1 };

        for (i = 0; i < a.length; i++)
        {
            for (int j = i + 1; j < a.length; j++)

            {
                if (a[i] > a[j])
                {
                    s = a[i];
                    a[i] = a[j];
                    a[j] = s;
                }
            }
        }
    }
}

```

```

        }

    }

    System.out.print("Input numbers :");

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

    {

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

    }

    System.out.print("\nOdd numbers :");

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

        if (a[i] % 2 != 0)
        {

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

        }

    }

    System.out.print("\nEven numbers :");

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

    {

        if (a[i] % 2 == 0)
        {

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

        }

    }

}

```

```

}

```

Program to add two matrix

```

class MatrixAddition

```

```

{
    public static void main(String args[])
    {
        int[][] a = new int[][] { { 1, 2, 3},{ 4, 5, 6},{ 7, 8, 9} };
    }
}

```

```
int[][] b = new int[][] { { 10, 11, 12},{ 13, 14, 15},{ 16, 17, 18} };
int[][] c = new int[3][3];
```

```
if(a.length == b.length && a[0].length == b[0].length)
{
    for(int i = 0;i < a.length;i++)
    {
        for(int j = 0;j < a[i].length;j++)
        {
            c[i][j] = a[i][j] + b[i][j];
        }
    }
}
else
{
    System.out.println("'A' and 'B' Matrix are not SAME");
    return;
}
```

```
System.out.println("The Matrix 'A' Value:");
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();
}
```

```
System.out.println("The Matrix 'B' Value:");
for(int i = 0;i < a.length;i++)
{
    for(int j = 0;j < a[i].length;j++)
    {
        System.out.print(b[i][j]+ " ");
    }
    System.out.println();
}
```

```
System.out.println("The Addition Matrix of 'A' and 'B' Value:");
for(int i = 0;i < a.length;i++)
{
    for(int j = 0;j < a[i].length;j++)
    {
        System.out.print(c[i][j] + " ");
    }
    System.out.println();
}
}
```

Program to check given matrix is null matrix

class NullMatrix

```
{
    public static void main(String args[])
    {
        int[][] a = new int[][] { { 0, 0, 0},{ 0, 0, 1},{ 0, 0, 0} };
        boolean setValue = true;

        abc: for(int i = 0;i < a.length;i++)
        {
            for(int j = 0;j < a[i].length;j++)
            {
                if(a[i][j] != 0)
                {
                    setValue = false;
                    break abc;
                }
            }
        }

        System.out.println("The Given Matrix Value:");
        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();
        }

        if(setValue == true)
        {
            System.out.println("The Given Matrix is a Null Matrix");
        }
        else
        {
            System.out.println("The Given Matrix is not a Null Matrix");
        }
    }
}
```

Program to check given matrix is diagonal matrix

class DiagonalMatrix

```
{
    public static void main(String args[])
    {
        int[][] a = new int[][] { { 1, 0, 1},{ 0, 3, 0},{ 0, 0, 3} };
        boolean setValue = true;
        abc: for(int i = 0;i < a.length;i++)
        {
            for(int j = 0;j < a[i].length;j++)
            {
```

```

        if(i == j)
        {
            if(a[i][j] == 0)
            {
                setValue = false;
                break abc;
            }
        }
        else if(a[i][j] != 0)
        {
            setValue = false;
            break abc;
        }
    }
}

System.out.println("The Given Matrix Value:");
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();
}

if(setValue == true)
{
    System.out.println("The Given Matrix is a Diagonal Matrix");
}
else
{
    System.out.println("The Given Matrix is not a Diagonal Matrix");
}
}
}

```

Program for Linear search

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

```
class LinearSearch
```

```

{
    public static void main(String args[])
    {
        int i, num, searchval, array[];

        Scanner in = new Scanner(System.in);
        System.out.println("Enter number of elements");
        num = in.nextInt();

        array = new int[num];
        System.out.println("Enter " + num + " integers");
    }
}

```



```

        for (i = 0; i < num; i++)
            array[i] = in.nextInt();

        System.out.println("Enter the search value:");
        searchval = in.nextInt();

        in.close();
        for (i = 0; i < num; i++)
        {
            if (array[i] == searchval)
            {
                System.out.println(searchval + " is present at location " + (i + 1));
                break;
            }
        }
        if (i == num)
            System.out.println(searchval + " is not exist in array.");
    }
}

```

Program for Binary Search

```

import java.util.Scanner;
public class BinarySearch
{
    public static void main(String args[])
    {
        int counter, num, item, array[], first, last, middle;
        Scanner input = new Scanner(System.in);
        System.out.println("Enter number of elements:");
        num = input.nextInt();

        array = new int[num];

        System.out.println("Enter " + num + " integers");
        for (counter = 0; counter < num; counter++)
            array[counter] = input.nextInt();

        System.out.println("Enter the search value:");
        item = input.nextInt();
        first = 0;
        last = num - 1;
        middle = (first + last) / 2;

        while (first <= last)
        {
            if (array[middle] < item)
                first = middle + 1;
            else if (array[middle] == item)
            {
                System.out.println(item + " found at location " + (middle + 1) + ".");
                break;
            }
        }
    }
}

```

```

        }
        else
        {
            last = middle - 1;
        }
        middle = (first + last) / 2;
    }
    if (first > last)
        System.out.println(item + " is not found.\n");
}
}

```

Program to calculate HCF and LCM

```

public class FindHCFAndLCM
{
    public static void main(String args[])
    {
        int a, b, x, y, t, hcf, lcm;
        x = 6;
        y = 10;
        a = x;
        b = y;
        while (b != 0)
        {
            t = b;
            b = a % b;
            a = t;
        }

        hcf = a;
        lcm = (x * y) / hcf;

        System.out.print("HCF and LCM of : " + x + " and " + y + " is :\n");
        System.out.print("HCF = " + hcf);
        System.out.print("\nLCM = " + lcm);
    }
}

```

Program to find volume of cube

```

public class Cube {

    public static void main(String arg[]) {
        int side=5;
        float volume=side * side * side;
        System.out.println("Volume of Cube :"+ volume);
    }
}

```

program to print the reverse of a given number

```

public class ReverseNum
{

    public static void main(String[] args)
    {

```

```

        int rev = 0;
        int num = 1234;
        int no=num;
        while (num > 0)
        {
            int rem = num % 10;
            rev = rem + (rev * 10);
            num = num / 10;

        }

        System.out.println("Number = "+no);
        System.out.println("Reverse = "+rev);
    }
}

```

Program to convert integer to roman letters

```

import java.util.HashMap;
import java.util.Scanner;

public class IntegertoRoman
{
    private static int[] bases = { 1000, 900, 500, 400, 100, 90, 50, 40, 10, 9, 5, 4, 1 };
    private static HashMap<Integer, String> map = new HashMap<Integer, String>();

    private static void setup()
    {
        map.put(1, "I");
        map.put(4, "IV");
        map.put(5, "V");
        map.put(9, "IX");
        map.put(10, "X");
        map.put(40, "XL");
        map.put(50, "L");
        map.put(90, "XC");
        map.put(100, "C");
        map.put(400, "CD");
        map.put(500, "D");
        map.put(900, "CM");
        map.put(1000, "M");
    }

    public String intToRoman(int num)
    {
        setup();
        String result = new String();
        for (int i : bases)
        {
            while (num >= i)
            {

```

```

        result += map.get(i);
        num -= i;
    }
}
return result;
}

public static void main(String arg[])
{
    System.out.println("Enter the number : ");
    Scanner sc = new Scanner(System.in);
    int no = sc.nextInt();
    IntegerToRoman in = new IntegerToRoman();
    int value=no;
    String sd = in.intToRoman(value);
    System.out.println(value+" ---> " + sd);
}
}

Program to count number of words in given string
public class WordCount
{
    public static void main(String args[])
    {
        String s = "welcome to candid java tutorial";

        int count = 1;

        for (int i = 0; i < s.length() - 1; i++)
        {
            if ((s.charAt(i) == ' ') && (s.charAt(i + 1) != ' '))
            {
                count++;
            }
        }
        System.out.println("Number of words in a string = " + count);
    }
}

```

Program to count number of duplicate words in given string

```

public class CountWords
{
    public static void main(String[] args)
    {
        String input="Welcome to Java Session Session Session";
        String[] words=input.split(" ");
        int wrd=1;

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

```

```

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

            if(words[i].equals(words[j]))
            {

                wrc=wrc+1;
                words[j]="0";

            }

        }
        if(words[i]!="0")
        System.out.println(words[i]+"--"+wrc);
        wrc=1;

    }

}

}

}

Program to remove duplicate words in given string
public class RemoveDuplicate
{

    public static void main(String[] args)
    {

        String input="Welcome to Java Session Java Session Session Java";
        String[] words=input.split(" ");
        for(int i=0;i<words.length;i++)
        {

            if(words[i]!=null)
            {

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

                    if(words[i].equals(words[j]))
                    {

                        words[j]=null;

                    }

                }

            }

        }
        for(int k=0;k<words.length;k++)
        {

            if(words[k]!=null)
            {

                System.out.println(words[k]);

            }

        }

    }

}

}

```

Program to count each words and total number of words in given string

```
import java.io.IOException;

public class FindTtalCountWords
{

    public static void main(String args[]) throws IOException
    {
        countWords("apple banna apple fruit fruit apple hello hi hi hello hi");
    }

    static void countWords(String st)
    {
        String[] words = st.split("\\s");
        int[] fr = new int[words.length];
        for (int i = 0; i < fr.length; i++)
            fr[i] = 0;
        for (int i = 0; i < words.length; i++)
        {
            for (int j = 0; j < words.length; j++)
            {
                if (words[i].equals(words[j]))
                {

                    fr[i]++;

                }
            }
        }

        for (int i = 0; i < words.length; i++)
        {
            for (int j = 0; j < words.length; j++)
            {
                if (words[i].equals(words[j]))
                {
                    if (i != j)
                    {
                        words[i] = "";
                    }
                }
            }
        }

        int total = 0;
        System.out.println("Words and words count:");
        for (int i = 0; i < words.length; i++)
        {
            if (words[i] != "")
            {
```

```

        System.out.println(words[i] + "=" + fr[i]);

        total += fr[i];

    }

}

System.out.println("Total words counted: " + total);

}

}

```

Program to reverse the string and check whether it is palindrome or not

```

public class PalindromeChecking
{
    public static void main(String[] args)
    {
        String inpstr="AMMA";
        char[] inpArray = inpstr.toCharArray();
        char[] revArray = new char[inpArray.length];
        int j=0;
        for (int i = inpArray.length - 1; i >= 0; i--)
        {
            revArray[j]=inpArray[i];
            j++;
        }
        String revstr=String.valueOf(revArray);
        if(inpstr.equals(revstr))
        {
            System.out.println("The given string is a Palindrome");
        }
        else
        {
            System.out.println("The given string is not a Palindrome");
        }
    }
}

```

Program to delete vowels in a given string

```

public class RemoveAllVowels {

    public static void main(String[] args) {
        String string = "Welcome to Candid Java Programming";
        System.out.println("Input String : "+string);
        string = string.replaceAll("[AaEeIiOoUu]", "");
        System.out.println(string);
    }
}

```

Program to capitalize first letter of each word in string

```

public class StringCapital
{
    public static void main(String[] args)
    {
        String str = "welcome to candid java program";
        StringBuilder result = new StringBuilder(str.length());
    }
}

```

```

        String words[] = str.split("\\ ");
        for (int i = 0; i < words.length; i++)
        {

result.append(Character.toUpperCase(words[i].charAt(0))).append(words[i].substring(1)).append
(" ");

        }

        System.out.println(result);

    }

}

```

Program to split a comma-separated string

```

public class CommaSeparated
{
    public static void main(String[] args)
    {
        String input="Welcome,to,Java Session Session Session";
        String[] words=input.split(",");
        for(int k=0;k<words.length;k++)

        {

            System.out.println(words[k]);

        }
    }
}

```

Program to convert ASCII value to String

```

public class AsciiToCharacter
{
    public static void main(String[] args)
    {
        char c;
        for(int i=65;i<=90;i++)
        {
            c =(char)i;
            System.out.println(i+" = "+c);
        }
    }
}

```

Program to replace vowels with star

```

public class VowelswithStar
{

```



```

public static void main(String[] args)
{
    String string = "Welcome to Candid Java Programming"; //Input String
    System.out.println("Input String : "+string); //Displaying Input String
    string = string.replaceAll("[AaEeIiOoUu]", "*"); //Replace vowels with star
    System.out.println(string);    //Display the word after replacement

}
}

```

Program to print character position count in a given string

```

public class LetterPositionCount
{

    public static void main(String args[])
    {

        String s = "CANDIDJAVA";
        char[] a = s.toCharArray();
        int i = 1;
        {
            for (char output : a)
            {

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

            }

        }

    }

}

```

Program to print reversed string by word in given line

```

public class ReverseWord
{

    public static void main(String[] args)
    {

        String input="Welcome to Java Session";
        String[] words=input.split(" ");
        String[] revwords=new String[words.length];
        int j=0;
        for(int i=words.length-1;i>=0;i--)
        {
            revwords[j]=words[i];
            System.out.print(revwords[j]+" ");
            j++;
        }

    }

}

```

```
}
```

Program to returning a string as reverse text

```
public class StringReverse {

    public static void main(String args[])
    {
        String string = "Welcome to Java Programming and Dotnet Programming";
        String[] wordsCount = string.split(" ");

        System.out.println("The Given String is:\n" + string + "\n");
        System.out.println("After Reverse String is:");

        for(int i = wordsCount.length;i > 0;i--)
        {
            System.out.print(wordsCount[i - 1] + " ");
        }
    }
}
```

Program to find difference of minimum and maximum numbers of array in java

```
import java.util.Scanner;
class MinMaxInArray
{
    int getMax(int[]inputArray)
    {
        int maxValue=inputArray[0];

        for(int i=1;i<inputArray.length;i++)
        {
            if(inputArray[i]>maxValue)
            {
                maxValue=inputArray[i];
            }
        }
        return maxValue;
    }

    int getMin(int[]inputArray)
    {
        int minValue=inputArray[0];

        for(int i=1;i<inputArray.length;i++)
        {
            if(inputArray[i]<minValue)
            {
                minValue=inputArray[i];
            }
        }
    }
}
```

```

        return minValue;
    }
}

public class ExArrayDifference
{
    public static void main(String[] args)
    {
        int n;
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of elements you wants to enter :");
        n=sc.nextInt();
        int arr[]=new int[n];
        for(int i=0;i<arr.length;i++)
        {
            System.out.print("Enter ["+(i+1)+"] element :");
            arr[i]=sc.nextInt();
        }

        MinMaxInArray mm=new MinMaxInArray();
        System.out.println("Maximum value is :"+mm.getMax(arr));
        System.out.println("Minimum value is :"+mm.getMin(arr));
        int Difference=mm.getMax(arr)-mm.getMin(arr);
        System.out.print("Difference between Minnimum and Maximum in array is : "+
+Difference );
    }
}

```

Program to count the occurrences of each character

```

class NoOfOccurenceOfCharacters
{
    static final int MAX_CHAR = 256;
    static void getOccuringChar(String str)
    {
        int count[] = new int[MAX_CHAR];
        int len = str.length();
        for (int i = 0; i < len; i++)
            count[str.charAt(i)]++;
        char ch[] = new char[str.length()];
        for (int i = 0; i < len; i++) {
            ch[i] = str.charAt(i);
            int find = 0;
            for (int j = 0; j <= i; j++) {
                if (str.charAt(i) == ch[j])
                    find++;
            }

            if (find == 1)
                System.out.println("Number of Occurrence of " +

```

```
        str.charAt(i) + " is:" + count[str.charAt(i)]);
    }
}
public static void main(String[] args)
{
    Scanner sc = new Scanner(System.in);
    String str = "geeksforgeeks";
    getOccuringChar(str);
}
}
```